# Case Study 4: Shima, Brompton City School

There are two sections in this case study:

A. The Case Study
B. Deconstructing this case study

## Section A. The Case Study (Climate Change - intercultural collaborative project, using digital technologies)

Executive summary - Project for pupils age 14-16 years to learn about climate change, with another school in Africa, using digital technologies to collaborate, collect data and create a presentation.

**Background**

The lead-school is in a large urban city, with high rates of poverty and geographical movement of families and children, with newly arrived citizens seeking asylum alongside other migration and movement patterns. The city has a long tradition of being multicultural with an ethic majority and the school has 68 languages spoken. This means that there are many EAL (English as an additional language) pupils and many are entitled to free school meals. The Year 10 (age 14-15 years old) geography teacher wants to undertake a project to explore the impact of climate change and use digital technologies, as a way of both gathering data for the project and working online with children in another country.

**Pedagogical Focus**

In the summer term, the teacher Shima wants to teach about climate change in a way that is more authentic and real for the children. Shima has the idea to link the pupils to another class in another country and then for both classes to collaborate on exploring their own environments, and then to share these with one another. The aim is to examine the 'threats and opportunities' that each environment has, specifically identifying the challenges that climate change will bring in the next five years. This is with a view to thinking about solutions at the local level, as each school and local community responds to the challenges and creates an action plan.

The teacher has a contact in Botswana who puts her in touch with a school in Africa that wants to collaborate. So children in the geography class in England can work with the children in the school in Botswana. Each class has to choose a real-world issue to investigate that is related to the environment. Each starts by undertaking a SWOT

analysis of their local areas (this includes recording the treasures/strengths and problems/weaknesses and opportunities to preserve the environment and protect against damage, and the threats for climate change going forward.

- The children in Botswana want to examine - the environmental impact of tourists on the Okavango delta, in particular the impact of pollution from tourism on the water in the delta.
- The children in England want to examine - the environmental impact of plastic water pollution on the local canal and river in the city.

Both see their regional waterways as sources of local treasures to be preserved, for both human recreation and economic value (via tourism/water sports), but see the pollution as a threat to the quality of the water, its ecosystem and local flora, funa and wildlife.

Focus - Year 10 geography project - to find out the environmental impact and write and present a report to the other pupils and other schools. This is a six week project, to gather data (SWOT data) and organise into a report and presentation to one another.

Technology - for collaborating and sharing experiences between the children  - online platform, such as teams/moodle, which allows for: interactive 'meetings' between the classes (in small groups eg x6 from each country are assigned to a group); there is the function of 'chat', for text-based communication between the children, there is the storage area for 'files' for the children to share their data gathering and report writing. Each small group in each country has to produce a short report and presentation.

Each class in Botswana and England has to use the technology to communicate, share their data/findings and write their reports (e.g. share drafts of writing), each report is to include a summative infographic. The final report is to be presented as a slideshow to one another at the end of the six week project.

Technology for assessment

The pupils from each class create one presentation to share with each other (eg using powerpoint slides on teams). These are presented across the countries.

Teachers use the recording of the presentation to undertake the assessment of their work; this can include assessing the pupils' verbal/visual presentation, (their slideshow) and their final written report.

**Research Question**

How can technology be used to gather data and share findings on a real world environmental problem to facilitate greater intercultural understanding of climate change/threats across two countries.

**Cycles of Action and Data Collection**

This is a six week project, in which the pupils work across each country and meet each week to share what they have found out about their local environmental issue. This data can be gathered via secondary sources (of environmental reports/news items) and primary data gathered through local experts/community members - by asking what the 'threats and challenges' are to the local environment. Weekly progress is shared, on the data gathered and how this is to be presented in the final report/presentation - drafts of writing and visual graphics are shown for feedback and suggestions for improvement (peer-to-peer feedback) and also shared with the teachers to give formative feedback to the groups.

Technology enabled data collection for the project - for the UK/Botswana pupils, they can each week, be regularly:

- gathering first person narrative accounts of living in the local natural environment of the Okavango delta and their experiences of tourist plastic pollution and understanding the impacts at a local level
- same for pupils in England, who discovered not only the effects of plastic pollution on local wildlife (e.g. swans made nests from plastic waste) but also the damage from regional flooding in the winter, as people who lived near the river had their homes flooded.

The teacher is collecting evidence each week of how the pupils are using the teams/or moodle software (online platform) and exploring which functions are being exploited/used the most productively by each group. For example, do some groups prefer to talk using the 'meetings' function, with their cameras and mics on, or do some prefer to use the 'chat' facility more; do they work with links to the 'files' storage, to record their data.

At the end of the project, once the pupils have given their presentation and submitted their slides and final report, the teacher can undertake a summative assessment (the teacher evaluating the pupils learning outcomes with respect to curriculum content - notably understanding environmental threats and climate change).

