

COMMUNICATION

Humour beyond human: eco-humour as a pedagogical toolkit for environmental education

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(Received 02 March 2022; revised 27 April 2023; accepted 28 April 2023; first published online 30 May 2023)

Abstract

This article strives to open a window on ‘eco-humour’, an umbrella term for diverse forms of humour targeting ecological and environmental issues. It encourages readers to consider eco-humour as a valuable, pedagogical toolkit for environmental education and communication. To this aim, eco-humour is, first, put into perspective of humour scholarship. In particular, I discuss the critical and corrective potential of humour to address and possibly redress environmental issues. Pedagogical benefits of humour are, then, touched upon to pave the way for a discussion of ‘humour-integrated environmental education’. The paper also addresses UNESCO’s 2030 roadmap of education for sustainable development and the ‘sustainability’ component of Australian Curriculum to further justify and contextualise the use of eco-humour. Moreover, several university-based initiatives to integrate eco-humour into environmental education are considered. Likewise, I briefly address ‘humour-integrated language learning’ as an emerging approach in language education that may offer valuable insights into eco-humour curriculum integration. Finally, the article points out several practical considerations and future directions in humour-integrated environmental education.

Keywords: eco-humour; environmental education; humour; environmental awareness; pedagogical toolkit; innovative practices

Eco-Humour: Definition and Functions

Humour is a ubiquitous, multifaceted and dynamic phenomenon, being cast into diverse forms, types, styles and genres. It can be construed as a ‘complex system’ which evolves naturally to stay tuned to issues of paramount importance (see also Demjén, 2018; Heidari-Shahreza, 2021a). Hence, humour can effectively be employed in environmental education and communication. Discussing environmental cartoons within the purview of environmental education research and pedagogy, Gough and Horacek (2022) recommend the use of eco-humour as a component of an ‘integrated approach’. They highlight “[e]nvironmental issues are complex and require a multidisciplinary approach to resolve them, or even discuss them...cartoons take complex information and distil it, and there are obvious educational implications to this” (p.12).

The dynamical and self-organising nature of humour has made it particularly apt for a wide range of intentions and objectives across boundaries of time and place (Heidari-Shahreza, 2023; Kaltenbacher & Drews, 2020; Ziv, 2010). Human beings are, in a sense, *humour beings*, being able to communicate effectively through the simple and accessible language of humour (see also

Heidari-Shahreza, 2021a). Carter (2022, p.2), in this respect, states “[h]umour is a powerful tool for communicating climate change in media, as it helps communicate complex, often confusing topics through a humorous lens”. Pointing to the growing interest in humour-based environmental communication, Kaltenbacher & Drews (2020, p. 718) also advocate it as an “unconventional” yet effective approach to inform individuals about environmental issues.

Likewise, non-serious language can successfully be employed to speak *seriously* on a wide array of ‘hot topics’ in different contexts such as in the workplace, education or media (Cook et al., 2022). The relevant literature indicates that political humour, for instance, can be an indispensable, communicative strategy to safely touch upon socio-political ‘allergens’ such as hegemonic gendered concepts, ethnic conflicts or governments’ foreign policies (see also Heidari-Shahreza, 2023). In this regard, Feldman and Borum Chatto’s experimental study (2019) revealed that satiric comedy had significantly greater impact on positive shifts in US public viewpoints on Syrian refugees than regular serious news reports (see also Cook et al., 2022; Heidari-Shahreza, 2021a; Verhulsdonk, Nai, & Karp, 2021).

Despite such awareness-raising and ‘whistle-blowing’¹ potential, humour, “the mankind’s greatest blessing” (in Mark Twain’s words), is mainly taken for granted in education (see Bell & Pomerantz, 2016; Heidari-Shahreza, 2022). It is generally downplayed as an insignificant concept in theory, research and practice (Banas, Dunbar, Rodriguez & Liu 2011; Heidari-Shahreza, 2021b). Therefore, one may say the systematic, research-informed employment of humour has largely remained an uncharted territory in environmental education (see also Kaltenbacher & Drews, 2020). As Carter (2022) notes the potential of humour in environmental communication (and education) particularly climate change media is well-documented “but this potential remains largely unrealized” (p.1).

This article principally endeavours to define and defend humour, elaborating on its far-reaching effects. Within the realm of environmental education, I argue for the potential of ‘eco-humour’ as a pedagogical toolkit (and instructional content) to cultivate environmental awareness. To my knowledge, the systematic integration of eco-humour is a notably under-explored area of educational research as well as humour scholarship to which this paper strives to offer new insights. The relevant literature, at present, is mainly composed of humour-based initiatives with anecdotal evidence for the beneficial effects of humour (see Cook et al., 2022; Kaltenbacher & Drews, 2020). The article intends to encourage environmental educators to consider the curricular embedding of eco-humour in environmental education and enhance ‘humour literacy’ as a part of ‘eco-literacy’ (see also Arias, 2022; Heidari-Shahreza, 2022).

