Education for Sustainable Development:
An Assessment of West Midlands Schools

An Interactive Qualifying Project by:
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WPI

University of Worcester

# Project Description and Purpose

In light of a decline in school funding and Eco-Schools participation, our team worked to develop an assessment tool to determine where schools succeed in ESD and where they can improve.

This tool needed to accurately

Understand educator attitudes concerning sustainability and its place in the classroom

Observe sustainability practice in action at schools

Characterize student understanding and participation in ESD

Worcestershire Secondary School Budgets per Year
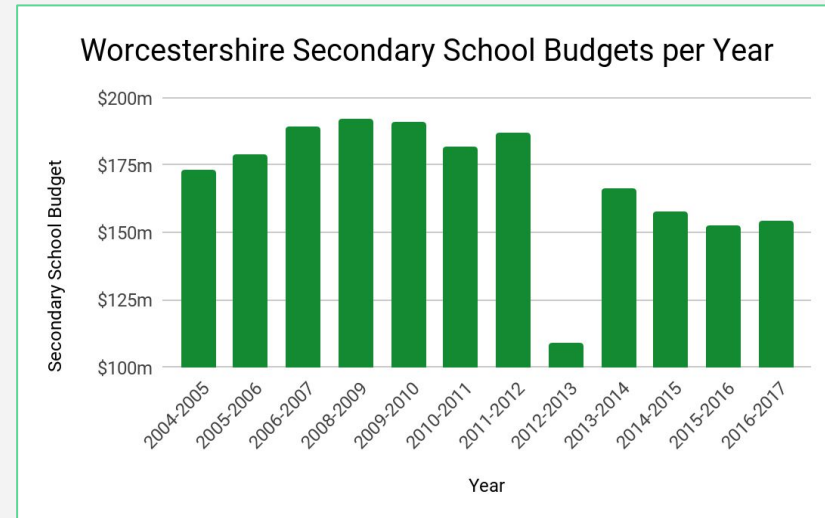
Introduction

Background	Methodology	Results and Conclusions

Background
- United Nations and the Sustainable Development Goals
- Education for Sustainable Development and the UK
- Developing Assessments
  - Case studies

Methodology
- Focus Group
- Sustainability Observational Analysis
- Faculty Interviews
- Student Surveys

