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The power of positive acting; reflecting on the need for authentically positive actions and seeds of hope in educating for sustainability

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Abstract

Most of the narratives, metrics and directions around sustainability and our unsustainable societies are negative. These include those around the climate crisis; catastrophic biodiversity and habitat loss; energy, water and material shortages amid ever increasing consumerist drivers; ocean acidification; growing levels of socio-economic inequality; degrading social infrastructure; increasing wealth accumulation, greed, social atomization and social isolation, and lack of institutional trust. While these all call out the issues as they present, they paint a rather depressing picture and prognosis, with little motivational value for change. On the other hand, overly positive narratives based on techno-optimistic futures, and the power of the markets (or the right app!) to solve the world's problems are problematic, and open to charges of being inauthentic, hubristic short-termist and/or self-serving. Such narratives often ultimately serve to either mask the magnitude of the problem(s) and/or add to them. Thus while negative trends are more likely to precipitate a collective sense of helplessness and hopelessness than lead to transformative change, genuine positive wins can be inspirational, even if at small scales, as they can serve to highlight the potential for positive change.

This paper considers the levels of engagement, reflection, insights, reactions and motivation for change by engineering students when asked as part of an assignment on a sustainability module to identify and reflect upon an authentically positive initiative or development, however small, which can assist in pointing towards the necessary transformational change to a sustainable society.

Keywords: sustainability competences; transferable skills; open-ended activities; graduate attributes

1 Introduction

We are truly in a global meta-crisis, emanating from our unsustainable global consumerist growth societal paradigm. Evidence of this abounds everywhere. And the messages get gloomier by the year. The IPCC's 2023 AR6 Synthesis Report on climate change included a number of shocking headline statements (IPCC, 2023). While it warned that the extent and magnitude of climate change impacts are larger than estimated in previous assessments, it also pointed out that there are huge gaps in what is actually required and what is being done in terms of climate mitigation.

While these all have extremely negative and worrying implications for humanity, the immediate outlook for many other species is even worse. The IPBES global assessment report on biodiversity and ecosystem services (IPBES, 2019) points out massive biodiversity loss, while declaring that human activity is

threatening about a 25% of all animal and plant groups assessed. This is affirmed by the WWF Living Planet report, a comprehensive study of trends in global biodiversity and the health of the planet, which found an average decline of 69% in species populations since 1970. (WWF, 2022). Little wonder then that top scientists write of a "ghastly future", where "the scale of the threats to the biosphere and all its lifeforms – including humanity – is in fact so great that it is difficult to grasp for even well-informed experts" (Bradshaw et al., 2021). While we need to "tell it like it is", they suggest, "the remaining questions are less about *what* to do, and more about *how*," indicating that the situation requires big systemic changes and fast. (Bradshaw et al., 2021)

What then can the ordinary engineering graduate make of this, whose life and career ahead is both challenged to help address these deeply systemic issues, while somehow, as a citizen of our planet, make some sort of positive difference or contribution? The increasingly doom laden warnings, ailings and failings described above, while based in science and reality, hardly inspire the type of creative transformational action necessary.

2. The power of positive acting

As an academic who leads and teaches on a Process and Chemical Engineering programme, and who teaches a module (course) on "Sustainability and Environmental Protection" to these engineers, together with a postgraduate cohort with diverse backgrounds on a Sustainability and Climate Action for Enterprise programme, I have felt a dilemma. On the one hand, there is an imperative in our educational offerings (as well as more generally) to "avoid sugar-coating the overwhelming challenges ahead", as Bradshaw et al (2021) identify, in particular "given the existence of a human 'optimism bias' that triggers some to underestimate the severity of a crisis and ignore expert warnings". At the same time, we are drawn to act appropriately not by the impending threat of a likely "ghastly future", but instead by positive, inspirational and "life-hope" narratives (the latter as identified by Foster, 2008). This echoes Charles Eisenstein's mother earth metaphor, where he postulates whether it is the threat of official sanction for child neglect that drives him to look after his youngest son (if, in another universe, he were to deem it a waste of time and money to feed him) or whether it is the positive force of love, which absolutely precludes such instrumentalization and objectification (Eisenstein, 2018).

