



Science Small Grants Scheme Evaluation

Final Report Appendices
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Appendix 1 Methodology

Applications

People Science & Policy Ltd (PSP) reviewed the application forms of all 69 successful applications. Data extracted included descriptions of the projects so that key features could be identified, objectives listed and target audiences collated for both the individual projects and the programme as a whole.

Evaluation reports

Thirteen evaluation reports were provided for analysis by PSP, although application data suggested that 62 of the 69 projects ought to have been complete, by the end of the 2006 summer term.

The lack of information on paper meant that more emphasis was put on gathering numerical data from teachers than had originally been envisaged.

Teacher interviews

The original plan had been to try to complete some 40 interviews with teachers in the summer term of 2006. These interviews were intended to augment the data that had been expected on paper. However, given the lack of paper-based data it became clear that the interviews would provide the core of the quantitative data as well as the qualitative depth that had originally been envisaged.

The Scottish Executive advised PSP that prior permission was required from local authorities before teachers could be contacted. The 25 relevant authorities were contacted in early June, and clearance sought to contact schools in their locality. Initial contact with the local authority was always made by telephone in order to identify the most appropriate recipient for the request for clearance. Thereafter there was no standard clearance process. At its simplest, clearance was obtained through initial telephone contact followed by an exchange of e-mails. Some authorities required formal exchanges in hard copy. Only three local authorities failed to provide clearance, none refused, but three never provided a positive response, despite a number of contacts from PSP.

Some authorities gave PSP clearance to contact lead teachers directly; others asked us to make initial contact with the head teacher, sometimes in writing. Some of the authorities also made their own contact with the schools to confirm the legitimate nature of the request that would follow from PSP.

Although the clearance process with Local Authorities has ultimately proved to be a successful exercise, it took time. This made it impractical to complete many of the telephone interviews before the end of the summer term (mid to late June in Scotland). Teachers were very helpful and willing to support the evaluation and a concerted effort following the start of the new academic year yielded 40 interviews covering 43 projects. In addition there are evaluation reports from five projects where interviews have not been completed.

The topic guide used in the interviews is provided in appendix 2.



Case studies

Four schools agreed to participate in the case studies and visits took place in late October 2006. Unfortunately, due to severe flooding in the Highlands one school was closed so that it could be used for evacuees, so only three visits were completed. The fourth case study was completed by telephone.

Drafts of the case studies were sent to the lead teachers for checking and clearance; the agreed versions are provided in Appendices 3-6. The generic topic guides used for the case study interviews and focus groups is provided in Appendix 7.



Appendix 2 Telephone interview topic guide

Note to interviewers

The purpose of these interviews is to add extra information to that already held on the individual projects. The aim is to minimise the load on teachers, so the interviewer should not be seeking to verify information already provided on paper, but rather be filling in “gaps” so that we have the fullest possible picture of each project.

As well as providing a summary of the programme’s achievements to date, the evaluation is intended to identify good practice that could be disseminated.

This topic guide is drafted to cover situations where there is no final report from the teacher/cluster. This means that for projects where there is a final report some of the questions will not be relevant for teachers who managed these projects. This will mean that prior to each interview it will be important for the interviewer to familiarise themselves with the data held on each school, this is summarised in the analysis spreadsheet for successful applicants.

Additional briefing notes for interviewers are shown in BLOCK CAPITALS throughout the topic guide.

Introduction

Hello, my name is [xxx] and I’m calling from People Science and Policy. We have been commissioned to undertake an evaluation of the science small grants scheme supported by the Scottish Executive and NESTA. I understand that you received a grant to [ADD SPECIFIC DETAILS FOR EACH TEACHER] in [ADD DATES]. Would you be able to spare some time to take part in a short interview? It should only take about 15 minutes. [IF IT IS NOT IMMEDIATELY CONVENIENT FOR THE TEACHER ARRANGE A MORE CONVENIENT TIME TO CALL BACK].

I will take notes of what’s said, but anything included in a report will be non-attributable/anonymous.

The project

I understand that your application was to [ADD SPECIFIC DETAILS FOR EACH TEACHER] could you briefly describe how you went about making the project work.

How easy, or difficult, was it to manage the project?

If you were doing the project again is there anything that you would do differently?

[FOLLOW UP ON ANY PROBLEMS THAT WERE ENCOUNTERED AND OVERCOME OR THINGS THAT WORKED WELL TO IDENTIFY EXAMPLES OF GOOD PRACTICE.]

How many students were involved in the project? [IDENTIFY PRIMARY AND SECONDARY NUMBERS SEPERATELY IF POSSIBLE.]

How many teachers were involved in the project? [IDENTIFY PRIMARY AND SECONDARY NUMBERS SEPERATELY IF POSSIBLE.]



Was anybody else involved? [FOR EXAMPLE PARENTS, LOCAL BUSINESSES, OTHER ORGANISATIONS.]

How well did the project meet your original aims? Why was this?

Were there parts of the project that worked particularly well? [FOLLOW UP ON WHY THINGS WORKED WELL TO IDENTIFY EXAMPLES OF GOOD PRACTICE.]

Were there parts of the project that worked less well? [FOLLOW UP ON WHY THINGS DID NOT WORK SO WELL AND HOW THESE MIGHT BE CHANGED TO IDENTIFY EXAMPLES OF GOOD PRACTICE.]

ASK ABOUT OTHER FUNDING IF SPREADSHEET SHOWS THAT THIS IS RELEVANT

How did you evaluate the project?

What were the main findings of your evaluation? [FOLLOW UP BY ASKING WHETHER THE TEACHERS HAVE ANY OF THE KEY FINDINGS IN AN ACCESSIBLE FORM THAT THEY WOULD BE PREPARED TO SHARE.]

The future

Did the project continue once the initial grant had been used? [WHETHER THE ANSWER IS YES OR NO EXPLORE WHY IT HAS CONTINUED OR NOT.]

Did the project lead to other activities either in science or related to the transition from primary to secondary? What were these?

Case studies

We are hoping to visit a small number of schools that have run projects that illustrate good practice. We'd like to talk to the lead teachers and local partners and ideally some of the participating students (in small groups). The main aim of these visits will be to identify and write up examples of good practice that the programme's funders can disseminate to help other teachers thinking of undertaking work like this in the future.

These visits are likely to be later this term, would you be interested in and able to take part in this work? [EXPLAIN THAT WE ARE CHECKING INTEREST WITH ALL TEACHERS AT THIS STAGE AND IF A NUMBER OF TEACHERS ARE HAPPY TO HELP THAT WE WILL LOOK FOR A CROSS-SECTION OF DIFFERENT TYPES OF PROJECT, SO INTEREST AT THIS STAGE DOES NOT NECESSARILY MEAN A DEFINITE COMMITMENT.]

Close

We will be in touch in the next few days to confirm whether we would like to take up your kind offer to host a visit.

