



Eureka

External Evaluation (Visit to Galway November 2017)

<http://theeurekaproject.eu/>

The Eureka project will up skill teachers in early identification of the most able students and develop them to create a curriculum fit for purpose. There is a need to ensure high quality teaching, to provide adequate initial teacher education, continuous professional development for teachers and trainee teachers and other educational specialists. Schools and other education institutions should be ready to create an atmosphere of acceptance, recognition and inspiration for the most able children from any background in any country. This includes knowledge and skills in early identification of the most able child, supporting the child through an appropriate curriculum and involving parents/family in the process of his/her education.

In June 2017 the Project hosted a week long Training Programme in Zlin led by KPPP (Krajská pedagogicko-psychologická poradna). The purpose of the training was to facilitate the identification of More Talented students and thereby help partners to implement targeted actions in their own schools. At the end of the training colleagues were invited to produce action plans showing elements of the training would be implemented within their own school setting.

Transnational Visit to Ireland

The visit to Ireland was successfully completed in November 2017 with partners from all the partner countries.

Two School Visits were completed to:

Coláiste Bhaile Chláir

<http://www.colaiстеbhailechlair.com/>

Colaiste na Coiribe

<http://www.colaiстенacoiribe.ie/>

The brief report below is a brief snapshot of observations and feedback – they provide a flavour of the work being undertaken as a result of the Eureka project which undoubtedly has been a positive catalyst and focus for future actions.

Coláiste Bhaile Chláir



Coláiste Bhaile Chláir situated in the west of Ireland near the city of Galway is part of a wider network of schools. The school has embraced the use of technology and uses Microsoft OneNote as an alternative method for capturing and extending learning. Leaders, teachers, students and their parents have all embraced this use of technology. In particular the use of flipped learning is common throughout the classrooms of this innovative school. Teachers encourage students to research and assimilate information/knowledge. The classroom then becomes a place where Blooms' higher level learning can be developed.

Teaching, assessment and learning all embrace this use of knowledge and students use their notebooks extensively to monitor their own learning. They can also catch up and revisit difficult areas of learning at home and in their own time. There is a strong focus on interaction between teachers and learners, a praise culture, active classrooms and a focus on developing social capital throughout the school.

Flipped learning encourages learners to become teachers; it enhances gifted children's experience especially when they work, inclusively, alongside other learners. Learners become the teacher in this positive environment. Learners become the leaders of their own learning

The use of OneNote and other Microsoft products are used extensively and this enables the tailoring of content to meet the needs of all students. The use of OneNote and the developing Content Library encourages the use of both collaborative and independent learning spaces.

Gifted and Talented

Some students access the Centre for Talented Youth part of the University City Dublin (centre in Galway Saturday). See <https://www.dcu.ie/ctyi/ys-assessment.shtml>

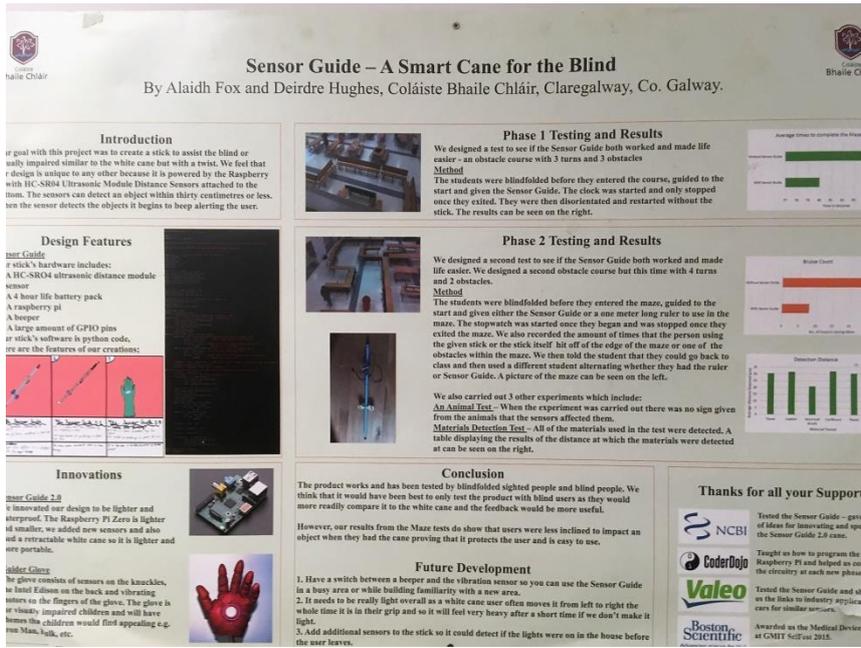
Students with a Stem score of 10+ are able to access 8/9 week modules. These cater for Science, English and music (such as the Symphonic Waves Orchestra Project). The School hosts a structured programme of activities that students can access including:

- Science week
- Maths week
- Debating
- Public speaking chess
- Enterprise projects. BT Young Scientists
- German speaking club
- New tech hub
- Coding
- Masterclasses
- Guest speakers
- Mandarin
- 'A' grade booklets in every subject
- GT Breakfast Club

Science and STEM are very strong in the school and enable the more able students to excel in the use of business, technology and science:



Deirdre Hughes and Alaidh Fox demonstrate the highly innovative medical products – the full brief is overleaf:



Sensor Guide – A Smart Cane for the Blind
By Ailaidh Fox and Deirdre Hughes, Coláiste Bhaile Chláir, Claregalway, Co. Galway.

Introduction
The goal with this project was to create a stick to assist the blind or visually impaired similar to the white cane but with a twist. We feel that our design is unique to any other because it is powered by the Raspberry Pi with HC-SR04 Ultrasonic Module Distance Sensors attached to the front. The sensors can detect an object within thirty centimetres or less. When the sensor detects the objects it begins to beep alerting the user.

Design Features
The Sensor Guide stick's hardware includes:
A HC-SR04 ultrasonic distance module sensor
A 4 hour life battery pack
A Raspberry Pi
A beeper
A large amount of GPIO pins
The stick's software is python code, here are the features of our creation:

Innovations
The Sensor Guide 2.0 is innovated our design to be lighter and waterproof. The Raspberry Pi Zero is lighter and smaller, we added new sensors and also had a retractable white cane so it is lighter and more portable.

Holder Glasses
The glove consists of sensors on the knuckles, the Intel Edison on the back and vibrating motors on the fingers of the glove. The glove is especially helpful for children and will have helped the children who find appealing e.g. Fin Man, Hulk, etc.

Phase 1 Testing and Results
We designed a test to see if the Sensor Guide both worked and made life easier - an obstacle course with 3 turns and 3 obstacles.
Method
The students were blindfolded before they entered the course, guided to the start and given the Sensor Guide. The clock was started and only stopped once they exited. They were then disorientated and restarted without the stick. The results can be seen on the right.

Phase 2 Testing and Results
We designed a second test to see if the Sensor Guide both worked and made life easier. We designed a second obstacle course but this time with 4 turns and 2 obstacles.
Method
The students were blindfolded before they entered the maze, guided to the start and given either the Sensor Guide or a one meter long ruler to use in the maze. The stopwatch was started once they began and was stopped once they exited the maze. We also recorded the amount of times that the person using the given stick or the stick itself hit off of the edge of the maze or one of the obstacles within the maze. We then told the student that they could go back to class and then used a different student alternating whether they had the ruler or Sensor Guide. A picture of the maze can be seen on the left.

Conclusion
The product works and has been tested by blindfolded sighted people and blind people. We think that it would have been best to only test the product with blind users as they would more readily compare it to the white cane and the feedback would be more useful.
However, our results from the Maze tests do show that users were less inclined to impact an object when they had the cane proving that it protects the user and is easy to use.

Future Development
1. Have a switch between a beeper and the vibration sensor so you can use the Sensor Guide in a busy area or while building familiarity with a new area.
2. It needs to be really light overall as a white cane user often moves it from left to right the whole time it is in their grip and so it will feel very heavy after a short time if we don't make it light.
3. Add additional sensors to the stick so it could detect if the lights were on in the house before the user leaves.