While I cover all the above in the course and its assessment, including inviting the students to reflect on why we find it so difficult to change, I felt that if we are to really support our students to go out and make a positive difference, then we need to help them find some way to be inspired to do this, and not just be weighed down by the enormous difficulties that pertain. Thus, from the 2023 iteration, I reconceived one of the assessment aspects as a positive actions project.

This involved devising a group assignment entitled "The power of positive acting". The spec calls for students to find a pathway between the negative realities which abound (including around climate crisis; catastrophic biodiversity and habitat loss; energy, water and material shortages amid ever increasing consumerist drivers; ocean acidification; growing levels of socio-economic inequality and degrading social infrastructure; increasing wealth accumulation, greed, social atomization and social isolation, and lack of institutional trust) on one hand, and on the other hand, inauthentic, short-termist and/or self-serving, overly positive or hubristic narratives, which are often based on techno-optimistic futures or the power of the markets (or the right app!) to solve the world's problems. The former paint a rather depressing picture and

prognosis, with little motivational value for change, while the latter often ultimately serve to either mask the magnitude of the problem(s) and/or add to them.

Students were thus asked to identify, research and outline an example or case study of an authentically positive initiative or idea which can genuinely help precipitate transformational change towards sustainability. This was premised on the basis that finding genuine positive wins can be inspirational, even if at small scales, as they can serve to highlight the potential for positive change. It could be a well-developed initiative, or an idea or concept which is at an early stage (or even theoretical/an idea). They were also asked to critique its implementation, identifying potential barriers for implementation, how these might be overcome, potential consequences, difficulties or problematic issues. The group were charged with creating a five minute (flash) presentation as an output.

3. Ideas identified

A range of projects and ideas were proposed by the 13 groups. These are outlined in Table 1, along with respective short student informed descriptions.

Table 1: 'Positive actions' exemplars identified by student groups.

Pfandsystem (plastic bottle deposit returns) The Pfand system of plastic bottle deposit returns that is very popular in Germany, and across mainland Europe https://dpg-pfandsystem.de/
"Too Good to Go" app A food waste reduction app and platform which allows users to source and purchase unsold food from restaurants, cafes and grocery stores at a discounted prices. https://www.toogoodtogo.com/
EnergyCloud An initiative aiming to reduce fuel poverty by using surplus renewable energy to support those in fuel poverty. https://www.energycloud.org/
Integrated Marine Trophic Aquaculture (IMTA) Involves aquatic farming of multiple, complementary species, from different levels of the food chain together for their mutual benefit. By-products from one aquatic species are used as food for another species. The fish are fed, the shellfish filter out microscopic plants and organic content from the water and seaweed absorbs minerals in the water.
World Community Grid (WCG) A transformative forum where anyone across the globe can donate unused computing power for anyone else to use to do their part to help others use computational effort to support its mission of "citizen science, youth outreach and integrative computational biology". https://www.worldcommunitygrid.org/
Frugal design *"Good design is as little design as possible."* Dieter Rams *"The capacity to simplify means to eliminate the unnecessary so that the necessary may speak."* Hans Hofmann. Reverse innovation, which evolved from the core concept of frugal design, aims to design out complexity to achieve simple, functional products with minimal waste and excess components.
Beara Atlantic temperate rainforest (Beara peninsula, west Cork) The Beara Rainforest initiative which is ran and coordinated by eco-entrepreneur Eoghan Daltun on his 72 acre woodland area on the Beara Peninsula in West Cork. https://beararainforest.com/
Green Building Technology Researching green buildings gave a hopeful insight into what can and is being done to have a positive impact on our environment.