OR

We don't expect to have to contact you again, but just in case there are any last points that I need to check, would it be alright to ring back to do that?

Thank you very much for all your help.



Appendix 3 Forensic Science

(Musselburgh Grammar)

Aims

The aims of the *Forensic Science* project were to address various transition issues by:

- involving pupils and staff from both the primary and secondary schools;
- linking and supporting the feeder primaries more closely in a science setting;
- introducing financially sustainable projects;
- encouraging innovative and motivational projects from which all pupils will benefit; and
- introducing an ICT initiative to enliven and broaden students' scientific experiences.

The main objective, however, was to ease transition by helping P7s to feel comfortable and knowledgeable about the Grammar School.

Overview of project

The *Forensic Science* project ran for the first time in summer 2006. P7 students watched an introductory video which was produced with the help of some S1 students and the English teacher; this DVD set the 'crime scene' and introduced the primary students to the suspects and witnesses. The DVD was then discussed by all the feeder primary schools. These activities involved group work, the exact nature of which was determined by the primary teachers following guidance and learning outcomes provided by the lead teacher. The aim of this was to stimulate discussion about the 'murderer'.

Primary students then went to the secondary school for a lab session that lasted half a day. They conducted two different types of experiment on six different samples to identify which sample, found on the victim, belonged to the murderer. The sample was made of a non-metal and metal and students did various tests to identify these including flame tests for the metals. Teachers were provided with in-house training prior to this event. For the practical pupils were put into friendship pairs and then put into teams of four with a pair from a different primary school. They then had to try and work out which suspect was guilty.

Only a small number of secondary pupils were involved in helping out; this was because the lab work took place during a period when the secondary students had other commitments. Therefore, not all groups of primary students had older students assisting them.

Altogether 320 primary pupils and about 10 secondary pupils who took part in the project; 14 secondary and 12 primary teachers and a technician were also involved.

Management

In order to get the primary teachers "*on track and enthused*" (secondary teacher), a meeting was arranged with them, and a letter was sent out to explain what would be



happening. At the meeting, the teachers saw a draft copy of the project plan and an explanation was given of how it would fit into their curriculum.

“The project was designed and ‘sold’ to the primaries with explicit links to their curriculum for science, English, maths, and some schools used it to teach citizenship.”

Secondary teacher

One secondary teacher oversaw the project and managed the whole process. This took a lot of additional time out of normal school hours, for example, making worksheets. Fortunately, the worksheets did not have to be started from scratch as she had a work package from a previous job, which she adapted. There were several subsequent meetings with the primary teachers where it was explained to them that they would be provided with the DVD and some worksheets and what the children would need to know when came to high school.

“They needed to come to the high school knowing that if they can connect a piece of evidence on the suspect to a piece of evidence on the body then that’s it.”

Secondary teacher

Application process and support

The application process was found to be straightforward and the workshop provided all the information necessary. The lead teacher found that there was no need for further support during the application process.

Evaluation

The project was evaluated through:

- pupil and teacher questionnaires, from which feedback would lead to future improvements, extension work and broadening the uptake of the programme;
- oral feedback from staff, P7 and S1 pupils;
- pupil work examined and evaluated accordingly; and
- confidence and levels of enthusiasm are monitored throughout the whole transition experience.

The project was improved on an on-going basis as a result of feedback and will continue to be improved upon for next year. The feedback was collated and was generally positive. There were a few recurrent issues such as problems with the DVD, the need to change some of the chemicals used in the experiments *“so the reactions were more fun”* (student) and changing the format of one of the worksheets to make it more useable.

Additional funding

The funding made the project possible, but the biggest expense was the chemicals, and the small grant funding wasn't quite sufficient and therefore a contribution was made from the secondary school science budget. Cover was also provided for secondary staff during the two days over which the lab work ran.



Successes and benefits

In general, it was felt that the project was very successful in meeting its aims, ensuring confidence in the laboratory and a positive experience of secondary school for the primary students.

Teachers

Completing this project made it much easier for the secondary teachers to find out about what the P7 students cover in science at primary school, thus informing their preparation for new students. It is believed that primary staff have also become more confident using science materials and teaching science because of the project and the improved links with the secondary science teachers. As a result of the project there have been more informal meetings between the primary and secondary teachers. It was felt important to maintain the communication links that had been built up as result of the project.

Some primary teachers were said to have seen their students abilities expressed in different ways as a result of the project.

“Primary teachers who attended the event at the school were surprised by what some of their students were able to achieve.”

Secondary teacher

It was emphasised that the project *“linked science to real life”* and *“linked science to real jobs”* (secondary teacher).

For one teacher,

“[The best bit] was the students’ enthusiasm, they seemed to be really hyped up about coming here and using the equipment...I was getting carried away as well.”

Secondary teacher

It was thought that the project was appropriate for students of all abilities.

“Students of lower ability particularly benefited from the hands-on work.”

Secondary teacher

“They may not have identified the ‘murderer’ like the more academic children did, but they still enjoyed being in the lab.”

Secondary teacher

It was emphasised that the teachers needed to take the students through the experiments step by step so that they were able to take everything on board. It was also appropriate for all levels because the teachers stressed that the students didn’t have to worry about what potassium or sodium was, as they’d never heard these words before, *“we just said they were different kinds of metal”*. They also adapted some of the materials for the experiments to ensure that all students could work through the elimination process.



“They’re very different in abilities and so are not always sure how to write down results, so I used a table to guide them through recording their results of the experiments [this will now be part of the pack from next year].”
Secondary teacher

The older students who helped seemed to really enjoy it *“they still talk about it.”*

Overall, the secondary teachers felt they had achieved their aims, although they stressed that there are always things to be improved.

“Until you run it once round you can’t see where the pitfalls are.”
Secondary teacher

It was also noted that degree of success could also be dependent on the cohort of students. A different cohort might react more or less positively to the activities. But, one teacher noted that,

“You put a Bunsen burner in front of a P7 they love it.”
Secondary teacher

Students

The primary students got experience of using tools such as Bunsen burners and are more relaxed in the labs, as they know their way around better. They also understand better that science is about the nature of investigation, i.e. that you won’t always get a ‘right’ answer or result or that sometimes the experiment won’t work. Some of the primary students also know that there are students at the grammar whom they know and from whom they can ask for help. The project also included some pupils who are on the autistic spectrum, and it was beneficial for them to go to the secondary school with their peers and take part in the activity.

“The Lab work and chemical tests went particularly well. The overheads used during teaching were clear and there were no problems, and the pupils had fun and found the project exciting – they liked working out their final answers as to who the murderer was, and why the person must be the murderer started lively discussion...The project also encouraged teamwork, and enabled the pupils to get to know pupils from other primaries who would be going to the same secondary.”
Secondary teacher

When asked about the project, many students mentioned the experiments and using the Bunsen burners in the first instance; these experiments were a particular highlight for a number of the students.