Results and Conclusions
- Findings
- Sustainability Reports
- Recommendations

Background

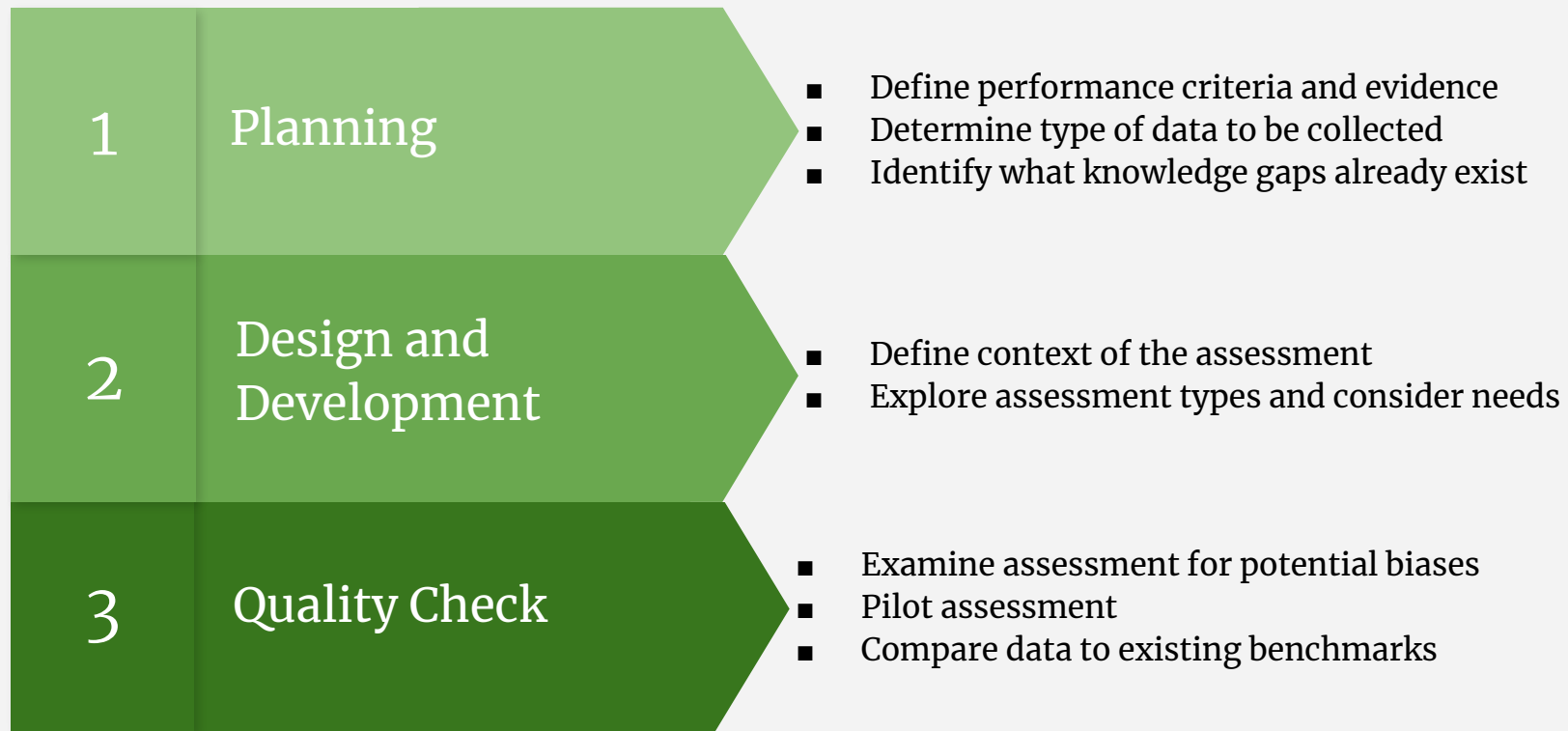# 2015: The United Nations Sustainability Goals

UN 2015 Sustainable Development Goals

Education for Sustainable Development (ESD)

- ESD implementation includes:
  - Improving schools' learning environment
  - Adopting whole-school approach

- Eco-Schools: International Educational Program
  - Supports ESD practice
  - Largest educational program in the world
  - Highest recognition is the Green Flag Award
- UN commends UK for ESD implementation
  - 70% of UK schools registered with Eco-Schools

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Designing Assessments

1	Planning	■ Define performance criteria and evidence ■ Determine type of data to be collected ■ Identify what knowledge gaps already exist
2	Design and Development	■ Define context of the assessment ■ Explore assessment types and consider needs
3	Quality Check	■ Examine assessment for potential biases ■ Pilot assessment ■ Compare data to existing benchmarks

Case Studies: University of Bristol and Latvian Schools

University of Bristol
- Examined curriculum for frequency of ESD
  - Employed text-count based methodology and student interviews

Latvian Schools
- Explored two schools exhibiting best practice
  - Interviewed administrators about how ESD was incorporated in curriculum