Hemp production Hemp has health and medicinal benefits, as well as as a material for clothing and paper, while being biodegradable. The hemp crop replenishes soil nutrients while requiring little water to thrive, thus contributing to better soil health.
Patagonia brand The clothing brand Patagonia and how they seek to operate as a sustainable business, through education, activism and approach to carbon farming, with the intention of reaching their goal of becoming carbon neutral by 2025. https://www.patagonia.com/
Green-Schools The Green Schools Programme allows young people to learn more about and put into practice various environmental issues as part of a Schoolwide programme (which earn green flags, flown at School sites). This is may be used as a catalyst for broader societal change outside the school gates. Undoubtedly, it is important for young people to feel like they can be part of the solution. https://greenschoolsireland.org/
Good Ancestor Movement Wealthy people who are interested in investing their money for the greater good towards "to play their part in creating a more equitable society and ecological resilience through values-led wealth stewardship and reparative and regenerative redistribution." https://www.goodancestormovement.com/
3D Printing Architecture/eco-homes WASP 3D printed eco-homes, an easily implemented and sustainable solution. This appealing concept helps bring people back in touch with nature, working with what the planet naturally provides, but respectfully. Involves transformative change, alongside the creativity that architecture can bring, while seeking to be ecologically sound. https://www.3dwasp.com/en/3d-printing-architecture/

4.1 Features identified through student reflection

The student responses are drawn from students' reflected experiences of the assignment after it was completed, where students were asked to complete a short reflective piece. In addition, the value of positive narratives was considered as part of the module, while students were asked (before the assignment as part of the module) to consider the value of 'positive actions'. This was done via an anonymous voting app and the results are shown below in Fig. 1.

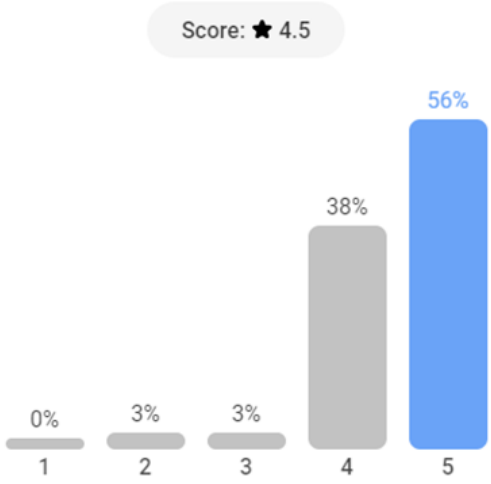


Figure 1: Aggregated responses to: To what extent do you feel narratives around 'positive actions' are more valuable that negative narratives (e.g. 'need for cutting back') in helping precipitate societal sustainability transformation? (5 stars: 'positive actions' narratives strongly best)

Among the 32 who voted, there was clearly an overwhelming level of support for the proposition than positive actions are more valuable that negative narratives in helping precipitate societal transformative change. A number of common themes were reported by students in their short reflection on the exercise and on the power of authentic positive actions and initiatives. These are aggregated into nine themes (A-I) and highlighted below with a selection of respective student quotes.

A. Futility of wallowing in "doom and gloom"

- I think that the all-too-common "doom and gloom" approach makes people defeatists, or at worst, causes them to push back against climate change.
- Wallowing in the doom cycle can leave you numb and defeatist. The subtractive narrative is off-putting and frankly people just tune out.
- To a large extent, I find that often, the majority of actions or initiatives for climate change are negatively framed in a sense that after hearing about them, I don't feel hopeful for the future.
- Fear appeals to frighten people into action have been proven to overwhelm. And for such a wicked problem as climate change, the motivation to act as an individual can feel pointless. Yet, to solve it, we need all the solutions, all the innovative thinking and all the effort from multiple perspectives. ..when I'm exposed to negative thoughts/ideas - I get stressed, my muscles contract, I stop thinking laterally, I focus on surviving.
- The discourse around climate change tends to be very negative. News headlines often use shocking figures to highlight the extent of the problem. Personally, I regularly experience climate anxiety, and can become jaded by such negativity. Any good news stories can get lost amidst the doom and gloom, if they receive coverage at all.
- Although it's crucial to be open and honest about the difficulties we encounter and the need for change, concentrating just on the negative can make us feel a sense of helplessness. Messages that only stress the necessity of making sacrifices or the detrimental effects of our actions can occasionally be overbearing and demoralising.

