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Children's Services, Central Area

Educational Psychology and Specialist Support

Research Briefing Paper for Schools, Settings and Services

These Research Briefing Papers aim to:

- **Provide a summary of up to date research on topics relevant to schools, settings and services**
- **Make research studies published in journals accessible to practitioners**
- **Provide a foundation for those with similar interests to discuss topics relevant to their work**
- **Contribute to developing a research ethos within Norfolk Children's Services**

We are pleased to receive feedback about Research Briefing Papers and suggestions for future topics. Please contact James Thatcher at The Terrapin, telephone 01603 671400.

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Research Briefing Paper 1, March 2008

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We are grateful to the British Psychological Society for allowing us to reproduce items from their free Research Digest service: see www.researchdigest.org.uk/blog for more details and to sign up.

1. **Helping children thrive at school: The effectiveness of Nurture Groups**

Sanders, T. (2007) within Educational Psychology in Practice, volume 23, Issue 1.

Summary by Marie Osborn, Educational Psychologist

What is the article about?

This article is a small-scale evaluation of 3 schools who were supported to establish nurture groups* by the Hampshire Education Authority. The study used pre and post intervention data collected through use of the Boxall Profile (Bennathan & Boxall, 1998) and also through interviews with pupils, staff and parents and naturalistic observations.

- The results of this study generally support the national research data in finding gains, some significant, in children's social and emotional skills development (as measured within strands of the Boxall profile), academic gains – improved motivation and independence and improved social interactions and willingness to follow adult requests.

- The study also makes reference to some areas that have least successful impacts at this stage (review after two terms) such as playtime/lunchtime behaviour and relationships (children tended to remain as a group and were more boisterous) and also that children in the groups could tend to boast to their peers about the group.

- Other implications suggested from this review highlighted the importance of having a whole staff approach to training and access to the group (e.g. having other children join at snack times), being prepared to be flexible in the curriculum and recognising that play and social skills development was as important as national curriculum demands.

- To find out more about what nurture groups are, see some of the suggested websites/articles below.

Why is it important?

The national focus of research into nurture groups over the past ten or so years suggests that these groups, properly established, can have a significant positive impact on supporting children's behaviour and social and emotional skills development. There is also evidence to suggest that the success of the children in these groups can have a wider positive impact on whole school development –including having an impact on policy development.

Beyond this, the impacts of successful groups can be felt in the wider Children's Services contexts, in reducing the necessity statements of special educational needs for children presenting a high level of needs. Children are also less likely to need a specialist placement and can therefore be included within their local mainstream schools.

Where can I find out more?

Bennathan, M & Boxall, M (1998) The Boxall profile: A guide to effective intervention in education of pupils with emotional and behavioural difficulties. Association for Workers for Children With Emotional and Behavioural Difficulties.
Boxall, M (1976) the nurture group in the primary school. Therapeutic Education, 4 (2), 13-18.
Sanders, T. (2007) Helping children thrive at school: The effectiveness of Nurture Groups. Educational Psychology in Practice. Volume 23, Number 1, March 2007. Routledge.

Nurture groups are being established in Norfolk schools and some staff are undergoing training presently. The following national websites and links may also be useful:-

www.nurturegroups.org/
www.dfes.gov.uk/behaviourimprovement/nurture/

2. **How to study**

Dr. Nate Kornell (http://nkornell.bol.ucla.edu/) of UCLA, with the fifth article in our ongoing series of guest features.

This item originally appeared in the British Psychological Society's Research Digest, Issue 109. See www.researchdigest.org.uk/blog

Although as students we have all spent countless hours studying, we receive little guidance in how to study effectively. There are no shortcuts to effective studying, but in general, being actively involved in learning makes studying effective. Some specific points are obvious: pay attention in class, do the reading, don't procrastinate, while others should be obvious but aren't: study in a quiet place without distractions, don't send text messages during class, ask questions if you are confused.