Eco-humour, by definition, aims to transcend human concerns (in its restricted, egotistic sense) and bring to the fore issues pertaining to the ‘ecosphere’ or all ecosystems of the Earth (see also Boykoff & Osnes, 2019). Thus, eco-humour is, in this sense, *humour beyond human*. Eco-humour, in its diverse manifestations (e.g., eco-jokes, eco-cartoons, eco-comedies), resorts to seriously ludic communication. It marshals numerous resources to express the need for sustainable development by the individuals from all different life sectors. Hence, it may significantly contribute to higher involvement in and responsibility for sustainable solutions (Zhang & Pinto, 2021). Eco-humour can also speak truth to power on the ‘butterfly’ and/or ‘domino’ effects of environmental policies; how the wrong done locally may far, devastating effects (see Heidari-Shahreza, 2021a, 2023).

Similarly, eco-humour may lend a hand in alleviating ‘eco-anxiety’ (i.e., the chronic fear of environmental crises). As Carter (2022, p. 2) highlights “[h]umour can effectively communicate risks without overwhelming viewers or provoking distancing or avoidance behaviors . . . , and can inspire action through an emphasis on hope over fear”. In fact, humour may significantly aid in maintaining mental and social health. In this regard, Osnes, Boykoff and Chandler (2019) found that good-natured comedy could help individuals develop optimistic perspectives on climate changes and deal with negative emotions more efficiently. Thus, eco-humour can successfully communicate different feelings and emotions, underscore biocultural differences and manifest

implicitly or explicitly the dynamics of interpersonal and intercultural relations (see Carter, 2022; Gough & Horacek, 2022; Ziv, 2010 for more information and related examples). In other words, eco-humour is, in essence, a more-than-human, environmentally distributed and culturally diverse phenomenon which may be employed to speak for the environmental and cultural heritage of nations (see also Cook et al., 2022; Osnes, Boykoff & Chandler, 2019).

In practical terms, eco-humour may draw upon rhetorical devices (e.g., false analogy, exaggeration, metaphor, etc.), audio-visual resources (pictures, videos, music) or socio-cultural schemata (Attardo, 2020; Heidari-Shahreza, 2021a). These assets of eco-humour are collectively able to communicate many environmental protection themes (see also Arias, 2022). Consider one-liners below:

“I don’t have a Carbon Footprint because I drive everywhere!”

“Clean coal is a bit like wearing a porous condom- at least the intention was there”.

On the surface, they may look like trivial gap-fillers to spice up written or spoken communication. Nevertheless, in light of the relevant scholarship, such jokes are, in essence, (socio-cognitive) ‘icebergs’ denoting and connoting serious messages (see e.g., Attardo, 2020; Heidari-Shahreza, 2021a; Kaltenbacher & Drews, 2020). Due to its ‘threshold effects’, such humour, in the long run, may notably contribute to the public awareness of environmental education. Thus, it can be said that eco-humour (as an umbrella term) takes slow, small and steady steps to address and possibly help redress the environmental challenges the world faces (see also Carter, 2022; Zhang & Pinto, 2021).

Several characteristics of eco-humour notably add up to its critical and corrective force: Firstly, humour is fundamentally versatile, deniable and polysemous (Attardo, 2020; Heidari-Shahreza, 2021a). Under the façade of humour, one may safely target a broad range of environmental concerns (e.g., global warming, waste production, deforestation), sheltering in “I was just joking” or “I meant this not that” disclaimers (see also Arias, 2022 for the notion of ‘provisional safe spaces’ through humour in nature education). This jocular tone gives voice to the devoiced, enabling environmentalists to speak truth to power even in contexts with limited freedom of expression (see also Heidari-Shahreza, 2023; Verhulsdonk et al., 2021).

Secondly, humour principally contains and entails high levels of creativity and peculiarity (Bell & Pomerantz, 2016; Heidari-Shahreza, 2021b). Therefore, it may singularly be effective in drawing the attention of the public and policymakers (both local and global ones) to environmental issues. In other words, it provides versatile tools for enhancing individuals’ eco-literacy, helping them become ‘green citizens’ of the world. This also points to the potential of humour to battle against environmental ‘misinformation’, the misleading information about environmental issues particularly on social media (see Treen, Williams & O’Neill, 2020). It also speaks of the possible role of humour in developing individuals’ creative and critical thinking skills as two core objectives in general education (see also Cook et al., 2022 for information on Cranky Uncle, a game-based initiative with similar purposes).