B. Value of Positive Actions/Initiatives: Hope:

- Positive initiatives provide much more of a sense of hope than the normal doom and gloom which is frequently referenced.
- One of my favourite accounts on instagram is *Earthly Education*. Each week they publish a segment on good news stories from around the globe. This coverage is so refreshing and shows that actually there is a lot of good in the world, and small changes can have much wider impacts. As empathetic, sensitive beings if we are constantly bombarded by negativity, we ourselves become more pessimistic.
- The urge to make sacrifices can occasionally feel negative and overwhelming, leaving one feeling guilty or helpless. On the other side, encouraging behaviors and projects give people a sense of power and hope. They inspire people and communities to take action by offering a concrete means to make a contribution to the solution as opposed to just feeling useless in the face of a massive problem.
- Learning more about positive aspects like this, provides a new and hopeful perspective.

C. Empowerment:

- Our discussions revealed that positive actions and initiatives can be a more effective approach in motivating individuals and communities towards sustainability. Rather than feeling as if they must give up things they enjoy, people are empowered to make meaningful changes.

- I believe that emphasizing positive actions and empowering individuals and communities to take meaningful steps are essential for progress towards transformative change for sustainability. This gives them a sense that they are making a meaningful contribution.
- I believe that positive actions and initiatives are more motivational than negative ones. Rather than focusing on what we need to cut back on, emphasizing positive actions encourages people to actively participate in creating a better future. This approach allows for people to take ownership of their actions and fosters a sense of responsibility towards our environment.
- I found that positive actions and initiatives, such as the Green Schools Flag, are highly motivating compared to "need to cut back" narratives. Rather than feeling restricted or deprived, positive actions empower individuals to make a positive impact on the environment and their communities. It can also create a sense of pride and accomplishment in achieving sustainability goals.
- Positive actions are much more likely to inspire others to do good from a sustainable perspective, on a large scale and a smaller scale, in comparison to a "need to cut back" narrative. It makes much more sense for global corporations to actively use their funding and reach to do good rather than simply doing less and hoping for change. This empowers others to become a part of the solution also and not a passenger in the route to the problem.

D. Value of Local/Community Actions:

- [Such actions] make you feel almost more connected to your community and increase the commitment of making the difference.
- By focusing too much on the global issues, it can often create a sense of hopelessness, but if we take small steps at a local level this can often create the most effective change. Certainly it is these local actions that eventually culminate to create the 'global'.
- These projects break down the problems at hand into smaller tangible problems which we can understand and relate to more than just referring to a collective title. When we can imagine and understand the task at hand it’s much easier to tackle and when it seems possible and has a real solution it can be much more motivating.

E. Value of Interconnection/Collaboration/Partnership:

- Through this assignment, I gained insight into the importance of collaboration and partnerships in achieving transformational change towards sustainability. Working together with other organizations and stakeholders, we can create a more comprehensive and effective approach to sustainability.
- The main reflection I believe we, as a group took from this assignment, is that transformative change toward sustainability can only be achieved through a collective effort.
- An insight I gained from this assignment is the necessity of cooperation amongst stakeholders, including governments, farmers, researchers, and consumers, to advance transformational change towards sustainability.
- Even if one single idea can only go so far in potential impact, its ability to inspire hope and thinking is perhaps even more important that actual results.

F. Motivational:

- Positive actions and initiatives are focused on growth, improvement, and abundance, while the need to cut back narratives are focused on scarcity, loss, and fear which is never a good starting point in my opinion.