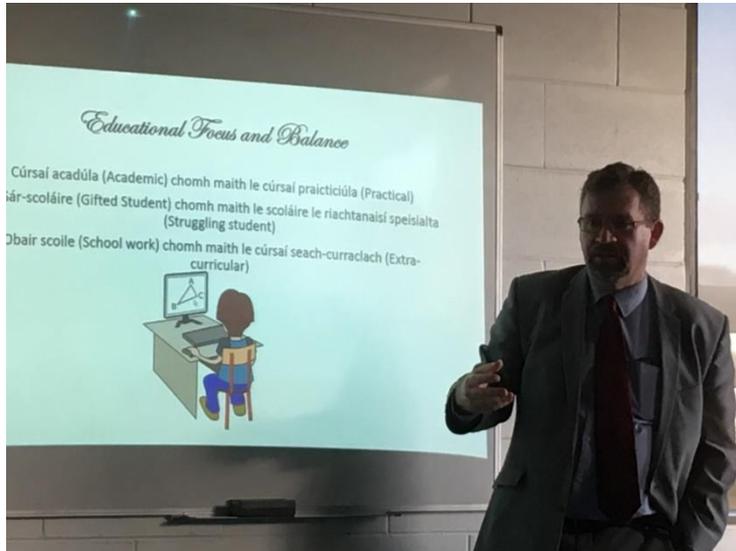
Thanks for all your Support
Tested the Sensor Guide - gave us ideas for innovating and upon the Sensor Guide 2.0 cane.
Taught us how to program the Raspberry Pi and helped us connect the circuitry at each new phase.
Tested the Sensor Guide and showed us the links to industry applications for similar sensors.
Awarded on the Medical Device at MIT SciFest 2015.

Areas for development for Coláiste Bhaile Chláir include the development of an Extension tab in class notebook filed with rich independent learning tasks and additional reading for More Able students. The school is also working on exceptionally able students draft national guidelines for the classroom.

NB (The national guidelines referred to are draft guidelines produced by both education departments North and South of the Border. They are an Island of Ireland collaborative activity. They are excellent but have not been introduced. The School is committed to looking at introducing them as part of their own action plan.)

Colaiste na Coiribe

Colaiste na Coriribe is an Irish speaking school where English is taught as an additional language. The school does not stream and supports its more able students through a heavy focus on effective differentiation and extension strategies.



“Music is offered inclusively and also provides some students with a chance to excel”.

Eureka has provided the school with a new strategies and direction in the teaching of the more able.



Identification of the More Able is key:

- 1) Close links with Primaries and detailed 'passport report observations' and standardised testing - helps initial identification of a child's ability and potential on entry.
- 2) In addition Entrance assessments - written assessments/oral interviews (focus on Irish) also assist the school in identifying students' needs.
- 3) New for 2017 CAT4 cognitive abilities testing diagnostic assessments have been employed - results are used to identify high achievers and pace of learning.
- 4) The school then reassesses a student's potential via November Assessments (after a 10week block of learning)

Accurate data drives the process and Colaiste na Coriribe feels confident over the judgements made regarding the learning and potential of individual learners and cohorts. Successful identification is key for future curriculum based developments.

Curriculum Developments at Colaiste na Coriribe

For this Eureka project focus in first year there have been a number of subject developments. Teacher's feedback on work they have undertaken to raise achievement with able students is provided below:

a) Cathy (Science and Biology)

Issues around group differentiation between classes is an issue. The use of extension activities, the need for subtle prompting and differentiation by assessments and activities has helped to support the more able in classes. The use of self-assessments has been successful with identified students/cohorts.

b) Gorna (French and English)

Open ended tasks enable students to progress and extend their learning at their own rate.

Again extension activities that challenge and maintain curiosity have been used extensively. The use of Edmodo for home learning has been successfully employed.

The teacher is very passionate and sets high expectations. Students given freedom to explore own topics and modes of delivery in English

c) Katrina (Project Maths)

Maths have employed a hands on problem solving/project based approach – there is less rote learning and this is a motivator

A new complex final exam with a bonus incentive has complicated this process



(The new exam system with a + bonus (25) extra marks has pushed more students into the higher paper. Now larger cohorts for the higher). This external interference has clouded the process but nevertheless Project Maths is having a positive impact with Higher achievers ploughing through multiple exam papers.

Conclusion based on visits

- Senior Leadership at both schools have taken Eureka seriously and positively.
- Eureka is being disseminated across the learning culture of both schools – staff are aware of the project goals and are embracing the potential impact.
- Opportunities and support for More Able students is improving.
- Both schools recognise that they are at the start of a journey and additional progress needs to be made.
- Both schools are willing to learn from each other and share good practice (both in Ireland and with Eureka partners)

Final Note

Visits to both schools were inspirational (especially the Music and STEM) and the schools are to be commended for the excellent visit days enjoyed by Eureka colleagues.

Ian Crawford

External Evaluator

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