Thirdly, humour especially the visual form (e.g., cartoons, memes, comedy movies) often enjoys simplicity and universality. That is, it can feasibly communicate environmental themes to the lay audience with diverse sociolinguistic backgrounds and across different countries and cultures (see Osnes, Boykoff, & Chandler, 2019; Ziv, 2010). For instance, eco-cartoons, besides the print media, can widely go viral on social networks (e.g., Instagram, Facebook, Twitter, TikTok), contributing greatly to environmental awareness (see also Zhang & Pinto, 2021). Figure 1 below depicts two cartoons with the overriding themes of global warming and marine pollution. Such cartoons provide a concise, effective and peaceful way of addressing such issues (Gough & Horacek, 2022). They bring laughter to their audience while inviting them to learn and live a greener life. In other words, eco-cartoons can be less counter-arguing, more engaging and may

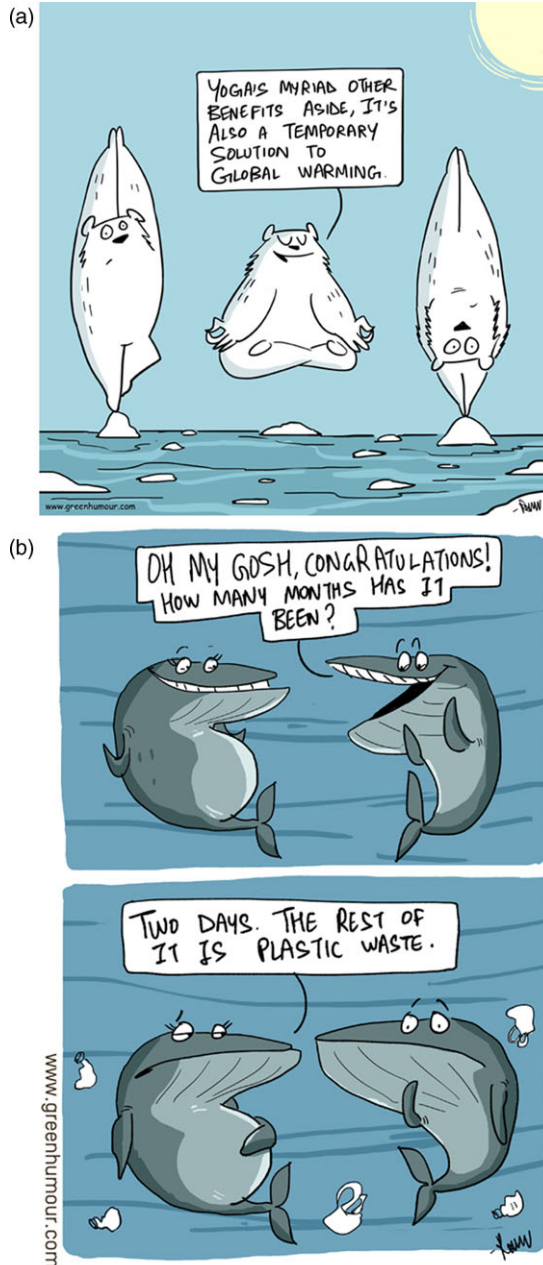


Figure 1. Eco-cartoons, created by Rohan Chakravarty (www.greenhumour.com) reprinted with permission.

potentially result in greater support for action particularly in communicating environmental issues to people who initially seem unconcerned (Cook et al., 2022).

In short, eco-humour with its transformative power has the potential to go far in environmental education and protection, putting forth an efficient way to grapple with environmental issues and advance 'environmental literacy'. In the next section, I will briefly

elaborate on pedagogical benefits of humour and provide an outline for integrating eco-humour into the curriculum of environmental (and sustainability) education.

Eco-Humour: Pedagogical Benefits and Curriculum Integration

The existing literature on humour in education (or ‘pedagogical humour’) covers studies carried out in different educational contexts by scholars from various scientific backgrounds (e.g., education, psychology, sociology, linguistics). This scholarship, being developed and revised for several decades (see Banas et al., 2011; Kaltenbacher & Drews, 2020), strongly indicates that pedagogical humour may, in fact, be conducive to notable benefits such as:

(a) Higher attention to and engagement in instructional content, resulting in more enjoyment and higher learning on the part of the students (see e.g., Bell & Pomerantz, 2016; Heidari-Shahreza, 2022; Oshima, 2018).

(b) Higher positive interdependence, class interaction and teacher–student rapport, creating a more secure, favourable class atmosphere for both teachers and learners (see e.g., Arias, 2022; Banas et al., 2011; Heidari-Shahreza, 2021b).

The beneficial effects of humour can be invested in environmental sustainability education to create more opportunities for effective instruction. Elaborating on the character of an effective environmental educator, Rubell (2001) asserts:

“If we are naturally gregarious, have a wonderful sense of humour, are blessed with a creative mind, or have a charisma and gift of presentation that draws people to our ideas, then perhaps we have a more ‘up front’ role to play in environmental education” (p. 150).