The teacher also wants to undertake research on examining the pupils' learning experiences and engagement with the technology - did this pedagogical approach of using teams/or moodle for collaboration help the children to be more engaged and motivated, than book-based work on the same subject. Shima wrote a short

questionnaire asking the children about each function of the technology and how each aided learning. Shima wrote a set of questions using an online survey (eg survey monkey, the free version, which allows for up to ten questions to be asked. Or, alternatively she then decided to use google forms, because it had more functionality).

This form of exploratory research or evaluation can be called Action Research and the teacher undertook one cycle, whereby she evaluated it after the six week project finished.

**Data Analysis**

At the end of the six week project, Shima wrote an online pupil questionnaire, which collated the data and presented this in a graphical format. Shima could identify which aspects of the technology were engaging for the pupils and were effective in helping them to collaborate and finish the presentation and report.

Shima reflected on the first cycle of Action Research and evaluated the strengths and weaknesses of this approach to teaching the topic via using an online platform. What were the benefits to using the technology and what were the affordances of the technology?

**Making Claims**

The aim was to see if the technology enhanced pupil engagement in the topic and motivated them to complete the tasks in their online groups. Also, did it aid their learning of the curriculum content on the environment and enhance intercultural understanding of climate change in other countries.

From the data it can be seen that the pupils used the range of functionality on the online platform - to share their experiences, discuss their findings and prepare their slides to show their data and their final written report. The teacher used the recording of their presentations, and each pupil had to produce a written report, to make a judgment about their understanding of the issue of environmental challenges and formally assess the learning outcomes.

However, the technology also highlighted through its use, a range of other softer skills that were developed:

- inter-cultural exchange and engagement with children from Botswana
- enhancing understanding of environmental impacts in other countries - Okavango delta
- facilitated communication and teamwork skills

The teacher was able to compare this cohort to the previous year, where pupils had done a book-based case study of environmental impact.

**Conclusion**

The teacher's focus is on the pedagogical use of the technology to facilitate the learning and engagement on an environmental issue.

The technology enabled intercultural dialogue and exchange that enabled more authentic learning of a real-world problem as pupils heard first hand of the impact of pollution on the Okavango delta (global level) and their own waterways (their canals and rivers in their city - local level).


# Section B. Deconstructing this case study

**Background**

The initial aim was for the teacher to engage her geography class in a real-world problem by connecting with children in another country experiencing the effects of EI first hand. This was to bring this climate change issue to life, rather than reading about it in a textbook.

This case study presents a cross country (intercultural) experiment in using technology to communicate between children to gather data from their respective local communities, to enable the 'voices' of those at a local level to be heard and for the children to understand the impact.

This form of exploratory research or evaluation can be called Action Research and the teacher undertook one cycle. Next steps would be to run the cycle again and to evaluate how this pedagogical approach could be improved.

**Pedagogical Focus**

During the first cycle, the teacher wanted to make the lessons more engaging for pupils through using technology to communicate with other children, in another country - to bring the issues to life.

Reflecting on this process, she could gather information on what worked well from her observations during the lessons each week, alongside looking at what aspects/functions of the technology on the online platform had been used.

The teacher also undertook a summative survey, getting the pupils to reflect on their use of the technology at the end of the project. She explored what aspects of the online platform had been engaging for the pupils.

**Research Question**

How can technology be used to gather data and share findings on a real world environmental problem to facilitate great intercultural understanding of climate change/threats across two countries.

**Cycles of Action and Data Collection**

The teacher reflected on the first trial of using the technology to teach this topic. She was able to assess their final reports and presentations to see if they understood the topic and had gained intercultural insights into the local nuances of the environmental threats.

She also collected and analysed data from the pupil questionnaire about which aspects of the technology the children found engaging and helped their learning.

Cycle 1

The pedagogical focus was in making the lessons more engaging for pupils through the use of an online platform, and for them to communicate and collaborate with children from another country. Thus, creating an inter-cultural case study of Environmental learning led by the children.

Shima was able to use an online platform (MS teams - app and tools) on a class set of laptops, to gather and share data between the children in each country.

Cycle 2

This cycle is a repeat that builds on the strengths of what worked well in cycle 1 and what needed to be changed following the evaluation of cycle 1.

**Data Analysis**

The teacher chose to collect two types of data. The first set was observations of each lesson and watching the children use the teams platform and see how they engaged with the different functions in their groups.

The second set of data was from the summative survey of pupils where she asked a set of questions that got each pupil to evaluate their use of the online platform.

The teacher could check one set of data (her observation notes, from the series of lessons with the technology) against the data set of the pupils' use of the technology, from the pupil survey.

Using both types of data enabled the teacher to evaluate the intervention, that is the use of technology to teach this topic. Did the technology aid pupil engagement with

the content and enhance pupil motivation for learning; did the technology facilitate collaboration with the pupils in Botswana; did the technology help with the creation of the presentation and learning of the content?

**Making Claims**

Whatever the teacher discovered in this one cycle of Action Research could be applied to other intercultural projects that also wanted to exploit online collaboration across countries/schools and classes, to enhance the learning of a topic.

**Conclusion**

This Action Research intervention examined using online tools to enable learners to exchange ideas and data, with the aim to increase engagement and motivation for each learner.