INSTEM Workshop Ireland Dublin, 13 Novermber 12, 2013

DCU

Engagement with key national stakeholders

In Ireland, innovations in science education at post-primary level are present, but tend to occur in pockets rather than a systematic approach to the teaching and learning of science. The purpose of holding a national event was to increase the visibility of projects that support innovations in science education (innovations such as inquiry-based science education) and to discuss with stakeholders about how they can become more involved in supporting educational innovation in classroom practice. Therefore a one day workshop was held in November 2013 with key Irish stakeholders in STEM education and in addition 1:1 communication was also carried with key stakeholders as part of this INSTEM project.

Key Findings

Projects need to adopt effective communication strategies for inter- and intra-stakeholder engagement to support innovation in STEM education.

In particular, projects should:

- Adopt multiple communication strategies, including social media, to engage all stakeholders
- Engage relevant professional bodies
- Facilitate teacher exchange
- Involve parents/parent networks

For effective communication with teachers:

- Resources need to be clear, succinct and easy to follow
- Workshops should be run to provide explanations on using resources
- Resources should be adapted so that they are suitable for local curricula

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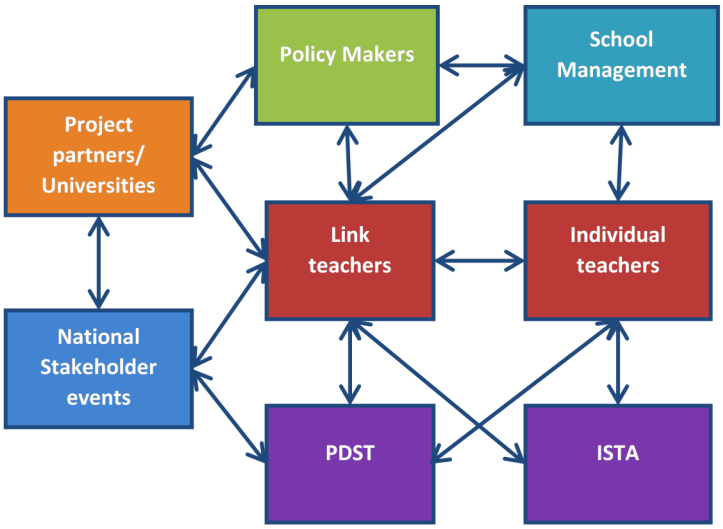
Summary of online discussions with key stakeholders

Topic: How can the outcomes from international projects be communicated in an effective way?

Key suggestions include:

- Project results should be shared through small cluster group workshops preferably in school laboratories
- Projects materials should be made available through resource banks that teachers currently use (e.g. in Ireland this could be the Professional Development Service for Teachers (PDST) subject website)



An effective model for dissemination was used in the roll-out of the National Strategy for Numeracy and Literacy. Each school nominated a link teacher who received Continuous Profession Development (CPD) and worked to support the Principal in coordinating a team of teachers to focus on improving literacy or numeracy in the school. The Link Teacher was responsible for developing good practice in the school and supporting on-going learning among the staff. Central to the role was the sharing of his/her learning with the other members of staff, and the facilitation of CPD at school level. This model reaches more individual teachers and allows the link teacher to feed back to the project partners or PDST on the type of CPD needed in order to implement project results. This allows CPD to be targeted to local needs.

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Topic: What information would teachers need to make projects attractive to them?

Many teachers will not read lengthy pieces of research; therefore, results should be distilled into useable, relevant and concise pieces of information. Teachers need to be able to quickly see if the material is useful for them. An explanation on how these resources can be used should be provided. Student / teacher testimonials could be useful. Some projects will need to add an additional layer in advance of dissemination in their own country to focus on that particular country's curriculum and context factors.

Linking project results to the particular national situation and particular professional development needs of teachers in the country could incentivise teachers to take part in a project, e.g. in Ireland, there will be changes in the lower secondary curriculum (including a focus on key skills) and assessment (schools-based rather than national based certificate at end of lower secondary school) as well as upper secondary syllabus.

Topic: Where do teachers look for information?

Teachers look for information from a variety of sources, e.g. flyers, school noticeboards, colleagues, social networks, websites for teachers such as www.pdst.ie. Multiple communication strategies, including social media, should be used by projects to engage with teachers.

