

Research methods

The research was conducted mainly in the classroom but the teachers were released for two afternoons each term over the year to work with the children and record their responses in a personal and structured format. On these occasions supply cover was used to release the teachers. During these sessions the children were interviewed to discuss the findings from the questionnaires and these were recorded. For example questions from the self-esteem questionnaire asked "Do you often feel lonely in school?" and "Do you think of things about yourself that you would like to change?"

The children were also involved in one-to-one conferencing to discuss their mind-maps. Data were collected using qualitative and quantitative research methodology through classroom observations, assessments and interviews. We also had meetings to discuss the developments of the project and the children's progress, mainly conducted after school.

We researched books and articles relating to different learning styles and used primarily the work of Alistair Smith, Accelerated Learning in Primary Schools.

Conclusions

The comments from the children reflected a sophisticated level of analysis of their own learning. As an indicator of the success of the project, the children continue to use this style of recording for their planning and the organisation of their work. The teachers have also embedded this style of teaching into their practice and mind-mapping has transferred into every classroom so that all the children are confident in its usage and the process has grown in sophistication. The research project has also opened doors for further developments in teaching for learning and the school culture has become enriched with new ideas and opportunities.

Suggestions for further reading

Tony Buzan; Use Your Head (London 1974)

Tony Buzan: How to mind map (Thorsons 2002)

Daniel Goleman: Emotional Intelligence (Bloomsbury 1996)

Alistair Smith and Nicola Call; The alps approach (Network Educational Press Ltd 1999)

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National Teacher Research Panel

engaging teacher expertise

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Using mind-maps to raise standards in literacy, improve confidence and encourage positive attitudes towards learning.

Aims of the study

- To improve children's' confidence and develop a 'can-do' culture through the school.
- To develop a visual and kinaesthetic (VAK) approach to teaching and learning.
- To motivate pupils and teachers through a different approach to learning.

Context

The research took place at Newchurch Community Primary school, Warrington. It involved two groups of children from Year 3 and Year 5. These groups were composed of four boys and one girl from Year 3, and four boys and two girls from Year 5. Two teachers were involved in the project which was initiated, managed and written up by the Headteacher. In addition they were supported by a mentor from Chester College with whom they had termly meetings to assess their progress.

The study took place over a year beginning in September 2001 and ending in July 2002. The research was carried out during literacy lessons and other lessons where it was appropriate. The two teacher researchers were given designated time for observations and write-ups twice a term, but much of the research was conducted by observing children in their normal everyday lessons.

Summary of main findings

The two groups of children's work were assessed through the year for evidence of improved understanding, recall of information and quantity and quality of work produced. The evidence suggests that the pupils improved in all the areas identified. These were:

- improved concentration;
- staying on task for longer periods of time;
- improved questioning and answering during class discussions;
- becoming more self-reliant on their own resources; and
- improving independence.

Background

We are a one-form entry school of 190 children in an area of mixed catchment in Warrington, where children come into school ready to learn. We have supportive families and good pre-school provision. Although standards of reading and writing were satisfactory we had groups of children who were under-achieving according to previous attainment and predicted expectations. As the children moved up the school they appeared to be reluctant to apply themselves to improving the quality and quantity of their work. As Headteacher I asked two teachers to become involved in this project as I knew they would be interested in developing new ideas and would give a commitment to the research programme.

We identified two groups of children in Years 3 and 5, selected by the teachers on the basis of their knowledge of the children's previous attainments and a current assessment of their performance. The parents of these children were informed of the research project and the interest we were taking in the development of their child.

The project began with questionnaires to identify the children's preferred learning styles. We discovered these to be visual and kinaesthetic preferences. It may be argued that:

- children and adults with a visual preference will probably learn more effectively if the material is presented in a visual way. Visual learners often have good visual recall and teaching strategies which include displaying key words, for example, will help them, not only to remember them but also how to spell the words; and
- a kinaesthetic preference would be supported with activities which allow the learner to be active in their learning, for example, taking part in discussions, hot-seating of Historical characters, role-play using real and familiar situations. A learner with a kinaesthetic preference will also learn more effectively if they have an emotional engagement with their learning. So teachers will try to ensure that the work is relevant, there are plenty of connections with other learning and that the children feel a high degree of involvement in their work.

The children were also asked questions about their views of themselves as learners and their confidence and sense of self-esteem in the classroom. The results for the two identified groups were very low, so, we were also concerned that the characteristics of emotional intelligence should be addressed and that the children should develop the motivation, persistence and optimism to see themselves as successful learners.

Teaching processes and strategies

We aimed to improve the children's learning and emotional development by using specific teaching and learning practices. These were:

- Mind- mapping: A visual construct using a radial image to help to organise thinking, develop memory and provide a format for connecting the learning.
- Pole-Bridging: A process of discussing the mind-maps to help understanding through self-explanations, predictions and informed hypothesis.

At the beginning of the research project the children were taught how to mind-map. The same process was used in both classes. An example of this would be:

- a teacher- lead session at the beginning of a topic to find out what the children already know and connect the learning;
- the teacher leads the class in a brain-storming session at the start of a topic. As the children remember information and show their knowledge, this is written on the board;
- the teacher then asks the children to organise the information into key areas, four is usually a manageable number. This can be discussed by the children in groups. The class come to decisions about the key words for organization and the teacher writes these on the board, underlining them with a different colour;
- the next stage involves the children categorizing the information under those key headings, these can also be underlined using the appropriate colours for reference. The teacher puts the topic word or phrase in the middle of a piece of paper and then draws branches from the centre with the key words written on the branches. From these branches, twigs are drawn and the information is collected in the appropriate section; and
- connections can then be made between different pieces of information and children are encouraged to see these connections and the teacher may link this to future learning.