“It’s the first proper science that we’ve done.”
S1 student

Although there were some students who were unable to watch the DVD (see challenges section below), it seemed to be generally well received. One student thought it was *“cool”* and *“the acting was good”*.



Students seemed to like doing the group work with their primary teachers as *“it made us think”* and was a challenge.

“I hate problem solving but that was quite good.”

S1 student

Some noted the benefits of doing this kind of investigative work in groups and how it was good to be able to discuss ideas, that different people bring different perspectives and that they can learn from one another.

“You need other people to help you because you come up with different ideas.”

S1 student

There was general enthusiasm about doing the experiments at the grammar school. The students liked the way that they were taught by the secondary teachers, they *“felt that we were treated like adults”* and *“learnt what was expected of us”*. They also thought it was beneficial to mix with students from other schools.

“Good to mix with other students...friends with them now.”

S1 student

This project seemed to increase students' confidence about moving to the grammar school and, for some, address their lack of confidence about science lessons.

“I felt ready to come to high school.”

S1 student

“It made me think that I'm not the only one who'll get lost.”

S1 student

Students suggested that the only improvement for the project would be to spend a whole day doing experiments at the secondary school rather than a half day because they *“enjoy[ed] it so much and want to do more”*.

Like many others, these students showed a general enthusiasm for practical work and that was why they particularly enjoyed the project.

Challenges

Arranging the timing of the project was difficult. This is because the time at which such projects can be run in Musselburgh Grammar needs to be agreed by the senior management team and the primary schools arrange their teaching programme for the year by the start of the autumn term. Therefore, there is limited flexibility to start a new activity that hasn't been planned a long time in advance.

Unfortunately, the DVD didn't work on all machines, therefore, Musselburgh Grammar had to lend their DVD player to some primary schools. There were also some difficulties in editing the DVD, so not all students were able to watch it. These students were told by their teachers what was in the DVD and then carried on with the project. Some students also commented that the quality of the production of the DVD made it difficult to hear what the actors were saying.



Working out which tests would be easy enough for the students to do but still be interesting was quite difficult and cost also affected which chemicals could be used. The project team are using the experiences of the first year to improve the activity for next year. For example, by having more than one type of non-metal thus getting more positive results in the various tests for carbonates, chlorides etc.

Future

The project will be repeated in May 2007, albeit with a different ‘murderer’. The lead teacher is in discussions with the Local Authority (LA) about providing funds for the project to be expanded into all other clusters in the LA area.

The project will be sustainable and can be further improved upon based on the experiences of the first year. A lot of the work in setting up the project has now been done and will not need to be repeated in subsequent years so this element will be less time consuming. For example, a lot of the paperwork has been done, such as the risk assessments and worksheets. Furthermore, most of the chemicals are routinely bought by the school.

The teachers are happy to continue to take part and will need to do less preparation next time. It was also suggested that it might be useful if the secondary teachers can take groups that they are likely to be teaching the following year, although logistically this could be difficult to arrange.

The key advice to others doing similar project relates to time management and planning.

“Work out how long you think its going take and double it.”
Secondary teacher

Further links

An idea of a weather station was considered to allow primary students and staff to monitor weather patterns. It is the intention that this will help to maintain links with the feeder schools and further reinforce pupil confidence within a secondary environment. It has been delayed while permission is sought from the contractors who manage the school grounds as part of the public-private partnership. Therefore, the project is on hold, but is expected to start later in 2006.



Appendix 4 Build Your Own Power Station

(Holyrood RC Secondary School, Glasgow)

Aims

The aims of the *Build you own power station* were to:

- foster relationships between primaries and secondary;
- address the area of energy and forces by building on primary students' knowledge; and
- establish a sustainable project that would encourage the students to look forward to transferring to Holyrood RC Secondary School and enthuse them about science.

Overview of project

Previously, in this very large cluster there was no occasion when all the schools worked alongside each other. This creative project was designed to ease the transition by creating an opportunity to bring the primary and secondary schools together to work on a common project. The secondary school science teachers had concerns about the varying levels of student's knowledge on the topic of energy and forces. To address these issues, the project created a programme of activities that built on the students' basic skills and knowledge.

P7 students were provided with a box of resources (including Dynamos and solar panels) from which to build a power station. The students had three preparatory lessons, two in the primary and one in the secondary school. There was also an introductory DVD made by a team of S2 students. The primary students then built a power station, according to their own designs, in small teams in their primary school classes. They could then test the power station by trying to power a light bulb. During this time they were able to e-mail S2 students to ask questions about the project. Students produced project folders with details of their designs. The project also involved a competition, with one power station to be chosen from each school for a final event.

The project was led by two teachers; one from the secondary school and another from one of the feeder primary schools. Nine primary schools and one secondary school took part; this included over 200 primary students; 12 secondary students; 11 primary teachers and three secondary teachers.

Management

Ideas for this project were discussed with the other schools in the cluster. The lead teachers wanted the primary teachers to feel that they benefited from the project, therefore they devised two lessons for primary teachers to deliver. The lead secondary teacher drafted the initial worksheets, which were adapted by the lead primary teacher. Primary teachers were then provided with in-service training on the worksheet; any comments and opinions given at that stage were to be taken on board for the following year.

“Some of the primary teachers were fearful of their own lack of knowledge, hence why we provided the in-service training; they lacked confidence in teaching science.”

Secondary teacher



On-going support was also provided to primary teachers through the lead teachers who were 'on-call' and were able to take queries over the phone. The primary teachers were also involved in networking with each other to offer support.

Evaluation

The S1 students complete a baseline assessment when they start the secondary school, and one method that will be used to evaluate the project is to compare scores on the baseline assessment with previous years; this is yet to be completed. The main indicator of success or otherwise of the project will be whether students' attainment in the energy and forces topic has improved.

There was a cluster meeting at which the project was discussed, and constructive comments were made for next year's project. Parents have been asked to give feedback to the primary teachers about whether they think that the project had any effect on students, for example, the way they approach homework. There was also general informal feedback from students direct to the teachers.

Additional funding

No extra funding was secured. This meant that it was difficult to provide the equipment for all the schools in this large cluster of nine primary schools. Furthermore, the cluster covers a wide geographical area, so transport was a relatively large expense. For example, a bus for one school for a return journey costs approximately £100.

Successes and benefits

Teachers

When asked to describe the highlight of the project, teachers described how well the students had responded to the project.

"The enthusiasm and creativity of the students...they thought through their ideas so superbly well, and they worked as a team...the primary teachers did seem to be surprised by the pupils enthusiasm for the project, it exceeded my expectations."
Secondary teacher

"The children were enthusiastic and unafraid of making mistakes"
Primary teacher

"The whole idea...was getting them to experiment...there was a lot of creative input as well...many of the projects we got back we found that to be the case, it was fantastic."
Secondary teacher

It was thought that the main benefit for students *"was that they know basic operations of a power station and... of a renewable power source..."* (secondary teacher)

It was reported that there had been varying responses from primary teachers.



