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**STIRLING COUNCIL CHILDREN'S SERVICES**

**BUILDING BRIDGES**

**CASE STUDY**

**OCTOBER 2004**

**Raploch Primary School**

**Wallace High School**

**BUILDING BRIDGES PROJECT 2003/4**

**Case Study**

**1. Introduction**

The Building the Bridges project was launched by Learning and Teaching Scotland as a National initiative to improve literacy across Primary 6 - S2 during session 2003/4.

The project came at time when secondary schools were undergoing management changes due to the implementation of "Teaching in the Twenty First Century" and schools had already prepared their school development plans for the forthcoming year.

It is also worthy to note that at the same time a large number of schools were already involved in the national "Assessment is For Learning" project.

As a result of other commitments and the timing of this initiative it was very difficult for Stirling Children's Services to identify, approach and get the agreement of schools to participate in the project in the proposed timescale.

**2. School Context**

Two schools that did agree to take part in the project were Wallace High School and Raploch, one of its associated primary schools.

These schools are both in urban locations and with high areas of deprivation in their catchments; Wallace High School has a FME of 19% and a roll of 874. Raploch is in a similar position with an FME of 53% and a school roll of 200. Both schools have high levels for footwear and clothing grants and are in the top 10% of the deprivation tables in Scotland.

The two schools had each recently undergone an HMIE Inspection and were involved in the "follow through" process. The HMIE highlighted English language, particularly writing as a main point for action in both schools.

Other areas identified for further development were the pace of learning and arrangements for assessment. These recommendations were directed at the upper stages in the primary school and S1 and S2 in the secondary school.

The schools had therefore identified the development of literacy as a priority and had incorporated this in to their school development plans and HMIE action plans.

In addition the whole cluster had identified functional writing within Science as a priority for session 2003/4. This was in response to the need for a progressive and coherent Science programme for Science across the cluster and to address the levels of attainment in writing at both school and authority level.

The project had a difficult start, as there was no initial input from the University. In addition to this, the two primary teachers initially involved in the project went on maternity leave and supply teachers covered their positions from April to June 2004.

As a consequence of the changes of staff in the primary school the planned project was amended and changed in April 2004.

The final project was in the form of two distinct parts, the first completed by the original primary teachers and the second part by the supply teacher. The two parts were complementary, with the second part building on the knowledge gained from the initial research conducted in part one.

### **3. Aims of the Project**

The overall aims of the project were clearly identified in the information provided by Learning and Teaching Scotland.

The aims of the project in Stirling Council were:

- To improve the literacy skills of the pupils P6-S2
- To improve the liaison between the primary and secondary school
- To investigate and implement the use of different teaching strategies and learning styles to improve literacy
- To establish the usefulness of different techniques and the wider dissemination of these skills to the remainder of the cluster to promote a coherent approach in functional writing
- To produce a case study for dissemination nationally to the other authorities involved in the Building Bridges project

A list of the staff involved in the project can be found in Appendix 1.

### **4. Outline of the Project up to November 2003 - April 2004**

#### **Part 1**

The first part of the project was developed in order to overtake the following aims:

- To improve the liaison between the primary and secondary school
- To investigate the use of different teaching strategies and learning styles to improve literacy

#### **Operation of Part 1**

The first part of the project focussed on the liaison between the primary and secondary sectors. It was recognised immediately that understanding of the different teaching and learning environments of the two sectors needed to be acquired by all the staff involved.

The first priority was to enable all the participating staff to network and share information and expertise. In order to provide a common starting point and to fulfil the priorities of individual school development plans and the cluster plan, it was agreed that the focus of the project was to be functional writing.

Several whole team meetings were held which allowed the staff the opportunity to discuss, explore and agree a plan for the project and how this was to be taken forward.

The first part of the project involved staff members from the two sectors shadowing and familiarising themselves with each other's classroom environments and organisation, teaching strategies and resources. The aim was to examine the methodologies being used in the different sectors in relation to note taking and functional writing

## **Outcomes of Part 1**

- The staff found shadowing a useful and enlightening experience:
- The secondary staff appreciated the use of “brain storming” as whole class activity rather than a small group activity, as they had been operating it in the secondary school
- The primary staff appreciated the difference that it made to teaching by having different children for shorter periods of time.
- There was no common way of note taking being used in both sectors. The most commonly used way of note taking was for the teachers to relay information orally either from text or from some other source and the children to then write down what they had learned. Alternatively the children were directed to a variety of sources of information and then told copy down what they think is relevant.
- All staff recognised that a large number of pupils in both sectors found note taking a difficult area of their work and pupils displayed a lack of interest in finding information.