- It's important to show people that it is possible to make a difference. If people are constantly telling others ''You need to cut back on this because….'', people will not change but if they physically see this change happening, they will be motivated to help too.
- Positive initiatives are more likely to be motivating as they promote growth and development, whereas cutback narratives can be demotivating as they emphasize the need to reduce or limit behaviour. While both approaches may be necessary in achieving sustainability, it is essential to balance the use of positive initiatives with the need to cut back narratives to maintain a high level of motivation and engagement.
- If we talk about the co-benefits of cycling (rather than focussing on not driving cars) and how we can enjoy fresh air, not get caught in traffic, get fit and healthy, while also benefiting the environment, we feel better about making this small change. It no longer feels like a sacrifice. I think that's how we get more people involved in climate action -showcase the co-benefits, not the "trade-offs."
- I believe positive actions and initiatives frequently drive constructive activities and projects. A sense of purpose and the desire to change the world might motivate these efforts. I feel direct outcomes include feelings of success, pleasure, and enjoyment.

G. Value of storytelling/positive narratives:

- Positive narratives also empower people to make a positive action.
- We as a people have the storytelling seanchaí [i.e. indigenous Gaelic storyteller] tradition, let's use this and tell encouraging tales about the positive directions to go and how we can get there.
- From this assignment, I learned the importance of narratives and how social influences are vital to the success of a product and/or solution.
- Our group choose to do the group presentation on positive action on the Beara Rainforest. Projects like this that have a positive narrative rather than a negative "we have to cut back" narrative are very important in my opinion. I feel that people are more likely to accept and accelerate positive change if they feel it is something positive, as opposed to being told that they can not do or have something.

H. Valuing frugal and simplicity:

- From 1920s Bauhaus to the emergence of the minimalist design tradition in the 1960s, beauty and desirability in simplicity is a well-established phenomenon. Spiritual contemplative traditions saw not only the benefits on the mind, but the inherent beauty of simplicity long before these twentieth century design schools.
- Achieving simple aesthetic beauty while minimising input material waste can be achieved through applying technological innovations in manufacturing such as stronger, more lightweight and durable materials and advances in power storage and supply.

I. Positive actions promote ambition:

- From this assignment in particular, an insight I gained is that once a clear goal is set out with a mindset of positive actions, it immediately changes the brainstorming dynamic. In the past with similar assignments relating to sustainability, when I've not been told to come at the work with a positive action, it is easy to find myself choosing a limiting option, because naturally, it still works. However, in this project, when that option was ruled out from the get-go, the group was instantly being more daring and showing greater reach with the ideas being suggested.

5 Conclusion

The assignment generated an overwhelmingly positive response, as evidenced by the quantitative feedback displays in Figure 1 and the subsequent student reflections (section 4). Clearly, authentic positive actions and initiatives have a number of compelling attributes, and it appears there is universal acceptance that it is initiatives such as these which are required to elicit the required levels of motivation and empowerment, if we are to hope to succeed in facilitating the real and meaningful transformational change at the level required in the wake of the scientific consensus. It is therefore valuable to leave the last word/s to the students' on their own prognosis and on the value of the assignment.

- I think projects like this are how transformational change towards sustainability will be achieved.
- Having done this project, I definitely still believe sustainability is still achievable but it will take more than just one good idea. It will require the collaboration of multiple ideas supporting each other to properly achieve sustainability.
- I think that while these schemes are very good developments, they are only a small part of the solution to a major problem, but hopefully, more of these types of initiatives can spring up around the world. While I don't believe it will kill climate change with a thousand cuts, it can only be better than the current order of business.
- I found this assignment very interesting and allowed us to see various perspectives from others in the group, especially the H.Dip students who have more varied experiences than ourselves [chemical engineering undergraduates]. I feel like this assignment was a good assignment to do in a group as the combination of ideas was a large part of the final ideas in our project.
- Much of this course [HDip in Sustainability and Enterprise programme] has turned me into somewhat of climate anxious ridden cynic – with the exception of this module. Perhaps I'm easily susceptible to climate guilt or perhaps I'm just more gullible, either way this assignment was a welcome exercise from the more anxiety inducing data that we experience now on a daily basis. Going forward, I will use what I learned from this not so much from the subject point of view but more the exercise itself. It's made me more aware of the good news stories, the innovation inspired by need but also how positive thinking can lead to more positive results.

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