“Some felt it was good for their own development, others just still didn’t get it.”
Secondary teacher

It was also felt that communication within the cluster was further improved by the project and good relations extended.

In conclusion, the lead secondary teacher felt that the project was *“overall successful, but did not reach its full heights as it was very ambitious”*.

Students

There was generally a positive response from students, although some thought the project was quite difficult. However, as the lead secondary teacher emphasised, *“they came up with some great ideas and that was the important part of the project”*.

“The children were enthused by the challenge because they had to work it out for themselves and had discretion over the design.”
Primary teacher

Some students also asked parents (who were engineers) to help, or tried to get information from different organisations. They became inventive and creative in drawing upon people’s expertise/knowledge.

The primary lead teacher felt that it was *“real life science with a purpose”*, and it was a challenge that stretched the students. They were able to lead the way themselves and it was up to their creativity as to how they responded.

“Everyone in the group had a role, and it was not just the academically brightest ones that contributed.”
Primary teacher

Secondary students

Between four and six S1 students (now in S2) were asked to help develop the DVD for the project; they were chosen for their likely aptitude. The lead secondary teacher explained the aim of the project and gave them general guidance, the students then came up with various designs for power stations. They then worked as a group to decide on the best design from which to build the power station. During this process they took it in turns to film each other for the DVD. This work was carried out on two lunch times a week over a number of months.

“We learnt about different components of power stations... about different types of energy.”
S2 student

When the power station had been built the students went to a cluster meeting and discussed what they had done with the primary teachers. They were a little nervous about this, but were able to answer questions and were proud of their work. The students wouldn’t have changed anything in the project and they felt they had the correct amount of guidance and independence.



“It was quite well done, you do need some guidance because you can’t just go off and do it completely on your own...you could change it to what you wanted but still feel confident.”

S2 student

They thought it was a good project for primary students to do as it gives them a taste of what science is like at secondary school and allows them to visit the school too.

“A trial run for them...”

S2 student

They think science in primary school is very limited and would liked to have completed such a project when they were in P7.

“It’s something different...It’s not necessarily the actual project that you’re doing, it’s just the fact that there is something else to do...the course for primary is very lacking.”

S2 students

Primary students

The primary students (now in S1) who took part in the project generally enjoyed it, although some felt they were *“a bit pushed for time”*. They felt they learnt more about science and what high school is like. Practical work was thought to be the best thing about the project.

“[Before the project] I thought studying science was quite boring...just facts.”

S1 student

“It got me more interested [in science].”

S1 student

They thought the secondary teachers were better able to answer their questions and would have liked more sessions at the high school.

“The primary teachers didn’t know as much as the secondary teachers, because the secondary teachers are specialists [they were able to answer all the questions].”

S1 student

The primary students asked a few questions via email and found this useful.

“We asked how does gas travel.”

S1 student

They would also have liked to meet some of the older students when they visited the high school, to talk to them about the project. The primary students said it was good to have a competition as it gave them something to aim for.

“It felt as if you were working hard for something.”

S1 student



But, for some, building the power station was a bit too hard.

They liked working in teams and learning from one another.

“At first we had lots of problems making it...we couldn’t get the fan to work...a boy in my class came up with the idea of fitting an elastic band in it...we had good communications.”

S1 student

Overall, they felt that it should be continued for other students and were enthusiastic about having the chance to play a supporting role in the future, for example by being involved in making a DVD and answering questions.

“You knew how useful it would be and it was real.”

S1 student

Challenges

The project was a large amount of work for the two lead teachers. One did the organisational tasks such as managing the budget and keeping the primary head teachers on board, whilst the lead secondary teacher developed lesson plans and created the science teaching materials.

“Working with so many different people on a project of such a huge magnitude - there’s bound to be different views and opinions on the validity of it, and feasibility and success, this did prove to be quite difficult.”

Secondary teacher

“Time was a massive issue, I spent a lot of my summer holiday working on this, and many evenings and weekends...It was [time] I was prepared to give up.”

Secondary teacher

Therefore, for next year they are hoping to get more teachers in the secondary school involved in delivering the lessons.

The time of year (June) during which the project took place was chosen because it is close to the actual transition time so the project would still be fresh in the students’ minds when they started secondary. However, it proved to be difficult to arrange a ‘final’ of the competition, because that time of year is crowded, and the schools couldn’t agree on a day that suited everyone. Therefore, the secondary science teacher had to judge the results based on written reports.

The topic was also a little too difficult for some of the students.

“With hindsight, building a power station was a difficult one for the P7s, and some of the teams were unable to create a working one.”

Primary teacher

Unfortunately, it was not possible to edit the DVD due to staff illness. Therefore, it was not shown to the P7 classes; this might have overcome some of the difficulties that the



students had and furnished them with more ideas. It is hoped that the DVD will be ready for next year.

The biggest challenge scientifically, was the equipment.

“We would have liked to give them voltmeters rather than bulbs. Some students thought they’d failed because couldn’t light the bulb...None of their designs failed, but they didn’t all get the bulb to light.”

Secondary teacher

Future

This year, it is planned to move the project forward to the spring term so that a final event can be attended by all schools. Since the power-station was difficult, the team plan to adapt the topic to make it less difficult, but continue to use the existing resources that were bought with the grant money. The cluster will, however, need to secure extra funding for transport of primary students to the secondary school.

It is hoped that more teachers will be involved next year so that each teacher is taking only a few lessons. This is especially important as next year the project will be running in the spring term, which is when many students will be preparing for exams.

“All other teachers are enthusiastic about being involved next year.”

Secondary teacher

Key advice from the lead secondary teacher is,

“Make it ambitious but make it realistic too...our project was little over ambitious.”

Secondary teacher



Appendix 5 Science transition project

(Grange Academy)

Aims

The aims of this project were to:

- develop resources to support the common science programme and advance the learning and teaching of science;
- standardise experiences within the five partner schools;
- raise attainment;
- increase scientific skills;
- boost student motivation and involvement;
- lift the pace in S1/S2; and
- develop an effective method of recording student progress.

Overview of project

In partnership with science specialists from Grange Academy, a co-ordinated core science programme within the five associated primary schools (and one special school) is being developed and put into practice, beginning in 2005. The science transition project was led by the primary science curricular development officer, a new role that had recently been put in place. This officer also worked as a primary teacher but had protected time in which to carry out this new role. The remit of this new role is to support primary science in East Ayrshire. It was agreed that this project would be started with the Grange Academy learning partnership as the officer had previous connections with the school.