Humour-integrated environmental education can potentially contribute to taking such *up-front* position by honing educators’ sense of humour and providing more attractive and creative methods of teaching delivery and content presentation. Discussing ‘outdoor learning’ within environmental education, Fang, Hassan, and LePage (2023) assert that the instructional content presented to students can turn to be “dry and boring”. They conclude that “teachers need to have a sense of humor . . . when teaching” (p.253). Furthermore, humour-integrated environmental education may also lend a hand in familiarising students with biocultural differences and improving ‘cross-cultural inclusivity’ in environmental education programmes (Arias, 2022). To integrate eco-humour into environmental sustainability education, the ‘curriculum framework’ should initially be decided upon. Then, eco-humour can meaningfully be incorporated into the components of the curriculum. The discussion of the curricula for environmental education goes beyond the aim and the scope of this article (see e.g., Reid, 2018 for more information). Nevertheless, it is worth highlighting that education systems all over the world should embrace environmental education as a *cross-curriculum priority* (see also Dymont, Hill, & Emery, 2015).

In this respect, UNESCO declared “environmental education must be a core curriculum component by 2025” (Berlin Declaration on Education for Sustainable Development, 2021). Within this purview, UNESCO’s 2030 roadmap of education for sustainable development (ESD) seems to provide the curricular basis for (humour-integrated) environmental education. As Bylund, Hellberg and Knutsson (2022, p. 41) recommend, ESD for 2030 should be viewed as a “global *education policy*” in a broad sense, covering diverse aspects of environmental education (see also Menzie-Ballantyne & Ham, 2022). The new UNESCO framework addresses three macro-level learning dimensions: a) Social and emotional, b) cognitive and c) behavioural. It strives to promote the right ‘attitude’ (metaphorically, heart), ‘awareness’ (head) and ‘action’ (hands) required for setting the world on a more sustainable course. Humour can be employed to strengthen these learning dimensions and to be better equipped in the global battle against ‘environmental illiteracy’ and sustainability challenges. It is worth noting that ‘transforming

learning environments’ and ‘building capacities of educators’ are highlighted in the five priority action areas of 2030 Agenda. The beneficial effects of pedagogical humour can be invested in to work towards these priorities (see Bylund, Hellberg, & Knutsson, 2022).

The related literature (see e.g., Boykoff & Osnes, 2019; Carter, 2022; Kaltenbacher & Drews, 2020) indicates that eco-humour, among other things, can aid in (a) fostering empathy and compassion for the planet and cultivating appropriate values and attitudes for a more sustainable life, (b) understanding environmental issues and their interplay with human beings, and (c) taking practical action in achieving the sustainability development goals (SDGs) outlined in UNESCO 2030 roadmap (for more information on the SDGs, see Berlin Declaration on Education for Sustainable Development, 2021). Humour-integrated environmental education can help reach these SDGs. In particular, target 4.7 of SDG 4 (i.e., ‘quality education’), underscores the need for enhancing learners’ eco-literacy to serve as change agents for a more sustainable future (Cebrián, Mogas, Palau, & Fuentes, 2022). The creativity, practicality, universality and jocularity inherent to eco-humour can collectively be a driving force and a missing link in raising environmental awareness and realising quality education (see also Arias, 2022; Heidari-Shahreza, 2021b). By the same token, it is also well-suited for the ‘interdisciplinarity’ inherent to sustainability education (see Dymont et al., 2015). Thus, eco-humour should properly be employed in education for, about, and through environment at primary, secondary and tertiary levels (see also Berlin Declaration on Education for Sustainable Development, 2021; Heidari-Shahreza, 2022; Kaltenbacher & Drews, 2020).

To expand upon the notion of humour-integrated environmental education, the Australian Curriculum is briefly examined: This framework encourages educators to integrate literacy and numeracy skills with learning experiences which are conducive to ‘education for global citizenship’ and ‘education for sustainable development’ (see Menzie-Ballantyne & Ham, 2022). Australian Curriculum has included environmental sustainability education as a cross-curricular priority. The sustainability dimension of Australian Curriculum (version 9) hinges on four key concepts of ‘systems’, ‘world views’, ‘design’ and ‘futures’. Briefly, these organizing ideas are intended to make students familiar with a) life-supporting systems on Earth (e.g., biosphere), b) diverse world views on ecosystems (e.g., desert, forest, marine), c) the need for innovative designs and eco-friendly products and d) courses of action to take for a more sustainable future. They are extended over the eight learning areas of English, mathematics, science, health and physical education, humanities and social sciences, the arts, technologies, and languages (see Dymont et al., 2015 for further information).

