S-TEAM News No.5

Science-Teacher Education Advanced Methods

A phase change in European Science Education

June 25th, 2008

Approaching the Summit[1]

We are now almost at the final stage of the application. Like all long journeys, the end is elusive and recedes in front of us, but it is there.

The summit metaphor of course is entirely wrong, since we are really only approaching the station where we will have to wait ages for the (steam) train to arrive, but I liked the photo anyway.

New draft

I realise you have been waiting longer than expected - here is the current version minus institutional CVs (attached separately.)

Again, please make comments in a separate Word doc:

ST-final-(inst acronym)-0708

Thanks for all the previous comments.

Final stage check list

Most of you have already done all the things below:

1. Person month costs to Per Inge
2. Institutional CV and personnel details to Hilde
3. Final WP comments to Peter (after reading the attached draft)
4. Am I comfortable with what Peter has said I am going to do in the WP/PoD? (if not tell him now).
5. Am I comfortable with my institutional Person-month allocation? (see draft)
6. Any final comments to Geir or other WP leader?

There have been some cases where Per Inge has received cost data or budget information which indicates that there exists a well-conceived workplan, which differs from the version in the WP summary. These summaries are a compromise between convincing the evaluators that we are answering the Call, and reflecting individual research and practice interests. If you have more detailed plans it would be useful to see them, even at this stage, especially where there is a difference between WP allocation and your own requirements.

[1] It's the Wildspitze in the Otztaler Alps, Tyrol

The current draft has been modified to take account of further suggestions and comments received up to today (Thursday). The main task at the moment is the final rationalisation of the budget which will be complete by Tuesday/Wednesday next week, including allocation of direct costs to partners.

Looking for connections

Just as a final round up in the section (B2.3) which describes what a wonderful consortium this is, it would be useful to hear about any connections your institution has to other initiatives in science education, e.g. Jari Lavonen has done some analysis of ROSE data which proved very relevant to WP6. Margareta Enghag has made some fantastic connections in Sweden to the NTA and the National Centre for Education in Physics.

Other useful connections would be to national teacher organisations (itself an interesting area of national divergence), national research conferences in science education or teacher education, and journals whether national or international (Thanks Carl, and also for Gauss).

Glossary

In the final version, space permitting we will have a glossary to explain what we mean by basic terms such as "teacher education". Below is what I have so far, but please make suggestions for additional terms or modified explanations>

Throughout this proposal we have attempted to standardise terminology, as follows:

Inquiry-based science teaching, inquiry based science learning, and inquiry based science education have been abbreviated to IBST/E.

We have introduced the term Multiple Innovative Methods in Science Education (MIMES) to cover cases where a wider range of activities is involved, compared to IBST/E alone. However, this may not be a useful term to use – any suggestions (Note: in the current version this has been dropped)

In respect of careers, we use the term STEM, Science, Technology, Engineering and Mathematics, rather thanMathematics, Science and Technology (MST) to include mathematics as a science and to avoid too narrow a definition of science careers. The term SME (Science Maths Engineering) can be confused with Small-Medium Enterprise. Duschl (2007) uses which seems less common but is more comprehensive.

The consortium is the legal entity constituted by the beneficiaries (= participants=partners). The project means the project as a whole, and partners (=beneficiaries) means partner institutions as represented in the project. The term network means the lines of dialogue between partners and the relevant stakeholders. Stakeholders means any group of actors with an interest in the project. At various stages, the stakeholders will include those with interests in school education (teachers, students/pupils, parents/carers, school governors/administrators, political actors), teacher education (teacher education institutions, teacher educators, teacher education researchers, pre-service teachers/ student teachers, schools, teachers, local authorities) and science education (as above + the scientific community, industry, science education researchers)

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Teacher training and teacher education will be referred to collectively as teacher education. Initial teacher training and initial teacher education will be referred to as ITE.

Teacher trainers, teacher tutors and teacher educators will be referred to as teacher educators. Pre-service teachers, beginning teachers, novice teachers, newly-qualified teachers and early career teachers (etc.) will be referred to as new teachers.

Continuing professional development CPD, in-service training (INSET), and other forms of continuing teacher education will be referred to as professional development.

The words 'student' and 'pupil' are used interchangeably. Teachers means qualified school teachers although by default it may include other staff, such as classroom assistants.

'School' refers to both ISCED level 1 and 2 institutions. Primary school refer to level 1, secondary school refers to level 2.

Policy-makers includes a range of education-related professionals ranging from government ministers to local government officers, with the common responsibility of directing and administering education systems.

Researchers includes university or independent researchers in education, science education, teacher education, educational psychology and related fields, and also covers teacher-researchers unless these are specifically identified. PhD students may be referred to as ‘doctoral students’ or research students.

We have chosen to refer to diversity, inclusion or inclusive practices, rather than to gender or other specific areas of social inclusion, to reflect current practice and to allow for the specific concerns of individual class, school or national contexts.

At the moment we have ten thematic Work Packages (WPs). Work packages need to have objectives and deliverables but in view of the complexity of this project we have started to use the term PoD (Production of Deliverable) to refer to smaller units of work, e.g. an activity based in a single school or group of schools, connected to one or more deliverables, e.g. if you are producing a video resource there may be a related explanatory document. If there is another deliverable (see below) which is connected but also involves other sources, e.g. a multi-partner version, then this is likely to be a separate PoD.

Deliverables are artefacts which exist either as material objects, events or virtual objects (e.g. web pages). Broadly, deliverables can be classified as follows:

- Reports Structured document giving a comprehensive account of an activity or work package
- Resources Document intended to assist with an activity, e.g. worksheet describing tasks, to be used by teachers in the course of a lesson
- Video resources-VHS, DVD or streaming material using moving images to convey information, e.g. teaching session as example of good practice
- Virtual resources-Anything accessible through Information & Communication Technology (ICT) including mobile devices etc.
- Meetings-Internal gathering of project partners and related persons
- Seminars-Event for dissemination and discussion open to interested parties outside the project, usually with a specific focus.
- Workshops-Interactive event involving e.g. small group activity with extensive opportunity for feedback and debate.
- Training module/package-A collection of materials systematically organised and designed to achieve a specified set of learning outcomes, with or without accreditation.

The philosophy of the training package: I-thou dissemination[2]

In a long phone call with Halvor Hoveid, recently, we discussed the difficulties of moving from a research paradigm to a dissemination project. In other words, people who have specialised research interests often have problems in conveying their enthusiasm and deep knowledge to others. This is really the essence of the project, since it is about encouraging the communication of enthusiasm and deep knowledge of science, in dialogue between teachers and pupils, or even better, in trialogue between teachers, pupils and practising scientists, teacher educators and educational researchers.

In that case, we have to show that we are really good at communicating our own enthusiasm about specific, research-based ideas to people who have different interests, ranging from EU evaluators to low-income single parents and from philosophy professors to beginning teachers. Perhaps the 'I' of the idea can only be materialised in the 'thou' of the others who hear the message.

Talking of messages:

http://www.youtube.com/watch?v=nN-3jNFkzaQ&feature=related

Only some of you will like the above clip, but its significance here is not only as a motivating factor. Jeff Beck explained the transformation of music in the 1960s: " ..it moved into another space...a space that hadn't been seen before". This is what has to happen with science education. Now. (well, OK next year)

regards

Peter

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[2] see http://azlyrahman-illuminations.blogspot.com/2008/06/reflections-on-martin-bubers-i-thou.htm