

The Growing Threat of Climate Change on Humankind

The Welsh Government declared a climate change emergency in 2019. This sentence speaks volumes and raises the impending question, what does the future of our world look like?

What is climate change?

The United Nations define it as, "long-term shifts in temperatures and weather patterns."



Climate change is a natural process that can cause variations in the earth temperatures as this is evidently seen in history. However, since the 1800s the burning of fossil fuels such as coal, oil and gas has made human activity the biggest driver of accelerated climate change.

Other man-made factors have influenced the acceleration of our climate crisis, this includes deforestation, farming livestock, food production, transportation and many others (United Nations, 2023). These all play a role in the Greenhouse Effect due to the release of Greenhouse gases such as carbon dioxide, methane, nitrous oxide and hydrochlorofluorocarbons. These create a blanket effect which keeps heat from sunlight within our atmosphere which results in the warming of our Earth (World Meteorological Organization, 2022). United Nations have found that the burning of fossil fuels results in over 75% of global greenhouse gas release.

Changes are crucial to securing a safer future for us and our children as it is their generation who will suffer the consequences of global warming. We are already seeing how powerful the results of climate change are, how much longer can we watch our world fall apart?



Children are being extremely affected by climate change. UNESCO have released information regarding the impact of climate change on the health and wellbeing of children around the world. It has been found that by 2030

Alarming Climate Change Statistics

- Since 1880 the average global temperature has risen by 0.18°C every decade (NOAA, 2022), resulting in a total increase of 1.1°C (NASA, 2023)
- 1 billion children already live in countries with an 'extremely high risk' of climate change damage (UNICEF)
- Global scale of children affected by:
 - Heatwaves: 820 million
 - Cyclones: 400 million
 - Riverine flooding: 330 million
 - Water scarcity: 920 million
 - Vector-borne viruses: 600 million
 - Air pollution: 2 billion

approximately 132 million people could be pushed into poverty due to climate change because of its effects on health, food prices and impact of disasters such as flooding, wildfires and cyclones (UNICEF, 2021). Major concerning consequences of climate change include rising sea levels resulting in mass flooding, wildfires, cyclones, water scarcity and droughts. These statistics are terrifying and if the temperature continues to increase the consequences will become increasingly permanent and fatal.

Environmental factors such as flooding and droughts result in the death of 1.7 million each year

Let's Help Our Planet Fight Against Climate Change

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Why should children have to suffer and endure a future of climate consequences that are solely caused by our actions? That does not sound fair at all! But how can we help them when so much damage has been done? **EDUCATION!!!**

By providing them with education on global citizenship and by giving them the necessary tools to help build a more sustainable and greener future is crucial to stop the acceleration of climate change.

What is a global citizen?

Oxfam defines it as someone who is aware of and understands the wider world – and their place in it. They are a citizen of the world. They take an active role in their community and work with others to make our planet more peaceful, sustainable and fairer.

What is already being taught in Wales?

At the start of the academic year of 2022/2023 the Welsh Government implemented the Curriculum for Wales guidance which sets out expectations and key learning principles which should be taught during the compulsory school years. It creates a curriculum structure to help learners learn and develop skills to meet the four purposes and become learners who are:

- Ambitious • Enterprising • Ethical • Healthy

The Welsh Government want children to develop and become ready to be ethical and considerate citizens of the World who understand the impact of their choices and have an awareness of sustainability and the impacts of global warming.



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important issues humanity is facing such as sustainability, and social and cultural diversity to help learners become ethically informed citizens of the world and help build a more sustainable future for our world.

In order to help young learners develop and achieve these four purposes, the Welsh Government have designed a curriculum that teaches topics surrounding "Six Areas of Learning and Experience". An important part of the Area of Learning and Experience design is the topic of "Humanities". The aim of this is to allow children to explore, ignite their inspiration and develop knowledge in

Statements of What Matters

1. Enquiry, exploration and investigation inspire curiosity about the world, its past, present and future.
2. Events and human experiences are complex and perceived, interpreted and represented in different ways.
3. Our natural world is diverse and dynamic, influenced by processes and human actions.
4. Human societies are complex and diverse, and shaped by human actions and beliefs.
5. Informed, self-aware citizens engage with the challenges and opportunities that face humanity, and are able to take considered and ethical action.