Want to generate results that offer insights into:
- Frequency of ESD
- Subject matter in the curriculum
- Experiences of teachers and students with ESD
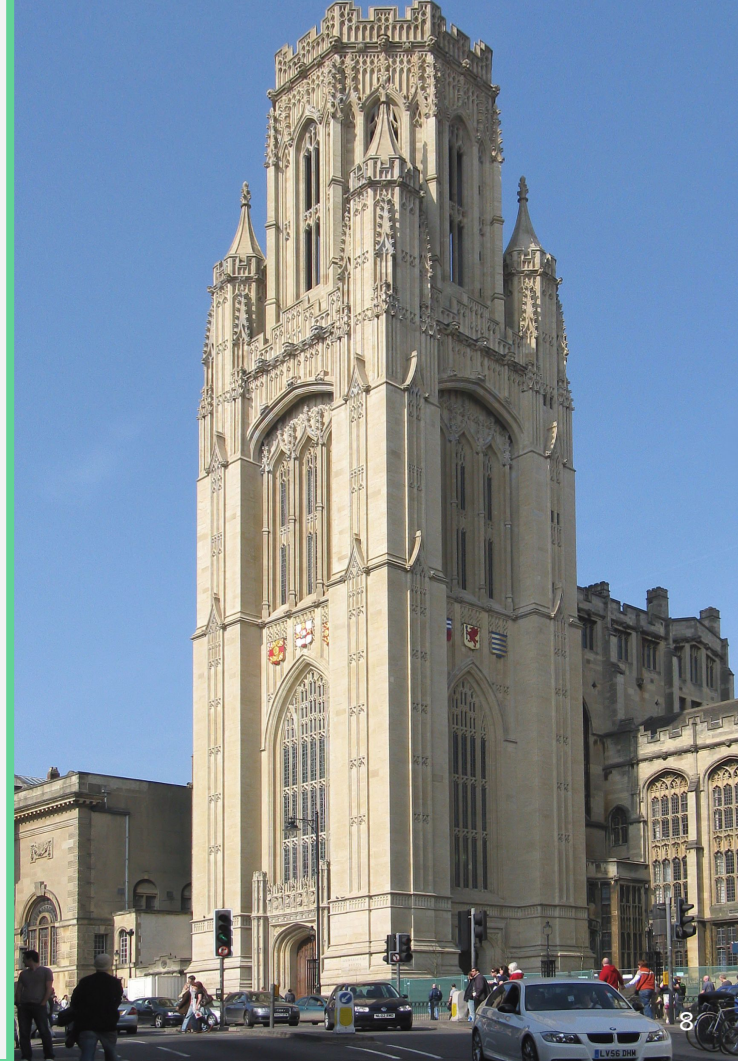
Methods

Focus Group

- 9 educators from Worcestershire and Hereford counties
- Focused around educator opinions on ESD
  - How do they incorporate the ideals of sustainability in their classrooms
  - What types of behaviors do they consider sustainable
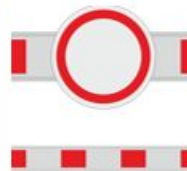- Unstructured: cover broad topics instead of specific questions

Personal opinions regarding ESD

Observable characteristics of sustainability in schools

Measuring understanding of sustainability

Barriers to ESD

School testimonies

Observational Analysis

- Given a tour by geography educator
  - Observed the sustainability features on checklist
- Observation criteria:
  - Is each item in the checklist seen?
  - How well are they maintained and implemented?
- Score based on those factors

Faculty Interviews

- Department Heads
  - (9 Questions)
- Semi-structured format
  - Interviewer
  - Scribe
- Potential patterns, curriculum topics, shared feelings or commonly flawed practices

Student Surveys

- Surveys given to department heads to administer to a representative sample of students
- Approximately 25 surveys per school, asked for even representation of gender and year
- Survey responses reflect student perception of and participation in sustainable actions

Thank you for participating in this study. We are a team from Worcester, Massachusetts, conducting research regarding education about sustainability and sustainability practices in West Midlands schools. No names or personal identifiers will be collected in this survey, and you will not be able to be identified in our final report.

1. How often is sustainability mentioned during an average school day?

Never   Once per month   Once per week   More than once per week   Every Day   Unsure

2. How frequently do you take part in the following activities:

	Never	1	2	3	4	5	Every Day
a. Turn off lights when not in use	_	_	_	_	_	_
b. Riding a bike instead of in a car	_	_	_	_	_	_
c. Separate rubbish and recycling	_	_	_	_	_	_
d. Ride public transportation	_	_	_	_	_	_
e. Use electric hand dryers	_	_	_	_	_	_
f. Spend time outside	_	_	_	_	_	_
g. Leave the water on while brushing teeth	_	_	_	_	_	_
h. Pick up litter	_	_	_	_	_	_

3. I am aware of ways to participate in sustainability at my school

Disagree 1 2 3 4 5 Agree

4. Have you ever helped your school to apply for a Green Flag Award?   Yes   No

5. If so:
   a. Was the application completed?   Yes No n/a
   b. Do you feel you had enough guidance to accomplish your goal? Yes No n/a

6. I am interested in participating in sustainability efforts outside of school (composting, trash collection, reducing energy usage, etc.).