Australian Curriculum points out that ‘sustainability’ may directly or indirectly be used in any stage of instructional design (i.e., purpose, content and process) to enhance students’ environmental literacy at awareness, attitude and action levels. Eco-humour can successfully serve as the content and/or the context required for this purpose. In a recent critique of Australian Curriculum, Menzie-Ballantyne and Ham (2022), advocate an ‘integrated’ approach which not only caters for what to teach but also *how* teachers aim for educational goals. It is also worth pointing out that in the new Australian Curriculum (as of 2022), there is about 20% content reduction with the aim of adding more depth and rigour to instruction and uptake. There also seems to be more pedagogical freedom for teachers and greater emphasis on innovative practices both in teaching delivery and the sustainability dimension (see Australian Curriculum, version 9, 2023). This, in essence, adds further credibility to the notion of humour-integrated environmental education as an innovative pedagogical approach.

In practice, eco-cartoons in Figure 1, for instance, can serve several school subjects within Australian Curriculum. Educators may initially introduce global warming or marine pollution with the help of these cartoons in the science class. Students can, then, be encouraged to try their hands at drawing cartoons with (the same) ecological themes in the arts class. Their eco-cartoons may also be digitised and exhibited online, even be used to create a (social media) campaign, as a collaborative project in the technologies class (see also Osnes, Boykoff, & Chandler, 2019;

Verhulsdonk et al., 2021). It should be noted that such integrated practice can also contribute to ‘ecomedia’ literacy (education), making students more familiar with and engaged in ‘activist-oriented’ approaches to ecological crises and environmental justice efforts (see Thevenin, 2022 for further information on ecomedia and a relevant case study). By the same token and given the prominence of ‘blended learning’, internet memes can also be invested in as a cross-curricular tool and a powerful form of environmental communication (see Ross & Rivers, 2019). In a relevant study, Zhang and Pinto (2021) investigated the effects of climate change memes on the perceived risk of climate change and civic engagement intentions. Their findings revealed that such memes could increase the intention to take part in climate change campaigns, without negatively altering its risk perception.

The ‘Stand Up for Climate Change’ initiative also gives insights into using eco-humour for environmental education and communication. This initiative took place over three years (2016–2018) as a part of a larger project called ‘Inside the Greenhouse’ (ITG) at the University of Colorado, USA. Each year, undergraduate students (mostly majoring in Environmental Studies) performed stand-up, improvisation or sketch comedy to communicate various climate change issues. The project also held an international short video competition with the same theme (see Boykoff & Osnes, 2019 for further information). Overall, this humour-based initiative could notably contribute to enhancing the eco-literacy of its audience.

In a similar initiative named ‘Draw down, Act Up!’ students were encouraged to create original games and short comic skits to promote climate solutions. The intended audience for this project was primarily the youth and their families, visiting Rocky Mountain National Park in 2018. As an example, the ‘Omnivore’ game, designed for +6 age group, brought the environmental effects of dietary choices to the attention of the audience. In this game, the players raced to grab red balls (meat), green balls (plants) or blue balls (water) and put them into their containers. The game intended to familiarise individuals with the resources necessary for a meat-based diet and the advantages of a plant-based alternative (see Osnes, Boykoff & Chandler, 2019) for more information on this and similar games and skits). It should be noted that the funny games and skits originated from this project, perhaps with some modifications, can also be used to raise environmental awareness within school curriculum (see Cook et al., 2022 for the pedagogical employment of a similar game in educational settings).

While such initiatives are indeed insightful and beneficial, they are still far from fully humour-integrated environmental education. As Cook et al. (2022) point out “there is a dearth of research exploring the use of humor in environmental education” (p. 4) and related studies or teaching practices generally provide only *anecdotal evidence* for pedagogical effects of humour. The present article strives to argue for the systematic, literature-informed investigation and employment of eco-humour. It calls for the careful design, integration and implementation of *content-relevant* humour in education. In other words, pedagogical humour, in its true sense and application, extends beyond sporadic incidences of funniness, teachers’ joking around in the classroom or humour-based isolated projects. To provide some initial ideas on such systematic, integrative approach to environmental education, I briefly outline three possible curriculum approaches and present a sketch of ‘humour-integrated language learning’ (HILL) as an emerging model in language education. Theoretically, it seems HILL can serve as a *design template* to integrate eco-humour into environmental education.²

Broadly, HILL assumes three basic curriculum designs to deal with instructional content, process and pedagogical outcomes: ‘backward’, ‘central’ and ‘forward’ (see Figure 2). HILL principally advocates backward instructional design for it starts from the end in the design of humour-integrated instructional system. That is, in this curriculum approach, first, pedagogical outcomes are determined. Afterwards, process and content along with the milestones of knowledge mastery (or evidence for attainment) are taken into account (see also Bell & Pomerantz, 2016). Since the instructional objectives are determined at the outset, the backward approach has the advantage of aiming more accurately and efficiently for the content knowledge