First of all, the development officer got together all primary schools and developed an action plan for each of them; this provided a rough overview of the topic to be covered and the resources that would be needed. Each school had a different topic with a view that they would share these resources in the future. Topics covered over the two years include: flowering plants; light and lenses; structure of the earth; space exploration; energy; water; rocks and soils; and electricity.

The development officer then produced a series of lessons plans for each of these topics. Each lesson plan took about five days to produce initially, but would be an evolving document. Some of the primary schools have science clubs and they had a valuable role in testing some of the activities in the lesson plan. The learning partnership also wanted to use ICT as much as possible (especially as they had extra funding for an innovative bid, see below).

“ICT is a powerful tool for engaging students.”

Lead teacher

This project involved secondary teachers working alongside primary teachers over a four week block each year and has run for two years. Based on this work, powerpoint presentations were put together by the primary students, these presentations included video clips, photos taken through the microscope and animated movies. The presentations were pulled together for a one day event in which some of the primary students presented



their work to the heads of the primary schools. In the first year of the project, presentations were displayed in one of the science classrooms at the Academy.

The projects were carried out in the summer term as secondary teachers do not have as many class commitments in that term. In the first year of the project, secondary teachers had less involvement in developing and delivering the lessons; this changed in the following year and they became more involved and worked more in partnership with some of the primary teachers. The resources were developed and amended as they were used. Photographs were also taken of students completing the tasks. These were added to the lesson plans as it was thought that it would be useful for other teachers to see when they came to use the resource; it would give them confidence that students of that age were able to complete the lesson. These photos also showed step-by-step how the experiments should be done. This is useful for those primary teachers who are less comfortable teaching science.

Many of the primary teachers had no experience of science but were enthusiastic about the project and agreed to take part without reservation as they had all seen an example of the project leader teaching science in their schools.

It is envisaged that the ongoing process of development of the resources by both teachers and P7 students would help develop students' scientific skills and broaden their knowledge and understanding of the subject. It is intended that the project will provide:

- a context for developing ICT skills;
- positive learning partnership links;
- student motivation through opportunities for continuing interest in and enthusiasm for science; and
- a raised profile for science in the curriculum.

In the first year (as mentioned above) the presentations were on a small scale in the science classroom at the Academy. For the second year, all primary schools in Ayrshire were invited to a one day event which took place in the main hall in Grange Academy; there were also displays from the Science Centre. This event was supported by senior students who made a video of the event, organised press coverage and assisted the primary students throughout the day.

Between 200 and 300 primary students took part in the first event, including seven children from a special school who were 'buddied' with the other primary children. All nine P7 teachers were involved as well as one technician, four senior teachers (biology, chemistry, physics and a principle), an ICT co-ordinator and the lead teacher (science curriculum development officer). Voluntary help was also provided by other secondary teachers including one who helped organise and set up presentations for the one day event.

Management

The project leader taught science in all the primary schools in order to demonstrate to the teachers ways of delivering science lessons in primary schools.



“I went to all the schools and allowed the teachers to see first hand their students experiencing science practicals.”

Lead teacher

The lead teacher then visited Grange Academy. She had previously been a secondary school teacher so this did not daunt her as many were ex-colleagues. The head teacher of the secondary school had to release staff on a good will basis as there were no funds to pay for cover. Therefore the project ran over the exam period when the teachers had fewer class commitments. Each teacher taught about four afternoons a week at one school over a four week period.

The project leader tried to meet frequently with all the teachers involved.

“We planned the project together and collectively agreed on the next steps.”

Lead teacher

Teacher’s concerns were taken on board and changes made where necessary.

Management of resources was difficult as it had to be ensured that each school had the correct equipment. Changes of personnel also had an impact on the project; this was unforeseen and difficult to deal with.

Pulling together all the activities over the four-week period was *“frantic”* (lead teacher). Looking back it was thought that there wasn’t enough collaboration in the first year; this was probably because the lead teacher did not want to ask the secondary teachers for help with lessons plans as she did not want to *“over burden them”* (lead teacher). This, however, resulted in these teachers feeling *“left out”* (lead teacher). In the second year of the project the secondary teachers undertook more of the teaching and fed back to the lead teacher after each session. Lesson plans were adapted through an on-going process as a result of these meetings.

Organisation of the final event, particularly the larger event in 2006, was a big task for which the team will be better prepared next year.

Application process and support

The team was disappointed that they did not receive the full grant as it was thought that the project was sustainable and innovative. It was thought that their application may have been penalised as they were still looking for hardware when the grant application was made. No further support was sought following receipt of the grant.

Evaluation

Students and staff completed feedback forms, the results of which were collated and appropriate action taken. Students kept a science log throughout the project. A traffic light evaluation at the end of each stage indicated success and difficulties. A code red required a meeting of participants to brainstorm next steps. This log was also used as a self assessment of the students’ knowledge and understanding and the skills that they used.

Teachers were involved in trialling and reviewing the new resources. As part of the on-going evaluation there were regular meetings to feedback and discuss next steps. Each



primary school also completed a science overview grid that provided the secondary school with the information needed to make the transition to S1 more effective.

Additional funding

Extra funding was secured via an *Enterprise Determining to Succeed* award from the Grange Learning Partnership; this was worth approximately £3,500. This extra money was considered essential because of the expense of buying the necessary apparatus. It was thought that additional funding would not be required in future years as the apparatus is now in place and can be re-used. Twilight learning partnership meetings of primary science co-ordinators and secondary specialists occur on a monthly basis supported by East Ayrshire Quality Improvement Officer.

The project leader gave a presentation to the senior management team on why this project would be a good venture to support. They in turn agreed to release staff, but this may have meant others in school had to cover classes.

“The senior management team was convinced that this was a worthwhile project.”
Lead teacher

Successes and benefits

This is a joint initiative between primary and secondary staff to enable them to have a better understanding and enable them to coordinate science lessons so that the children have a similar experience in primary and secondary schools.

“It pulled together a team of people that didn’t exist before.”
Lead teacher

“This [children have a similar experience in primary and secondary schools] has all been achieved to a greater or lesser extent in each primary school.”
Lead teacher

This sharing and co-ordination has led to raised standards, one primary school had an HMIE inspection and science had improved in this school.

Teachers

Primary teachers

The cooperation and collaboration of teaching effort between primary, secondary and ICT was particularly successful. Primary teachers felt that their confidence in teaching science had been improved and that this was due to the way that the project was run.

“I’ve certainly noticed a huge difference in my school [in confidence of teachers].”
Primary teacher

“...the way that it was approached...ability to sit and discuss...work with experts...benefit from their experience.”
Primary teacher

The lessons plans are prescriptive so the teachers knew exactly what they had to do, again enhancing their confidence with regard to less familiar topics.



“...even though it was a different topic I knew that I had the confidence to look at some of the activities and give them a go...I pushed myself more on the ICT next time as I had more confidence in the science [from the first project].”