Topic: How could the outcomes from projects have an effect on national policies?

The established model is to have representatives from the universities on national policy committees (National Council for Curriculum and Assessment, NCCA). This can be effective if the representative is well briefed on the outcomes of relevant projects and how these outcomes can influence curricular reform.

Qualitative and quantitative outcomes / accounts should be sent to relevant bodies such as the NCCA, Ministry of Education Teacher Education Section and the Inspectorate.

Positive project outcomes need to be highlighted to schools / subject associations via inspectorate reports whereby inspectors have witnessed best practice and published their report on the internet advocating this. This will be of interest to schools anticipating or undergoing inspections and will be tried out by them.

Topic: How can we build up permanent networks of stakeholders in relation to schools?

There will be opportunities for schools to be more autonomous through junior cycle reform. The debate on school-based assessment is one that is emerging rapidly. IBSE can play a major role in here. When schools and subject departments in schools recognise the huge advantages in being part of a larger support network, this process will be successful. Teacher professional development is key here and the school's increasing role in providing for this. Schools can emerge from isolation by being part of a network.

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Summary of Irish National Stakeholder workshop,

13th November 2013

Venue: Clock Tower, Department of Education and Skills, Marlborough Street, Dublin 1

Host and Organisers: AG Education Services (partners in the FP7 project ESTABLISH) and Dublin City University, (coordinator ESTABLISH and partners in INSTEM Comenius Project).

Each stakeholder group was represented at the event, and there were a total of ~40 participants from:

- Researchers in science education,
- Post-primary teachers,
- Post-primary students,
- students' parents,
- Ministries of education/inspectorate
- Teacher professional development associations
- Industry.

The event was structured as a combination of plenary addresses as well as interactive discussions to address the objectives set out for the event. An important part of this event was the student interview session during which the opinions of post-primary students (boys and girls) about science, their perception of the subject and engagement with it were discussed and shared with the whole group. During the latter part of the event, the participants were invited to engage in several roundtable discussions and share their thoughts, opinions and comments of how innovations in science education can be encouraged and nurtured to create supportive environments for scientific learning. Five groups were formed with each group focusing on one of the following questions:

- What is the role of **industry** in the inquiry classroom?
- How can we **communicate information** about teacher training & education projects and where do teachers look for information?
- How can we build up **sustainable networks** of stakeholders in relation to school?

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Topic: What is the role of industry in the inquiry classroom?

Various aspects of the role of industry were discussed and the following points were raised:

- It can be difficult to address the needs of industry due to practical issues relating to time, resources and materials.
- Industry can provide support via social media, videos, blogs and encourage school to do a projects using IBL
- The profile of teachers is very important. Most teachers have post-grad qualifications but only some have industry experience. It may be beneficial if it were compulsory for teachers to work in industry e.g. STARS project funded by SFI (Science Foundation Ireland), universities and industry partners.
- Is it possible to create a national strategy through industry and policy-makers formalising IBL?

  Get the parents to buy-in. Can parents be encourages to live science? Start with Maths for parents e.g. parents in industry.

Topic: How can we communicate information about teacher training and development projects?

This topic was considered from the perspective of the teacher. 'Passion' emerged as an overall theme. The 'big idea' is that teachers need the passion and motivation to access this information. Practical solutions were also discussed including:

- Teachers can exchange information at workshops and in-service courses and such as those delivered by the PDST
- Weekends CPD programmes can be run in universities
- Relevant professional organisations can be a good channel e.g. Royal Society of Engineers, Irish Science Teachers Association.
- Both online and face-to-face CPD options should be provided

General points about science education were also discussed:

- Competitions such as SciFest and Young Scientists Exhibition are important, but competitions don't suit all school or pupils.
- There is a drawback with mandatory school experiments. They are counter to enquiry because teacher cannot deviate from prescription.
- People who are taught badly come to secondary school with attitude that can destroy them for life.

Minister of State, Sean Sherlock, Department of Enterprise, Jobs and Innovation and Department of Education and Skills with responsibility for Research and Innovation

Mr Bob Savage
Vice-President and General Manager
EMC Ireland Centre of Excellence

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