Teach Too

Entrepreneurial Robotics and Physical Computing

Carshalton College

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LEAD CONTACT

Janet Smith, Head of College

EMPLOYER

Ben Pirt - Mirobot

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 design a curriculum model for ICT and Digital Media that meets the needs of employers and is relevant to the progress of learners into work in digital industries

› To up skill curriculum staff in current industry specific and relevant computational and programming skills

› To integrate production, marketing and entrepreneurial activity into creative and technical courses.

Project description

The study of robotics provides a good tool for teaching students how different disciplines work together in production. This project set out to create a relationship with an industry partner to establish a curriculum which was focused on physical computing, coding and programming and had a clear line of sight to work in the digital industries.

Curriculum staff developed a 'live' brief, based on real work practice, with Ben Pirt from Mirobot, a robotics company which produces small robots for use with young children. This brief also provided a mechanism by which students from ICT and Digital Media pathways could work together on an integrated project, reflecting how different professionals work together in industry.

The aim of the project was to develop 'Macrobot', a 'Rover' robot aimed at older children that can sense its environment and move both autonomously and under external control. Ben Pirt and his company led the design brief and helped to set the specifications for the project. Many of the components were 3d printable to develop skills in working with this emerging technology.

In order to undertake this design project the IT, Games Design and Media staff required training on contemporary programming techniques, coding and the use of Raspberry Pi. Six members of teaching staff were trained for two days by a specialist in order to introduce the skills needed for the project.

Ben came into the college on a regular basis to monitor progress and to ensure work reflected industry practice. Students were required to ensure each stage of research and development was completed before they progressed to production. Staff found students were highly motivated to follow instructions from an industry specialist and worked well in teams to develop their robots. The final products were judged in a 'Dragon's Den' event, where each team had to 'sell' their robot to be taken forward for production by the company.
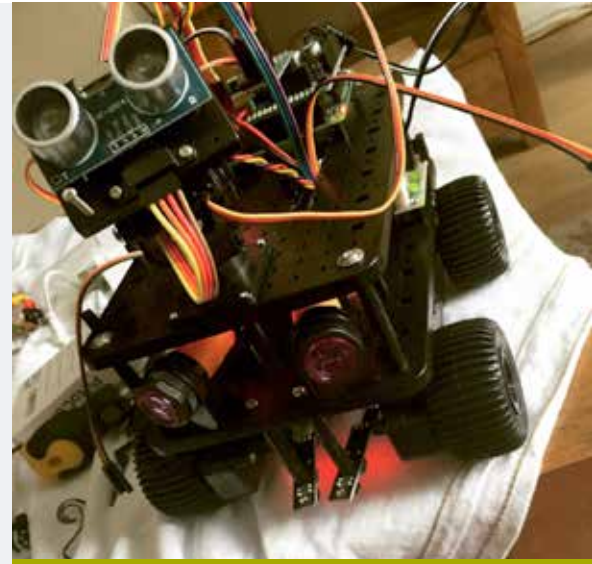
Positive impacts

> Students worked in small project teams and had to collaborate with partners from other curriculum areas. This created positive peer pressure to attend and achieve as well as developing team working skills. There was 100 % progression into year 2 of their programme and improvement in high grades in year.

> Staff up-skilling of industrial knowledge and skills gave them increased confidence in using new technologies. There was also enhanced motivation and enthusiasm to look at different ways of delivery in all aspects of their subject.

> There has been further development of cross curricula delivery models that can be used in other industry linked curriculum areas to better prepare students for the workplace.

> It helped the employer to develop his knowledge of other products and other markets i.e. older children/young adults which will feed into future product development.

Key learning points

> There needs to be thorough checking of employers' ability to commit to such projects - when, where, how long, how often etc. and planning needs to be around their commitments. It was difficult to get employers to engage with a project over an extended period of time. The college was fortunate to engage with Mirobot at a time when they were looking to develop further but this was after a number of less successful attempts with other companies.

> The start date of the project was too late in the year to fully develop the potential for curriculum change. The curriculum team have used the model in delivery plans for 2015-16 and have been able to embed the project-based aspect of learning earlier into timetables.

> The curriculum team will look at how this project could be delivered in industry settings rather than in college as a future development.
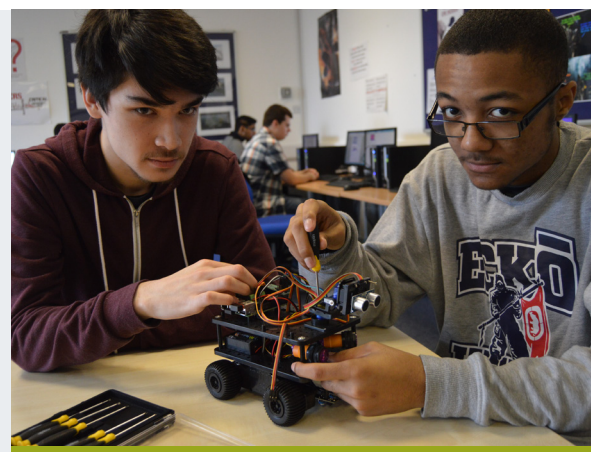
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Recommendations for developing employer partnerships

› Be clear about what each partner need to contribute – there needs to be specific objectives for all parties

› Appreciate that, for employers, their business comes first and make it easy for them to contribute

› Acknowledge the difference those working in industry bring to learning over and above the subject i.e. commercial practices, time management, financial constraints, market forces and capture this

› Where possible, compensate employers for their time – particularly for SMEs. The college made a small contribution to Mirobot for Ben's time based on the staff savings made by combining IT and media groups for the project

› There needs to be a clear benefit to the employer for their input. In this case it helped the company develop their knowledge of a new market (young adults).

Links and contact details

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