# Teach Too

## Green Car Project


## Reading College

Commissioned and funded by

The Education & Training Foundation

LEAD CONTACT

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Programme delivered by

UCL Institute of Education

EMPLOYERS

**BP/ Castrol**
**Wirth Research**
**Magal Engineering**
**Composites Engineering Solutions**

aep association of employment and learning providers

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## Introduction to Teach Too

***Teach Too*** is an ETF-funded project delivered in partnership by UCL Institute of Education and the Association of Employment and Learning Providers (AELP). Deriving from a key recommendation of the Commission on Adult Vocational Teaching and Learning (CAVTL) Report in 2013, it sets out to explore and evaluate different models of collaborative activity between employers and providers at practitioner level, in the co-design, delivery and assessment of vocational education and training programmes. Project findings show that these collaborative partnerships have produced significant short and medium-term benefits for employers, providers and learners, and enrich and strengthen local economies and communities.

**Jay Derrick** Director of Teacher Education (post-compulsory), UCL, Institute of Education

## Project aims

- To provide staff development opportunities for Engineering professionals to engage in teaching and mentoring
- To develop Engineering students' maths skills in the vocational context needed for future employment
- To enhance the "direct line of sight" to possible careers and employment opportunities for Engineering students
- To develop a partnership with an employer to develop and deliver industry relevant maths skills.

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## Project description

The project aimed to design, build and race a Green (battery) Powered car. The car was to be designed and manufactured for competition purposes and had to comply with strict regulations whilst also trying to maximise potential. Four student teams were involved in the project, which would ultimately see them compete with each other in the Greenpower IET Formula 24+ championship. Collaborative work with an employer was included to provide each team with experienced consultancy support, particularly in terms of the maths involved in key design principles.


Whilst maths crucially underpins the study of Engineering, many students struggle with the fundamental rules if they are not studied in an applied way. The maths curriculum was analysed and then linked to the design and manufacture of the Green Powered car. Real world problems in the design and manufacture were developed in a range of maths skills areas such as: time, acceleration, velocity, resistance, drag, weight, ratios, estimations etc.

The employer provided a consultancy service for the project, supporting students (and staff) with the design and manufacture of the car. This consultancy service involved a range of activities and 5 engineers from graduate to senior level were engaged in the project. These employees came into College to help with the production of appropriate resource materials and deliver the required maths skills. Although the project did set out to have a maths focus it quickly evolved into much more, with the engineers providing a wealth of knowledge and understanding that supported the overall project.

The project also made use of emerging technologies to enhance the communication between students and engineers. By using Google communities the engineers provided coaching and mentoring to the teams of students remotely.

Students were also able to visit the employer to meet the team of engineers and see the work they are doing there, first hand. On this visit, maths skills and principles were seen in action by both the students and tutors. Students found the trip inspirational and it provided an opportunity for them to consider the range of career paths in Engineering at a global company such as BP.

## Positive impacts

- Students were motivated by the real world context and developed confidence in use of maths though the use of the real industry situation
- Curriculum staff received up-skilling of industrial knowledge and current practice
- Collaboration was fostered through restructuring of curriculum delivery and assessments to take a project based approach, that allows multi-disciplinary working
- Development of new ways of working through the use of Google communities, allowing students access to engineers' consultancy support throughout the project, without significantly impacting on the employees "day job"
- Development of a departmental formal agreement for connecting and collaborating with employers
- Interest from other employers to work with the department through dissemination/publicity about this project.

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## Key learning points

- Ensure that the project will provide benefits for both the College and the employer and that these are mutually understood
- Consider how best to make use of new technologies, so that collaborative working can be achieved without impacting significantly on the core business of the employer

## Recommendations for developing employer partnerships

- Be clear about what each partner need to contribute – there needs to be specific objectives for all parties
- Understand and balance the priorities of all organisations in differing sectors i.e. industry and education
- There needs to be a clear benefit to the employer for engaging in the partnership. In this project it provided opportunities for employees to develop mentoring skills.

## Links and contact details

https://www.youtube.com/watch?v=cQkfV_CcxSA

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