It is a model which we find very useful in a variety of contexts.

In this way, the children in both classes were used to this style of working for recording information, recalling facts, planning for a story, planning for a class assembly or presentation. After both classes were taken to an environmental centre, on their return to school they were asked to use a mind-map to recall the information from the visit. The children were then shown how to improve their learning by making connections between the twigs radiating from the main branches. This process encouraged consolidation and further enquiry. For example the children made connections which involved food chains and predators. They were able to see how information linked together to give a bigger picture. We were greatly encouraged to observe how quickly all the children were motivated to start their mind-maps and stayed on task for much longer than would normally be expected.

The teachers would use a mind-map at the beginning of a topic and this would be displayed in the classroom. At weekly intervals the teachers would refer to the mind-map and discuss with the class the new information they had learned. This would then be added to the mind-map in a different colour so that the children could see their new learning.

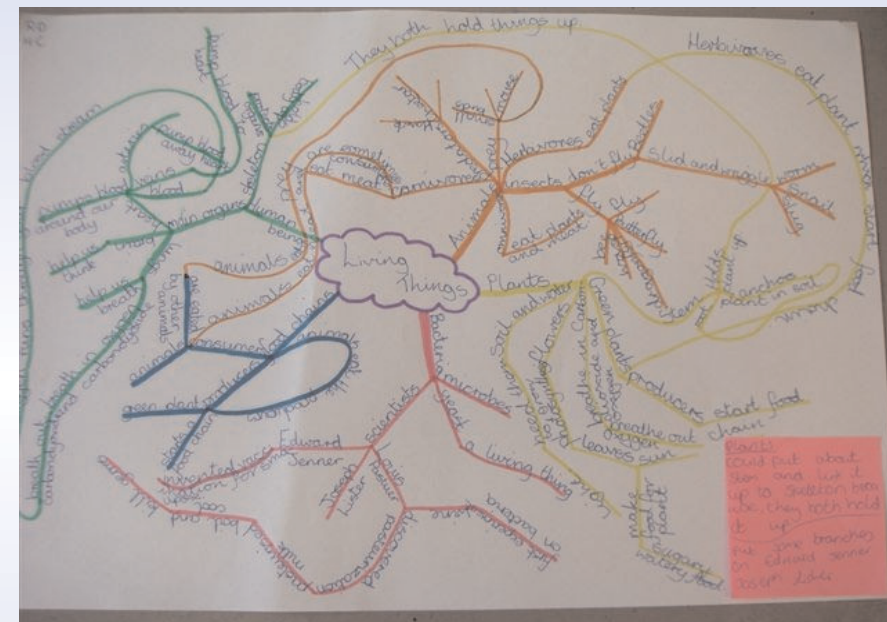
All the children were encouraged to use this process for:

- Planning their stories- each branch would represent a different aspect or section. For example, one branch would be for the characters, one branch for the setting, one branch for the development of the story-line, a further branch might be used for key vocabulary or points of interest to be included.
- Recall of information, connecting the learning, and readiness for new learning.
- Creating individual profiles- children making their own personal mind-maps including their families, their hobbies and interests, their skills, their hopes etc
- Self-evaluation of learning through the week- this could be used as a homework tool to help children evaluate their learning during the week.

Findings

The evidence suggests that the pupils improved in all the areas identified. Not only did their work rate improve but their attitude and self-esteem enabled the group of Y5 children to achieve considerably higher standards than were expected at the beginning of the year, in their Key Stage 2 SATs. The teacher in Y5 felt that

"The use of mind maps has enabled the children, who had a variety of barriers to their learning, to produce a finished piece of work without having to conform to preset expectations of what a 'good' piece of work looks like. They are keen to use this tool and they know how it helps them to learn. It would appear that mind-mapping has allowed all the children to produce a piece of work from a starting point which is equal."



In interviews with their teacher, the children made the following observations about mind-maps which they had completed independently.

"You can remember what you did just by looking at it."

"It helped me to remember more."

"If you put stuff in the wrong place you can easily rub it out."

"All you have to do is look at the branches and you learn some more."

"It looks good and I have written a lot."

"You can read it and remember stuff."

"I close my eyes and had the thoughts I wanted to write."

"You get to see all the stuff you did."

"It was good because sometimes I get mixed up when I do stories-it would take ages to do a story."

"When we didn't write about it for ages, I could see this and it all came back to me."

As the teachers talked to the children about their work, they commented on how well the children were able to organise their thinking and make connections between the 'branches'. They said that children were turning their mind-maps around to orientate themselves and talk more about their headings. The teachers were able to use the children's own headings to encourage them to expand their thinking, relating many aspects together for their writing. One reluctant writer felt it would have been better to have used colour to identify the different branches as he had produced so much information, it might be difficult to follow. All the children in the groups felt positive about completing their mind-maps and showed an eagerness to begin their tasks which was not normally present in other aspects of their work. Many of the groups were keen to produce work which did not require many correctly spelled sentences. One child settled to his work immediately and remained on task throughout the session which was a significant change in his behaviour. He felt the mind-maps were "fun and not like real work."