The effectiveness of the implementation of these “Statements of What Matters” can be assessed following the “Principles of Progression”. These highlight the expectation of what each young learner should achieve and be able to do by the end of the curriculum.

Principles of Progression

1. Increasing effectiveness as a learner
2. Increasing breadth and depth of knowledge
3. Deepening understanding of the ideas and disciplines within Areas
4. Refinement and growing sophistication in the use and application of skills
5. Making connections and transferring learning into new contexts



Education for Sustainable Development and Global Citizenship (ESDGC)

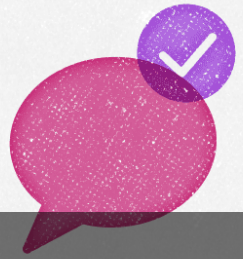
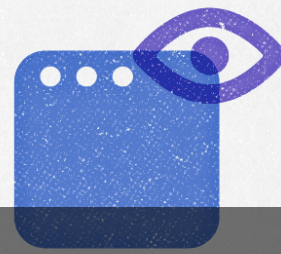
The Welsh Government introduced this educational scheme in Wales which mandates schools to teach and aid young learners how to become global citizens who understand and develop sustainable lifestyles. The aim of this addition to the curriculum is to teach children about how their choices can

affect people, the economy and the environment. Schools must embed ESDGC in their curriculum by teaching children the climate crisis and its physical, social and cultural impact on developed and developing countries and methods for sustainability including teaching on Fairtrade, not wasting water and using renewable energy (UNICEF, 2021).

Wellbeing of Future Generations Act 2015

This Act was introduced and implemented in 2015 by the Future Generations Commissioner of Wales and states that all public bodies must take into consideration the future impact of their choices and improve and prevent worsening of current problems including poverty, climate change and inequalities in health and social care. The aim is to make a long-term and sustainable improvement in Wales.

UNICEF research has found that if 16% of pupils from middle/high income countries received education about climate change, the approximate emissions of carbon dioxide would decrease by 19 gigatons by 2050



Design Thinking

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What is Design Thinking?

Harvard University define design thinking as, “a mindset and approach to learning, collaboration, and problem solving. In practice, the design process is a structured framework for identifying challenges, gathering information, generating potential solutions, refining ideas, and testing solutions”.

5 Stages of Design Thinking

- Empathise
- Define
- Ideate
- Prototype
- Test

Case Study 1 (Niehoff, M. 2017)

The Principal of New Tech High School Napa, Riley Johnson, started a 3 day whole school design thinking challenge. The task was to answer the following:

“How might we tackle a problem that our community (global, national or local faces)?”

The teachers provided guidance and the students chose from a list of themes and went into mixed school year groups. The students went through each stage of emphasising, forming a statement, generating ideas, created prototypes for testing and acted on feedback. There was an awards presentation at the end and the student and teacher feedback was positive.

Case Study 2 (Liu, T. and Noel, L. 2017)

In Canada, two researchers, Aflatoony and Wakkary, explored how children can apply the process of design thinking to their studies. After the study, they found that students were able to apply the key principles such as problem solving and critical thinking to real life situations. Students gained a strong confidence in their ability to think through a problem logically and come up with a suitable solution.

Advantages of Design Thinking

There are many advantages to teaching design thinking in schools as it allows young learners to gain confidence in identifying problems and generate appropriate and manageable solutions. It also allows children to work in their teamwork skills. It also teaches children how to receive and act on feedback in order to help change their mindset to view failures as valuable learning opportunities and develop a growth mindset. It also teaches stamina and resilience as well as providing the early foundations for lifelong practical and social skill development.



Disadvantages of Design Thinking

For teachers:

- Lack of resources
- Lack of training and experience
- Lack of time during lessons

For students:

- Confusion and frustration
- Longer time to complete tasks

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