“...there were times where the [secondary] science teacher was correcting my misconceptions and I thought it would have been so easy for me to go in and teach it the wrong way...”

Primary teachers

Primary teachers valued the support from the secondary teachers and relations between teachers improved. They felt that their *“questions were always answered by the lead teacher”*. Although, experience of support from secondary teachers varied depending on which teacher they had worked with, their workload and their ability to spend time with the primary teacher. There is now a greater understanding of each other’s roles and the difficulties that each has, for example, larger classes in primary schools and no designated science lab. The primary teachers valued having the chance to input throughout the project.

It was thought that the resources provided catered for a range of abilities and were adaptable for those of lower ability. The final event was thought to be useful in that it allowed the students to see how others had completed the same projects and how they had done it differently.

One primary teacher highlighted that at a recent parents meeting (just before the summer holiday) *“every single parent mentioned the science project”*.

Secondary teachers

There was a general feeling amongst secondary teachers that the project was a success.

“I really enjoyed it, it was good.”

Secondary teacher

Although, there was some concern about cover for lessons whilst they were at the primary schools and about having the time to learn the lesson plans in preparation to take primary lessons. Some were also a bit wary about teaching science in the primary schools because they don’t have the same amenities that are at secondary schools, for example, technicians and dedicated labs. Some were surprised by the abilities of the P7 students.

“They loved doing the experiments, they seemed to understand the instructions better than some of the first years...they were keen to do things... I was amazed how quickly they picked up things.”

Secondary teacher

It was thought to be difficult to assess how successful the project had been with regard to increasing ability and interest in science as each school is currently doing different projects. Although, the ultimate aim of the project is to ensure a common science curricular across the primary schools. Teachers did believe, however, that the post-transition students were more confident in school in general.

“They settle more quickly and know you better and they’re more keen.”

Secondary teacher



The secondary teachers also felt that they had learnt a lot from their primary colleagues.

“It’s a revelation, some of the ideas that they have, we just don’t have...they have many more strategies for teaching kids than us, we learnt so much off them.”

Secondary teacher

The key advice to others doing similar projects was that they:

- should get to know the teachers that they would be working with in primary schools;
- shouldn’t be nervous; and
- that they should do plenty of preparation.

It was felt that the project was sustainable, teachers were happy to continue to take part and would encourage others to do so.

Students

Feedback from the P7’s who are now in secondary school was very positive; they were not so scared of the secondary school. The ICT element of the project was also particularly successful with some of the most challenging children. Furthermore, in the second year, the seniors became more involved and supported the event through management and organisation.

“We’d never done microscope work before...it was good.”

S2 student

“More practical work...experiments.”

S2 student

“It prepares you for science at secondary school.”

S2 student

The students liked working together as a team when preparing the presentations. In response to pupil requests for more science, the secondary school are planning for one teacher to go to one primary school each week throughout the school year.

“The school is funding this through its commitment to improve science in the primaries.”

Secondary teacher

Those that attended the Salters’¹ Challenge highlighted that they enjoyed being shown experiments in “*proper lecture theatres with real scientists*”.

Challenges

The project leader felt that communication wasn’t as good as it could have been in the first year of the project. This has been improved by:

¹ The Salters’ Festivals of Chemistry are an initiative of The Salters’ Institute, whose aim is to promote the appreciation of chemistry and related sciences among the young.



- putting more project details and progress in writing;
- having more meetings; and
- ensuring that school management are fully aware of progress.

The lead teacher has also presented the project and its outcomes at curriculum management meetings and to all heads of the primary and secondary schools.

The secondary teachers had a bigger input in the second year of the project. In the first year they had felt that they were “*supporters rather than drivers*”. Therefore, they have taken on more leading and active roles. This has made the secondary teachers feel as if the project is not being pushed upon them as they are taking a more pro-active role.

Initially, the schools did not have the appropriate software to carry out all activities within each lesson plan. The local authority was persuaded to bring forward its plans for putting this software in place so that the project could go ahead.

The main challenges were linked to confidence of primary teachers, logistics and time.

“Lack of confidence and space in classroom were biggest barriers.”

Primary teacher

“Bit of a rush in preparation, a longer lead time would have been better.”

Primary teacher

Future

The learning partnership has continued to meet on a monthly basis to share good practice and ideas, and to discuss issues and future projects. It is hoped that this project will continue, there are staff in place with the relevant expertise to continue and develop the project, but this does depend on securing funding from other sources. The project leader has also been approached by one learning partnership, and has been asked to present at another. They are also considering inviting parents to the final event by having an evening session.

“The partnership feels that this has been a very successful initiative and has met many of the original aims of raising the profile of science.”

Lead teacher

Furthermore, in response to student requests they plan to have one science teacher from the secondary school teach a session in the primary schools each week, rotating between all those in the learning partnership. Science has also been included in the S1 elective options for the first time. In autumn 2006 they had 58 students (out of 240) who chose science; this is more than they anticipated.

“This was a huge indication that the science initiative was successful with large numbers choosing to take extra science rather than extra music, PE or art - the normal magnet subjects.”

Lead teacher



Building on the improved relationship between the learning partnership schools there was a joint venture with the secondary school where students from S1 and P7 were taken to Glasgow University to take part in the Salters' Challenge and the group from the secondary school won. The selection process for this involved some students from one primary school attending the secondary school and doing a series of activities. It is hoped that opportunities for P7 students to do activities such as this at the Academy will be expanded.



Appendix 6 Virtual Science – Science Walk

(Dingwall Academy)

Aims

The aim of this virtual science project was to furnish primary school cluster students with knowledge about the science curriculum that awaits them at the Academy. It was intended that knowledge in all areas would be increased and that some groundwork, for example with regard to health and safety, would be started prior to arrival in secondary school. It was also hoped that the cluster schools would contribute by producing materials for their own ‘lab’ area within the tour. It was intended that the project would also stimulate interest in science amongst participating senior students and would enhance the status of the subject by utilising dynamic multimedia.

Science Walk was created in an attempt to address the problem of young people losing interest in science as a subject for study at secondary school and beyond. It targets 11-12 year olds and attempts to raise the profile of science as a valuable, enjoyable subject.

Overview of project

It was intended that the project would involve creating a middle school/senior school student production team who would produce an interactive CD Rom virtual tour of Dingwall Academy building and science faculty. Primarily, the group would create a series of science ‘labs’ each focusing on different themes appropriate to S1 science topics such as: being a scientist; health and safety; living things; energy; the chemical elements; water; the microscope; plants; and animal reproduction. These virtual labs would contain a mixture of photographs and film.

However, the project had to be revised after the grant application was unsuccessful in the first round. Therefore, the project actually involved the production of a science magazine, with a total of four issues in one school year. A CD Rom including pastoral and science issues was made with the assistance of the scheme representative and an expert from Planet Science.

Using a media angle for the project was chosen because it “*capture’s people’s imaginations*” and is “*cutting edge*” (secondary teacher).