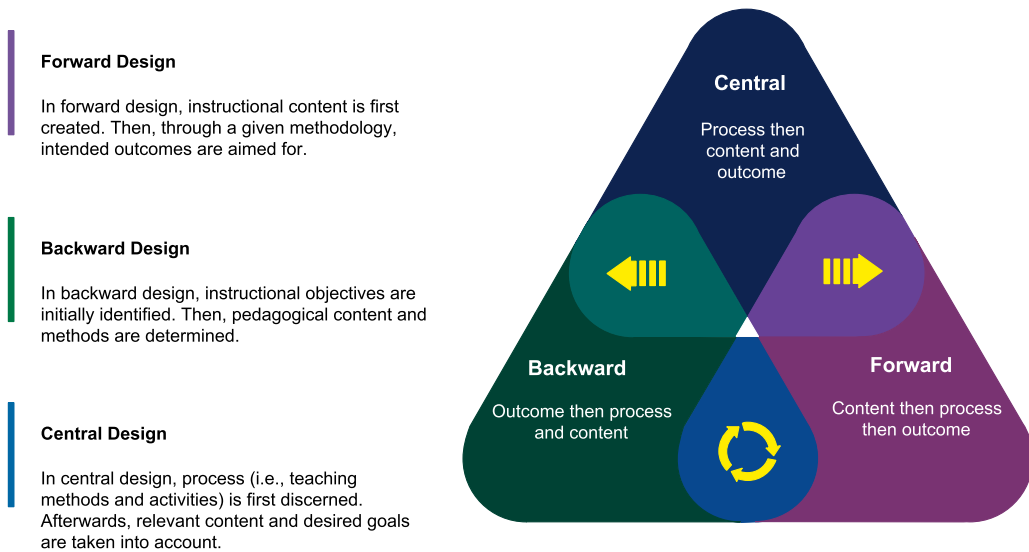


Figure 2. Curriculum approaches in humour-integrated environmental education (based on Richards, 2013).

(Heidari-Shahreza, 2021b; Richards, 2013). Taking the same stance, Arias (2022, p.11) warns environmental education programmes against relying on “general directives to be funny” or adopting an “uncritical approach” to humour. He recommends them to (initially) determine “their goals and values around the use of humour, especially for what purposes educators should and should not use humour.” Hence, through backward design, the risk of off-task, irrelevant humour is reduced and humour-integrated environmental education may provide a controlled, carefully-designed means to accomplish instructional ends (see Heidari-Shahreza, 2020 for a detailed discussion of HILL approach).

In the next section, I will address the practical, sometimes counter-effective, side of eco-humour, putting forward several future directions in humour-integrated environmental education.

Eco-Humour: Practical Considerations and Future Directions

As mentioned earlier, pedagogical humour espouses planned, disciplined integration of eco-humour into environmental education. This is not to refute those spontaneous moments of laughter that may naturally occur in an educational setting. Such humorous incidences can in fact, contribute to some of the beneficial effects of humour (see also Arias, 2022; Heidari-Shahreza, 2021b). Nevertheless, due to its ‘flash-in-the-pan’ nature, significant pedagogical benefits may not be observed. Planned or natural humour, in either case, teachers’ sense of humour or more technically, their ‘humour orientation’ should be improved (see Banas et al., 2011). Such professional development can also contribute to ESD 2030 priority, building capacities of educators (see Bylund et al., 2022).

In addition, the ‘humour competence’ of teachers and students should be enhanced as it can serve, at least, two valuable purposes: Firstly, it paves the way for more efficient employment of eco-humour in environmental education, reducing the risk of falling into its practical pitfalls such as being a digression from the subject matter, students’ getting offended, or teachers’ losing their authority (Bell & Pomerantz, 2016; Heidari-Shahreza, 2020; 2021b; Kaltenbacher & Drews, 2020). Secondly, there is growing recognition of the important role of humour in intercultural communication (see e.g., Arias, 2022; Oshima, 2018; Osnes, Boykoff, & Chandler, 2019). Hence,

enhancing ‘humour literacy’, through humour-integrated environmental education, can aid environmentalists in communicating environmental issues more effectively across cultures. As Menzie-Ballantyne and Ham (2022) recommend “schools and education systems need to catch up and provide teachers with the mandate, knowledge and skills to explore new ways of planning and teaching and new approaches to student agency.” This, in turn, can substantiate the notion of humour literacy through eco-humour curricular integration as a *means* and an *end* in environmental education (i.e., humour as and for eco-pedagogy³).