Disagree 1 2 3 4 5 Agree

7. I think my classmates engage in sustainability efforts.

Disagree 1 2 3 4 5 Agree

8. I enjoy learning about environmental issues.

Disagree 1 2 3 4 5 Agree

9. My teachers do a good job explaining environmental topics.

Disagree 1 2 3 4 5 Agree

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Analysis

- Individual school analyses
- Each school will receive a review of their ESD practices
  - Will be scored similarly to Ofsted reports (1 to 5, instead of 1 to 3)
  - Schools will be averaged. The average school receives a 3.
- Suggestions for improved sustainability will be included

Scores are given on a scale of *5-Excellent, 4-Good, 3-Satisfactory, 2-Needs Improvement, 1-Poor*

Section	Score
Sustainability implementation	[1-5]
Curriculum integration	[1-5]
Student understanding of sustainability goals	[1-5]
Overall	[1-5]

Results

March 12th Focus Group

- Most geography educators are displeased with sustainability education, practices, and understanding in their schools

  - Sustainability education is provided mainly by the geography department, outside of set curriculum
  - Geography not compulsory in higher levels
  - Higher level curriculum geared mostly toward GCSE preparation

Observational Analysis

- Most schools lack a fully realized recycling program
  - Did not have proper separation
- Older buildings make it difficult to implement new sustainable systems
- Every school visited had an outdoor area for students
- Few demonstrated an explicit effort to promote sustainability within the schools

School	Preliminary Score	Scaled Score
School A	14	2
School B	13	2
School C	21	3
School D	23	3
School E	32	5

Faculty interview

- Same obstacles mentioned by almost all educators:
  - Not enough time allotted to geography educators to cover sustainability
  - Budgetary restrictions
  - Lack of support from senior management
  - Students feel disconnected to sustainability issues

- Educators have taken steps to improve ESD practice:
  - Use of natural surrounding for teaching sustainability
  - Raise students' interest in sustainability
  - Create exciting sustainable classrooms
 - Have dedicated people to be role model in ESD

School	Positive (P)	Negative (N)	Preliminary Score (P/N)	Scaled Score
School A	8.00	10.50	0.79	2
School B	6.00	8.50	0.70	2
School C	28.00	23.00	1.22	3
School D	11.00	12.00	0.92	2
School E	22.00	7.00	3.14	5

Student surveys

- Four schools returned completed surveys
- No demographic trends noted

School	Preliminary Score	Scaled Score
School A	33.08	3
School B	n/a	n/a
School C	29.64	3
School D	22.53	2
School E	33.5	3

Question 2: Individual Student Sustainability Participation
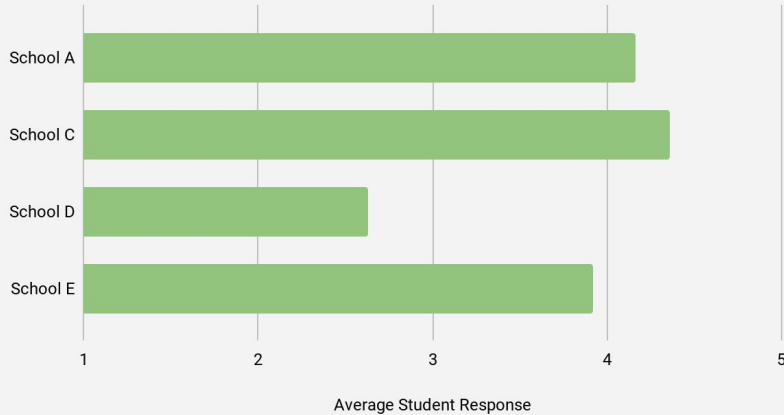