The Science 3-18 newsletter (magazine) included information about:

- inventions;
- experiment of the month;
- scientist of the month;
- maths corner;
- competitions (with sponsored prizes); and
- word searches (including key words that are difficult for certain ages).

Some sections of the magazine were also translated into Gaelic.



Prior to the primary students' induction day at the Academy a group of students (including some from the production team), the head boy and the lead teacher visited the primary schools. They distributed the latest edition of the magazine, presented prizes and took photographs; these were then printed in the edition of the magazine that was published shortly after the induction day. The pastoral and science films (lasting one hour) were presented to the P7 students at their induction day at the Academy.

The two key secondary teachers involved in the project were the lead teacher (a science teacher) and the English and media studies teacher; there was also input from the mathematics and Gaelic teachers. Primary teachers were not directly involved in delivering the project. Twelve secondary students as well as 120 primary students took part.

Management

The lead teacher had a very demanding timetable but was helped by the Head teacher who allowed her time that she could use for the project.

“There was a lot of work involved in managing the project.”

Lead teacher

The lead teacher made phone calls and visits to the P7 teachers prior to and just after the first edition of the magazine was published. It was hoped that they would use the magazine in their science lessons. The primary teachers' first reaction was concern that it would involve more work for them. Once it was explained that this magazine would be there to supplement what they already did they were more positive.

The first magazine was written by teachers; after that, students from the production team contributed. Comments on drafts of the magazine were sought from colleagues in the science department.

Project responsibilities were therefore shared between the teachers and the students involved in the project.

“The key to success of the project is based on the involvement of students who make key decisions in terms of editorial content, style and layout (within the limitations of an agreed design template).”

Secondary teacher

Application process and support

At the time the application was made the English and media studies teacher was on a secondment as a Principle teacher of national priorities, and was frequently searching for details of various schemes and competitions on the Internet. It was felt that a great deal of support was received during the application process.

“The scheme representative was incredibly useful”.

Secondary teacher

The application was one of the most rigorous ones for which the teachers had applied, but this was expected due to the scientific nature of the award.



Additional funding

A sponsorship deal was set up with Borders' Books in an attempt to preserve funds, which offered Borders' advertising opportunities in the magazine.

Successes and benefits

Feedback in written and verbal form was very positive.

"We're very proud of it."

Secondary teacher

"I think the most successful aspect was understanding how to make science films... others would say [the most successful aspects were] the on-going magazine or the fostering of the primary and secondary relationship."

Secondary teacher

The project was also short-listed for the Bill Bryson Science and Communication Awards, one of 12 projects to achieve this from over 300 entries across the UK. In addition, the films made by the production team, along with similar films Planet Science was making with the Glasgow Science Centre, are to be used to promote the Planet Science educational website.

Teachers

It was thought that the links between teachers in primary schools and those in the Academy had improved and would continue to do so.

"It was good to bring the teachers together...links...have improved."

Lead teacher

"It created a bit of an impetus...there's more focus on fostering primary and secondary relations now."

Secondary teacher

It is hoped that the cluster can build on this and work more closely in future. Feedback from the rector, who has been promoting the project to primary school teachers has also been positive.

The lead teacher had to learn a great deal about filming from scratch. The English and media studies teacher, however, commented on how well the lead teacher had developed.

"Her development has gone through the roof...now capable of filming editing [etc]"

Secondary teacher

Students

The secondary students involved in the project learnt new skills.

"Training is a key element of this project...pupils have learned new skills through co-operative problem solving and attendance at specific development events."

Secondary teacher



The students are proud of their work on the magazine.

“There’s a buzz when the new edition comes out.”
Secondary teacher

Furthermore, feedback to the teachers from the older students highlights that they “*enjoy putting something back in*”; it was also thought to enhance their CVs.

For primary students,

“It [this project] highlights the importance of science and raises the profile of the subject.”
Secondary teacher

Challenges

The first application not successful, this created a problem as some of the senior students who were to be involved in the project had gone to university by the time the application was successful. Therefore the project had to evolve in other directions. It was decided that the revised project was the “*best way to keep science up-to-date*” (lead teacher).

Initially, the production team made pastoral films and attempted to make science films which they found quite difficult. These films were shown to the scheme representative who took them to an expert at Planet Science. Following this, a two day workshop was held at the school by the expert from Planet Science. This workshop was used to press launch the magazine. This training was invaluable and both students and teachers learnt a great deal.

Initially, support from some colleagues at the Academy was limited.

“Anything that is different or new, may be seen to expose an implicit criticism that an initiative like this is needed and has not taken place already”
Secondary teacher

Some of this initial reluctance has reduced and it is hoped that recognition of the project externally might raise its credibility.

Future

A new production team has been established which includes some of the previous P7 students who are now writing for their former school mates in the feeder primary school. New films are being planned and producing the magazine in colour is being considered, but this will have a financial impact. Costs relating to production and printing in black and white are covered by the school, but more sponsorship will be sought for competitions and prizes. Equipment that was bought with the grant will continue to be used. The school has access to Scottish Executive funds to promote media literacy which will cover some of the additional costs related to filming. The lead teacher is also considering producing a science related calendar that would be sold to raise more money.



It is hoped that the films and magazines will be put onto the Academy's website so that they can be accessed by other schools. In this way, it is hoped that the project will be replicated by other schools as a means of achieving specific science based targets for students as well as developing a greater sense of a scientific community for any academy and its associated feeder primaries.

“Science Walk is a project which should be shared as an example of good practice. In essence it is a simple idea: a publication, with an added dimension of multi-media production, both aspects designed to increase appreciation and interest in science in a specific target group.”

Secondary teacher



Appendix 7 Case study topic guides

Teachers (secondary)

Introduction

Hello, my name is Angela and I work for a company called People Science and Policy. We have been commissioned to undertake an evaluation of the science small grants scheme supported by the Scottish Executive and NESTA. [NAME OF SCHOOL] received a grant for a science transition project on [TOPIC], starting in [YEAR]. I would like to hear your views on the management, implementation and outcomes of the project.

I would like to use a tape to record the discussions, this is just so that I will be able to concentrate on listening to you now and be able to listen back to the tapes later. Is this OK?

PRESS RECORD ON TAPE

Please could you each introduce yourselves and tell me what your role is within the school and what was/is your role in the project.

Application process and support during the award

How did you hear about the science small grants scheme?

What are your experiences of the application process?

Did you receive any further support during the award? If so, was this helpful?

The project

Why did you get involved in the project in the first instance?

Were there any barriers to you taking part in the project? [These might include time, attitudes of colleagues/managers, other resources (money)]

How much of your time did the project take up?

How easy or difficult was it to fulfil your original commitment to the project?