Moreover, exploring the place of humour in environmental communication, Kaltenbacher and Drews (2020) warn against the possible counter-effects of eco-humour such as reducing credibility and trivialising environmental issues. They contend “the effect and success of humor depends on its type and form of communication as well as the targeted audience” (p. 10). That is, the effects of satirical humour, for instance, in the form of text (i.e., verbal communication) on lay audience may notably be different for another form of humour or a different group of audience (e.g., visual, self-deprecating humour delivered to some expert viewers). This does not necessarily cast doubt on the validity and effectiveness of humour-integrated environmental education. Rather, it calls for further investigation into pedagogical humour and, as mentioned, more investment in humour literacy. Addressing the increasing emphasis on more socially just approaches in environmental education, Arias (2022, p.3) highlights “programs should understand how to incorporate humor effectively to be an asset—rather than a barrier—to cross-cultural connections.” Therefore, educators should head the ‘double-edged’ nature of humour and consider the educational norms, ‘positionality’, cross-cultural and individual differences in implementing humour (see also Carter, 2022, Heidari-Shahreza, 2020, 2021b; Oshima, 2018).

It should also be noted that humour-integrated environmental education is not intended to override current (effective) educational paradigms or teaching practices. Eco-humour is advocated by the relevant scholarship (see e.g., Boykoff & Osnes, 2019; Kaltenbacher & Drews, 2020) as a pedagogical toolkit used to strengthen and facilitate environmental education and communication. As Cook et al. (2022, p.13) contends “[t]he approach of combining creative humour and scientific content about climate change [and other environmental issues] speaks to the broader principle of adopting ‘interdisciplinarity’ to address complex societal issues.” Hence, various instructional designs and curriculum approaches across different disciplines should be explored to discern how best eco-humour can fit in. This inquiry can probably be most fruitful if humour scholars join hands with environmental education researchers (see also Arias, 2022). Such collaboration, in the long run, may also inform and influence both humour and environmental literacy, offering better ways to ensure a sustainable future with the help of eco-humour; humour that is beyond human and ‘down to earth’!⁴

Acknowledgements. None.

Financial Support. This research received no specific grant from any funding agency, commercial, or not-for-profit sectors.

Conflicts of Interest. None.

Ethical Standards. Not applicable.

Endnotes

1 The notion of whistle-blowing is used here to highlight the potential of humour as a safe outlet to draw the public’s attention to environmental issues within organisations with limited environmental accountability and transparency.

2 Obviously, a thorough treatment of possible instructional designs for a systematic implementation of humour in environmental education goes beyond this article as a short ‘communication piece’ with the primary aim of highlighting the pedagogical significance of eco-humour. The references made, however, can serve as a good starting point for interested readers.

3 Similar notions, that is, second language (L2) humour and L2 humour literacy have also been put forth in language education and intercultural communication (see Heidari-Shahreza, 2020, 2021b).

4 This expression is used idiomatically to imply that humour can and should go beyond humans' egoistic concerns and take a practical, responsible approach, prioritising Earth-related issues. 'Down to earth' can also be allusive to the light-hearted docuseries about sustainable practices or the environmental magazine publishing eco-cartoons, both with the same title.

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Appendix A: Sample Activity

Humour-integrated environmental education can be realised in diverse ways. This particularly holds water if a 'backward' instructional design is employed to implement this approach. As mentioned in the article, humour-integrated backward design takes four steps:

- Instructional objectives are first determined;
- Achievement milestones (or evidence for attainment) are identified;
- Humorous content is put into context (e.g., humorous text and task are integrated);
- Actual instruction is designed and planned.

The activity below only serves as a case in point, providing a sketch of this approach in practice. It should be noted that practical ideas to integrate humour into environmental education abound, being confined to teachers' creativity and contextual constraints. Moreover, to serve as a general sample (and possibly a template), the following activity is inevitably 'decontextualised'. That is to say, details may be added to the content and procedure descriptions or other variations can be considered to better cater for different learner and learning factors (e.g., age, cognitive readiness, time limits, etc.)

Step 1: Instructional Objectives

- Introducing the concept of 'global warming'
- Familiarising students with environmental impacts of global warming (e.g., loss of Arctic ice)
- Informing the students on the causes of global warming (e.g., burning of fossil fuels)
- Discussing sustainable solutions for global warming (e.g., reduce, reuse, recycle strategy)
- Addressing humour (e.g., eco-cartoons) as an effective tool to communicate global warming and take action

Step 2: Achievement Milestones

- Students successfully solve the jigsaw puzzle.
- Students show a general understanding of global warming (e.g., they can provide a basic definition for the concept)

- Students successfully notice (and appreciate) the sarcastic tone of the text balloon in the eco-cartoon
- Students are able to generate (and understand) ideas on possible effects of global warming (e.g., the link between global warming and melting Polar ice caps)
- Students (in pairs or small groups) successfully unscramble the text boxes of the comic strip on causes and cures of global warming.
- Students comprehend major causes and discuss possible solutions.
- Students (individually or group-based) are able to create an eco-cartoon and/or a comic strip focusing on another impact/aspect of global warming.