Average Student Response
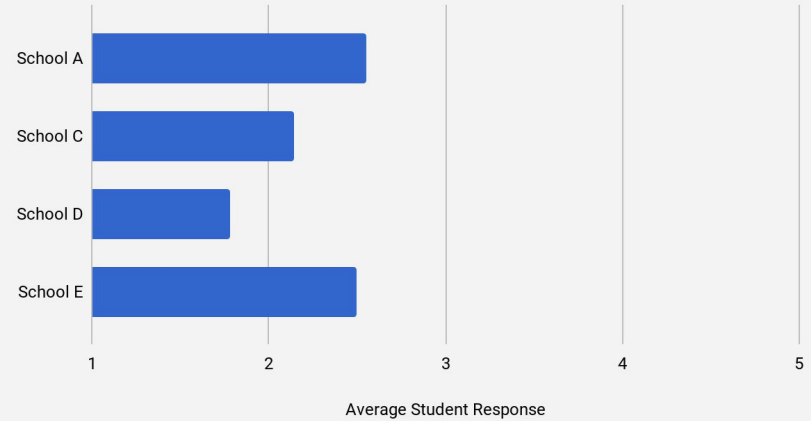
Question 2 asked students to gauge how often they participated in daily activities that relate to living a more "eco-friendly" lifestyle.

Student surveys

- Sustainability lessons are occurring in schools, but not very frequently (avg 0.64=~once per month/Unsure)
- Many students do not make a conscious effort to reduce their consumption

Question 8: Student Enjoyment of Environmental and Sustainability Education

Average Student Response

Question 9: Quality of Teaching Sustainability

Average Student Response
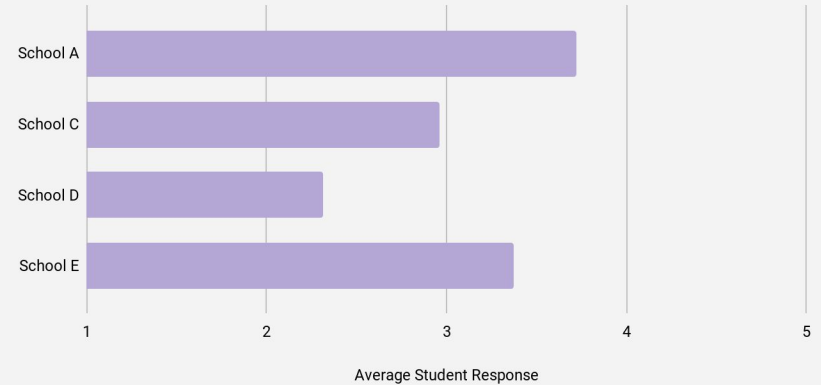
Question 8 asks students to gauge their enjoyment of environmental and sustainability education.

Question 9 asks students to assess the quality of sustainability education they are receiving in the classroom.

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Overall Results

- Schools were scored with respect to the other schools visited
  - Difficult to draw analytical conclusions with a small sample
- Every school analyzed had members aware of sustainability and its importance
- Many schools had difficulty teaching sustainability as more than a subject in geography
- A few dedicated people can influence an entire school

School	Interview Score	Observational Score	Survey Score	Final Score
School A	1.742	2.039	3.343	2
School B	1.555	1.893		2
School C	2.700	3.058	2.995	3
School D	2.033	3.350	2.276	3
School E	6.970	4.660	3.385	5

Conclusion

Summary

- Developed an assessment tool to identify trends and offer insights into the current state of ESD

- Used the tool to assess ESD practice in five secondary schools in the region

- Generated a sustainability report for each participating school

- Effectiveness of the tool
  - Although sample size of the study was small, this tool is designed to work on a larger scale
  - Gives accurate assessment of ESD at each school: good practice, setbacks, current efforts

Recommendations

For Schools

Communication across departments

Improve integration of sustainability across the curriculum

Visible Sustainability Features

Lead to Increased awareness and increased enthusiasm

Project Based Learning

Promotes critical thinking about sustainability

Eco-Committee

Educator run/student run Improve sustainable practice

For the Tool

Increase the Sample Size

Analyze more schools to reach a more accurate measure of an average school.

Broaden the Range of Interviewees

Interview senior management and educators from departments beyond geography.

Update the Observational Analysis

Modify the checklist to better represent common features seen at many schools.

Create Electronic Surveys

Electronic surveys are both easier to administer and analyze, as well as less wasteful than paper.

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Questions?

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