Looking back, would you still have agreed to take part in the project, given what you know now? [compare and explore feelings at start of project with those now]

Successes and challenges

What elements of the project were particularly successful? [Probe for examples and why]

What elements of the project implementation were challenging and how did you overcome the challenges (if they existed)?

Would you suggest any improvements? If so, what?

What advice would you give to others doing similar transition projects?

Benefits

Do you think the pupils moving from primary to high school have benefited? If so, in what way? [Probe examples for evidence of how this judgement is made, comparisons with previous students, aptitude for science/confidence].

Has there been any formal feedback from the various participants? If so, in what way?

Do you think that you have benefited personally from the project? If so, in what way?



Do you think your colleagues (primary and secondary) have benefited? If so, who and how?

Has communication between cluster schools and teachers improved as a result of the project? Why? [ascertain relationship prior to project and compare]

Overall

How well do you think the project met the original aims?

Do you think that it will be possible to sustain this project? Why/why not?

Will you continue to take part? Why/why not?

Close

Thank you very much for talking to me.

Recommendations made in our evaluation will be targeted at spreading better understanding of the barriers that exist at the transition from primary to secondary education in science and good practice in addressing these barriers.

The main output from these case studies will be narratives suitable for dissemination on websites and flyers to support good practice and stimulate new ideas. Any information/quotes used in this material will be subject to permission from the school.

Any questions?



Teachers (primary)

Introduction

Hello, my name is Angela and I work for a company called People Science and Policy. We have been commissioned to undertake an evaluation of the science small grants scheme supported by the Scottish Executive and NESTA. [NAME OF SCHOOL] received a grant for a science transition project on [TOPIC], starting in [YEAR]. I would like to hear your views on the management, implementation and outcomes of the project.

I would like to use a tape to record the discussions, this is just so that I will be able to concentrate on listening to you now and be able to listen back to the tapes later. Is this OK?

PRESS RECORD ON TAPE

Please could you each introduce yourselves and tell me what your role is within the school and what was/is your role in the project.

The project

Why did you get involved in the project in the first instance?

Were there any barriers to you taking part in the project? [These might include time, attitudes of colleagues/managers, other resources (money)]

How much of your time did the project take up?

How easy or difficult was it to fulfil your original commitment to the project?

Looking back, would you still have agreed to take part in the project, given what you know now? [compare and explore feelings at start of project with those now]

Successes and challenges

What elements of the project were particularly successful? [Probe for examples and why]

What elements of the project implementation were challenging and how did you overcome the challenges (if they existed)?

Would you suggest any improvements? If so, what?

What advice would you give to others doing similar transition projects?

Benefits

Do you think the pupils moving from primary to high school have benefited? If so, in what way? [Probe for evidence].

Has there been any formal feedback from the various participants? If so, in what way?

Do you think that you have benefited personally from the project? If so, in what way?

Do you think your colleagues (primary and secondary) have benefited? If so, who and how?

Has communication between cluster schools and teachers improved as a result of the project? Why? [ascertain relationship prior to project and compare]

Overall

How well do you think the project met the original aims?

Do you think that it will be possible to sustain this project? Why/why not?

Will you continue to take part? Why/why not?



Close

Thank you very much for talking to me.

Recommendations made in our evaluation will be targeted at spreading better understanding of the barriers that exist at the transition from primary to secondary education in science and good practice in addressing these barriers.

The main output from these case studies will be narratives suitable for dissemination on websites and flyers to support good practice and stimulate new ideas. Any information/quotes used in this material will be subject to permission from the school.

Any questions?



Students (primary to secondary)

Introduction

Hello, my name is Angela and I work for a company called People Science and Policy. We have been commissioned to undertake an evaluation of the science small grants scheme supported by the Scottish Executive and NESTA. [NAME OF SCHOOL] received a grant for a science transition project on [TOPIC], starting in [YEAR].

I understand that you took part in this, is this right? I would like to hear your views on taking part in the project. There are no right or wrong answers, please feel free to say what you think.

I would like to use a tape to record the discussions, this is just so that I will be able to concentrate on listening to you now and be able to listen back to the tapes later. Is this OK? We won't pass on anything you say to anyone, so please be as honest as you can about the good things and bad things.

PRESS RECORD ON TAPE

First of all, please could you each introduce yourselves and briefly tell me if there is anything you like about science.

The project

What do you remember about the project?

[Note all things mentioned on cards]

[BRIEF DETAILS OF PROJECT]

[PROBE AS BELOW]

One aspect of project (for example, teaching by secondary teachers)

What did you think of the teaching by the secondary teachers?

What were you favourite and least favourite things about it? Why?

Did the teaching from the secondary teachers help you learn more about science? How?

What could have made the lessons better?

Another aspect of the project (for example, presentations)

Did you enjoy doing the work and preparing the presentations?

Were they useful? What did you learn?

If you had to do something like that again, how would you make it better?

A further aspect of the project (for example, one day event)

What did you think of the event where you presented your work? [Probe for enjoyment/learning/anxiety]

Overall

Did the project help to make you feel less nervous moving to high school? Why/why not?

Are you more interested in science because of the project? Why/why not?

How could it have been made better?



Are there other things about science that you think might help people like you when they move from primary school to high school? [Probe for reasons]

Close

Thank you very much for talking to me.

Any questions?

[We will be writing up good practice notes based on what you and your teachers say to help other schools that want to run projects like [NAME OF PROJECT]. These notes might mention your school, but won't give any of your names.]



Students (secondary)

Introduction

Hello, my name is Angela and I work for a company called People Science and Policy. We have been commissioned to undertake an evaluation of the science small grants scheme supported by the Scottish Executive and NESTA. [NAME OF SCHOOL] received a grant for a science transition project on [TOPIC], starting in [YEAR].

I understand that you took part in this, is this right? I would like to hear your views on taking part in the project. There are no right or wrong answers, please feel free to say what you think.

I would like to use a tape to record the discussions, this is just so that I will be able to concentrate on listening to you now and be able to listen back to the tapes later. Is this OK? We won't pass on anything you say to anyone, so please be as honest as you can about the good things and bad things.

PRESS RECORD ON TAPE

First of all, please could you each introduce yourselves and briefly tell me if there is anything you like about science.

The project

[BRIEF NOTES ON CONTRIBUTION OF SECONDARY STUDENTS]

Please could you tell me about your involvement in the project? [Probe for tasks, responsibilities, level of support required etc]

What do you think you learnt from being involved in the project? [Probe for aptitude for science/teamwork/confidence building]

If you had been in charge, is there anything you would have done differently?

Do you think the primary students benefited? Why do you say that?

Are there other science activities that you think might help future students when they move from primary school to high school?

Would you like to be involved in this project (or similar ones) again? Why?

Close

Thank you very much for talking to me.

Any questions?

[We will be writing up good practice notes based on what you and your teachers say to help other schools that want to run projects like [NAME OF PROJECT]. These notes might mention your school, but won't give any of your names.]