Step 3: Humour Integration (Materials)

- An eco-cartoon on global warming (e.g., the one in Figure One) is turned into a jigsaw puzzle of n-pieces, to be determined by the instructor (e.g., 16 pieces; the more, the harder). A free online puzzle maker can readily fulfil the task or alternatively, available puzzles can be used (visit for instance, <https://im-a-puzzle.com/>).
- A comic strip on global warming with n-boxes (i.e., a set of drawings in consecutive boxes that tells a humorous story) is used. It can be found on the Internet (visit for instance, <https://www.gocomics.com>) or alternatively can be made via basic software (e.g., Microsoft Word) or many online platforms (visit for instance, <https://www.pixton.com/>). Preferably, the comic strip focuses on the causes and/or cures of global warming.

Step 4: Instruction Procedure

- The teacher encourages the students to take part in the ‘fun game’ they will begin soon.
- The teacher then makes small groups of 3-4 students (or pairs of students), giving out the packs of the eco-cartoon puzzle to each group.
- The teacher allocates sufficient time for the students to solve the puzzle (e.g., 10 minutes) while walking around guiding their learners, facilitating and monitoring the process.
- Solving the puzzle can be (more) ‘gamified’ by giving bonus points or stars in the leaderboard for the group who solves the puzzle first (i.e., the puzzle winner).
- Next, the teacher directs the students’ attention to the notion of global warming in the text balloon.
- The teacher encourages the students to take part in the discussion of global warming. Creative and critical thinking techniques (e.g., brainstorming, Five WH questions, etc.) should possibly be used. The teacher strives to relate the topic to the students’ personal lives and their hands-on experiences. As a rule of thumb, this phase may take 15-20 minutes.
- The teacher then substantiates the discussion by drawing students’ attention to the ironical message of the eco-cartoon and the ‘butt of humor’ (i.e., who is to blame!). The teacher makes sure the class appreciates how *playfully* and *effectively* a serious issue is communicated in this piece of humour (5 minutes seem minimally enough).
- Afterwards, the teacher invites the students to participate in the second fun game they are about to start (i.e., the comic strip).
- Next, the teacher makes small groups of 3-4 students (or pairs of students), giving out the sets of scrambled, isolated boxes of the comic strip. New groups can be made or the same groups may work together again.
- The teacher asks the groups to put the boxes in order to make the comic strip and write a summary of the funny story. That is, in a short paragraph and in their own words, they retell the story. This phase can take the form of a ‘jigsaw activity’ (i.e., an information gap activity). To do so, each group has a comic strip with a *different* cause and solution for global

warming. The gamification element, as in the puzzle's case, can also be included (e.g., a star for the first group to complete the task or the best summary). This part of the instruction may take 10-15 minutes.

- The teacher then puts the comic strips together and invites the class to consider different causes of global warming and possible solutions. In case the jigsaw activity technique was used in the previous step, the 'information gap' is now bridged. Thus, students can see how the causes and the cures included in their comic strips make sense together (i.e., metaphorically, they should be able to see the 'whole picture' now). This stage can take 10-15 minutes on average.
- Afterwards, as a take-home assignment or out of class project, the teacher asks the students to work on their own or cooperatively to create similar humorous content (e.g., eco-cartoons, comic strips, or even memes) with the same/similar environmental themes. This phase can be defined within a 'cross-curricular' framework. For instance, it can cover certain instructional objectives of 'the arts', 'technologies' or 'science' learning areas. Likewise, it can be fulfilled and handed in digitally/online, being put within the perspective of 'blended' or 'technology-enhanced' learning.

Additional Notes

- In this sample activity, one can trace the techniques and principles of major educational paradigms such as task-based instruction (TBI), student-centred learning (SCL), positive education (PE), cooperative learning (CL), content-based instruction (CBI), and project/problem-based learning (PBL). There are also potential affordances for innovative frameworks such as gamification and game-based learning, blended learning, flipped learning and technology-enhanced instruction. Hence, humour-integrated teaching can (best) fit major paradigms as an add-on component.
- Preparation of humorous content (e.g., eco-cartoons, comic strips) may look, at first, inconvenient to some teachers. Nevertheless, once fully implemented and incorporated in the curriculum, the progress along this approach would be smooth. There are also strategies to aid (busy) teachers in this regard. They can be shared with teachers.
- Humour, in this approach, does not necessarily contain or entail loud bursts of laughter. Humour, by definition, is much more dependent on novelty of expression than the contextual cue, laughter. Furthermore, the instructional content may be serious. Instead, the treatment of the content can be humorous. That is, humour-integrated education is not only a matter of 'what to teach' but also 'how to teach' (see also the notion, 'humour literacy' in the article).

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Cite this article: Heidari-Shahreza, M.A. (2023). Humour beyond human: eco-humour as a pedagogical toolkit for environmental education. *Australian Journal of Environmental Education* 39, 550–562. <https://doi.org/10.1017/ae.2023.8>