The primary staff used a pupil questionnaire on note taking in order to find out what the children felt about the process. The results of the questionnaire showed that children on whole found the task of note taking and finding information difficult.

The reasons for this could be that language for some children is a barrier, that some children do not have sufficiently well developed strategies for eliciting information, or that some 7 children have a lack of understanding of how to organise their thinking. Another reason could be that children find it difficult to link the knowledge they have to the knowledge, which they need to complete a task.

Staff from both sectors agreed that the shadowing had had a very positive affect and had improved their own teaching practice.

## **Conclusions of Part 1**

The first part of the project was essential in that it enabled staff to gather the information on which to base the second part of the project. It had provided staff with invaluable information about the other sector and had increased their understanding of the development of children’s skills in note taking and finding information as they moved from primary to secondary school. It also provided staff with a common knowledge of the methodologies used in teaching functional writing.

Staff recognised that there were areas for development that were relevant to both sectors and in addition they had become familiar with the methodologies used in both sectors. It was clear that there was a need to further consider how to provide consistency across the stages P6 - S2 and across schools in order to provide a coherent approach to note taking and functional writing.

The staff involved also concluded that children and young people across all stages found it difficult to organise and use information and that planning for writing was an area, which needed to be developed in addition to note taking.

The first proposal for part two was to provide a guide to include writing frames and a framework for functional writing, which could be disseminated and used by all schools. This will be completed through the cluster plan for functional writing in Science during session 2004/5

The second proposal for part two was to introduce into both the upper primary and secondary school one method for planning and note taking and to compare the results of the introduction of this method across both sectors.

## **5. Outline of the project April – June 2004**

### **Part 2**

The second part of the project addressed the following aims:

- Improve the literacy skills of the pupils P6-S2
- To investigate and implement the use of different teaching strategies and learning styles to improve literacy
- To establish the usefulness of different techniques and the wider dissemination of these skills to the remainder of the cluster to promote a coherent approach in functional writing
- To produce a case study for dissemination nationally to the other authorities involved in the Building Bridges project

### **Operation of Part 2**

Reviewing the conclusions of part 1 of the project it was decided that it would be feasible to introduce one methodology for note taking and functional writing across both sectors.

The advantages of this approach were that:

- It could build on the prior learning gained by staff from the first part of the project
- It would address an area of development which had been identified in both sectors
- It would minimise the effects of the change of staff in the primary school
- It would produce a piece of action research which was time limited and within a clear framework
- It would continue to 'Build Bridges' between the two sectors
- It would overtake the following aims of the project

Several meetings of the whole team took place and there was a very useful contribution from Sue Ellis (Strathclyde University), helped the team to review the progress of the project to date and proposals for next steps.

The work in the first part of the project had been very useful in identifying the problems, which children had in eliciting, retaining and organising information from a variety of sources, planning their work and then being able to use that information in functional writing.

The team reviewed various methodologies for teaching note taking which included scaffolding, highlighting and mind mapping. The use of scaffolding and other techniques was discounted because of the very tight timescale and the nature of projects that had already been planned for the last term of the session.

It was decided that the method of mind mapping and the introduction of highlighting in note taking would be introduced.

The rationale for this was that:

- It would build on the work completed on note taking in the first part of the project
- The librarian at Wallace High School was using uses mind mapping with all first year young people as part of an Information Skills course
- All primary and secondary staff had some prior knowledge of mind mapping although at different levels
- There was an abundance of information on mind mapping
- It was a methodology which could be used in all curricular areas and at all stages
- It was not resourced based

Mind mapping was therefore introduced to the Primary 5/6 and Primary 6 classes at Raploch Primary School and as a teaching methodology to some Science and English classes at Wallace High School.

It was proposed that the evaluation of the effectiveness of Mind Mapping in improving pupils' ability to use information would be based on

- Teachers' perceptions
- The increased output of children and young peoples' writing
- Children and young peoples' comments and evaluations of the strategy.

As part of the action research the results of the use of mind mapping at these stages and the resulting conclusions of the teachers and children were to be compared and contrasted with the perceptions of the librarian on the use of mind mapping in S1.

The librarian had used mind mapping for some time and had a great deal of expertise that was shared with the other members of the project team.

#### **(a) Secondary School Context**

Before the introduction of mind mapping, other projects which had been completed by young people indicated that there was an over reliance on the Internet and books for research. This may have resulted in large sections of texts being copied with lower than expected long-term understanding and retention of information.

A questionnaire was given to secondary students before the introduction of mind mapping and the following is a summary of their responses:

- The areas that they found most difficult about English language were making notes and planning a piece of work
- Their homework preference was for firstly research based tasks and secondly writing tasks
- They indicated that they enjoyed Internet research followed by research projects

These responses indicated that the teacher's perceptions of the previously completed research projects had some correlation to the young people's perceptions of the difficulties which they were experiencing in planning and taking notes in order to complete a project.

### ***Focus of Activity***

Mind mapping was introduced as part of the Arichi project on energy in Science and the Sharks project in English. These two projects have the same format of class research followed by home study. The young people are given various sources of texts on energy and sharks and are asked to take notes and gather information. They had one week to finish the research and then complete a booklet at home.

### ***Outcomes***

After the introduction of mind mapping the secondary teachers formed the following opinions from their observations of the young people:

- Mind mapping had a positive affect on the behaviour of the students; they were more motivated and more industrious, quieter and stayed on task longer
- Overall young people were more able to engage in peer assessment and make comments relating to other people's work
- Young people were able to produce better plans for their projects.
- The work on planning resulted in a better standard of completed project
- Higher attaining students were able to see the value of the transferable skills gained through using mind mapping
- The middle groups found mind mapping of most help in organising and planning their work
- When using mind mapping young people were able to be more selective in the sources of information that they used for their project. They were able to use their own words and understand and internalise the information they had found
- Young people were more sophisticated in the way in which they organised their ideas. The mind map allowed them to express their thinking because it used their own words and was personalised
- The use of drawings enabled some students to overcome the barrier of language that hindered their learning.

### **(b) Primary School Context**

Before introducing mind mapping a pre-project questionnaire was given to the children. This highlighted the work that had been conducted during Part One of the project on note taking and eliciting information from texts.

The children were asked to respond to various questions about organising, finding information and how they planned their writing.

The responses showed that some children:

- made rough copies
- "did" it in their heads
- wrote down ideas or
- "just did it"

The results of the questionnaire indicated that while most children were able to express why it was important to be able to extract and organise information it was difficult for them to put this into practice. Some children tended, as in the secondary

school, to copy “huge chunks “ of information without identifying the key facts and this could have resulted in the overall lack of enthusiasm for research-based activities expressed by the children.

Therefore even though children were well used to research, recall methods and comprehension based language activities, listening to information given orally and writing down the main points remembered, they continued to find difficulty in eliciting, organising and retaining information.

### ***Focus of Activity***

In the primary school mind mapping was used in a variety of activities, which included a project on Australia, an enterprise project, revision for a French test and a Recycling project

The introduction of mind mapping was accomplished through the teachers modelling and producing their own mind maps for the children to see and then encouraging the children to use mind maps in planning their projects. Children were shown how to complete mind maps firstly using words and sentences and then pictures and diagrams. Large-scale mind maps were also used to show how the class could plan for the enterprise project.

Highlighting was introduced when using texts in the Recycling project. The children used highlighter pens to identify relevant facts.

### ***Outcomes***

The teachers' observations were that for higher attaining children mind mapping was useful, but children would probably continue to use the methods that they had already found successful.

The greatest impact was in the middle group of children where the use of mind mapping enabled them to think the project through; it enabled them to put their thought in a more coherent form. Mind mapping also helped the lowest achieving group to make connections, a skill that they needed to develop further.

### **Overall Mind Mapping**

- Increased the motivation and interest of the children in undertaking research activities
- Resulted in more coherent and organised writing
- Increased the amount of writing produced
- Helped the children to focus their thoughts
- Was enjoyable because it was based on very much their own work
- Appeared to appeal to boys in particular through the use of colour and gave them freedom to express their feelings and thoughts.

As one boy said:

“I like the challenge, because it is something new and it's always different. It's good too because no-one can cheat using your notes because they can't understand them”

The use of the highlighting in conjunction with the mind mapping enabled children to identify the relevant facts quickly and then use them in the mind maps. This made the eliciting of information very quick and easy.

### (c) **Mind Mapping in Information Skills Classes**

In addition to the use of mind mapping in the primary and secondary classes the project involved the secondary school librarian and the use of mind mapping as part of the S1 Information Skills course. The librarian assisted the secondary teachers but also made observations of the S1 classes.

#### **Outcomes**

The following are some of the observations noted when mind mapping was introduced in S1:

- It was popular with most pupils (more than half)
- Boys preferred it to girls
- Some girls liked to create mind maps but tended to “overload”- and use long sentences on branches rather than to stick to key words
- Boys liked to create patterns – maps were usually balanced (one side the same as the other)
- Boys liked the fact that they can get a quick result, and that all the information is on one page
- Boys liked more space to work with, therefore liked to complete mind maps on double page, or an A4 sheet
- Mind maps assisted recall of information more easily than linear notes

Pupils’ observations on the use of mind mapping included:

- Mind maps were fun to do
- Girls thought that they save you time studying
- When note taking, boys preferred to make diagrammatical notes like mind maps rather than write out sentences
- Both boys and girls preferred studying /revising from mind maps instead of reading from pre-printed texts, such as handouts from the teachers – although girls say they also liked to study from books

### **6. Project Conclusions**

Mind mapping proved to be a useful technique in both the primary and secondary schools, it encouraged children to, elicit, internalise, order and use information to produce a piece of functional writing, which they understood. It helped them to plan their writing more efficiently and increased the amount of written work produced.

The effect that mind mapping appears to have had on attainment in writing will require further research before any conclusions can be drawn. However, the use of highlighting and mind mapping together provided very powerful tools for children and young people to use for research and information gathering.

Other interesting outcomes of the project have been:

- Children and young people’s increased motivation and interest in research-based activities

- The personal achievement that children and young people had expressed when using mind mapping.

Most children and young people liked the “ownership” aspect of mind mapping and because they had created the maps themselves they could remember the facts more easily than when using traditional note taking techniques.

Mind mapping provided children with a more structured method for using information than linear note taking. The use of mind maps with the S1 classes by the librarian substantiated these findings.

The teachers and the librarian commented on the increased engagement of boys during writing activities when using mind mapping. Although the achievement of boys was not in the original action plan, the fact that all participating staff commented on the improvement of boys’ participation is worthy of mention.

Boys in particular said that they enjoyed the colour, the freedom and the personalised aspect of mind mapping. These cannot be the only reasons for mind mapping to have an affect on boys’ engagement with the writing process.

All staff noticed that there was an increase in participation peer assessment and more on task talking by boys when using mind maps. This was also noticed by researchers looking at gender and learning:

*“ teaching boys to share, listen to instruction and each other, let alone girls, is a prerequisite of enabling effective group membership and learning. They need lessons in co-operation. Teachers need to offer explicit teaching on how to collaborate through active intervention”*

Mind mapping provided conditions where boys interacted more, were more on task and there was an improvement in behaviour perhaps because the teachers provide more explicit instructions for the retrieval of information.

The Ofsted report July 2003, Boys Achievement in Secondary Schools said that:

*“Boys respond well when given help to organise their course work and to plan their revision. Boys often respond better to lessons that have a clear structure and a variety of activities, including practical and activity based learning, applications to real life situations and an element of fun and competition”*

Mind mapping provides boys with a clear-cut structure within which to work, it is active and has the elements of fun and competition.

In conclusion mind mapping has the potential to improve the thinking processes of children and young people and in particular improve the achievement of boys. Whether it will bring about a sustained improvement into levels of attainment of functional writing requires further longitudinal study and the consistent application of the technique across a cluster of schools.

## **7. Framework for Action**

### **7a. Wallace High School**

The secondary school has appointed a Principal teacher with responsibility for Literacy across the Curriculum. It is the intention to support staff to use mind mapping on other areas of the curriculum.

### **7b. Raploch Primary School**

The headteacher and teacher have delivered staff development on mind mapping at a whole school level. Staff will use mind mapping at all stages of the school, mind mapping has also been incorporated into other school activities including taking notes at Pupil Council's and Eco School Group meetings.

7c. Cluster Level

Staff development will be provided for all the cluster schools during this session on mind mapping and it will be taken forward as part of the cluster development plan for session 2004/5.

The above developments will provide the opportunity for further research to be completed on mind mapping by the schools and staff in the cluster before wider dissemination across the authority.

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### **The Project Team**

Learning and Teaching Scotland made recommendations as to the make up of the team for the Building Bridges project.

#### **Wallace High School**

**Catherine Burns** – Principal teacher English Language.

Catherine's remit was to oversee the implementation of the project within Wallace High School and to co-ordinate the secondary teachers

**Euan Geer** - recently qualified Science teacher

**Gill Bow** – An experienced English teacher.

**Fiona Pritchard** - The librarian who had a great deal of contact with S1 and S2 pupils

**Margaret Hunter** - Depute headteacher

#### **Raploch Primary School**

**Aileen Fergusson** – Depute headteacher with the responsibility of the implementing the project within the primary school and the liaison with the secondary school.

**Karen Stewart** – Teacher who completed the first part of the project.

**Diane McMillan** – Teacher who completed the first part of the project.

**Jenni Shineton** – Supply teacher who took the project forward from April –June 2004

**Stuart Paterson** - Supply teacher who took the project forward from April –June 2004

**Kitty McWilliam** – Education Officer with responsibility of the Building the Bridges project at authority level.

**Sue Ellis** – Primary Education Lecturer, Strathclyde University.

And all the pupils who participated.