Here are three unintuitive but very effective ways of studying based on findings from psychological research:

Space your study. We humans, and other animals as well, learn more by spacing study sessions out in time than we do by massing them together (e.g. by cramming). For example, read a chapter at one time, and review it at another time; if you are studying a set of flashcards, study it every day, instead of intensely all at once. My own research has shown the benefits of spacing in learning about artists' styles, learning vocabulary words using flashcards, and learning physics concepts, among other topics. If you don't think spacing will work for you, think again-spacing is virtually always effective, even when it feels counterproductive.

Ask yourself questions. Testing oneself while studying has two advantages: First, it requires retrieving knowledge from memory. Doing so creates powerful memories that are not easily forgotten. Second, self-testing allows you to diagnose your learning. If you test yourself before your exams, you can identify and rectify your weaknesses beforehand, instead of

regretting them afterwards. A warning though: Self-testing when the information is still fresh in your memory, immediately after studying, doesn't work. It does not create lasting memories, and it creates overconfidence.

Summarize and integrate. After going to class or reading a chapter, try to summarize the main points, and think about how they relate to the topic at large and to your own experience. This process, known as knowledge integration, creates lasting memories, and has the added benefit of requiring you to recall the information. One way to do so is to "learn by teaching"-that is, tell others about what you have learned, including fellow students or, if you don't mind being boring, friends and family. Explaining requires integration and summarization, and it is an excellent way to expose the gaps in your own knowledge.

The steps above might seem burdensome, but the long-term benefits far outweigh the costs. A student looking to minimize effort would do well to follow them.

3. **The secret to remembering material long-term**

Rohrer, D. & Pashler, H. (2007). Increasing retention time without increasing study time. Current Directions in Psychological Science, 16, 183-186. http://dx.doi.org/10.1111/j.1467-8721.2007.00500.x

This item originally appeared in the British Psychological Society's Research Digest, Issue 103. See www.researchdigest.org.uk/blog.

The secret to remembering material long-term is not to cram and over-learn but rather to periodically review what you've studied. That's according to Doug Rohrer and Harold Pashler who have identified an intriguing relationship between how long to leave it before returning to previously studied material, and the ultimate duration for which you want to remember it for.

The technical definition for 'over-learning' is any time you spend continuing to study material which you have already mastered. So, for example, once you've correctly recalled a list of French vocab without any errors, any additional time you immediately spend learning that vocab is over-learning. The evidence shows that time spent over-learning is only beneficial over the short-term. For example, one study found over-learning was advantageous when tested a week later, but not when tested four weeks later.

According to Rohrer and Pashler, if your aim is long-term retention, time spent over-learning would be better spent reviewing material at a later date. Just how much later depends on how long you want to remember the material for. Their research suggests the optimal time to review material is after a period which is 10 to 30 per cent of the time for which you want to remember it for. Reviewing too soon, or too near the later test will be associated with poorer learning. For instance, one study that tested

retention after ten days (always measured from the second 'review' session) found that from a range of 5 minutes to 14 days, the optimal time for review was after one day. Another study that looked at retention over 6 months, found the optimal time for reviewing material was one month.

The researchers say their observations have implications for the design of textbooks. For example, most maths books tend to end each chapter with numerous problems prompting over-learning of that chapter's material. It would be more effective if a variety of problems relevant to several chapters were posed at the end of each chapter so that students were continually reviewing material studied in earlier chapters.

4. **Using Cognitive Behaviour Therapy with children**

SQUIRES, G (2001). Using Cognitive Behavioural Psychology with Groups of Pupils to Improve Self-Control of Behaviour, Educational Psychology in Practice 17(4), 317-335.

Summary by Ian Mann, Educational Psychologist

The author describes the positive effects of a six-session programme of group intervention, based on CBT and intended to improve pupils' behaviour, or more specifically their self-control of behaviour. Experimental methods are straight forward, for example in the use of pre and post-intervention ratings completed by teachers and subject pupils. Positive changes were reported to be long lasting, and reportedly extended "beyond the classroom to other aspects of the child's functioning".

Of particular use to Central Area EPs is the quite detailed breakdown of activities undertaken in each of the 6 sessions. At a time when opportunities for more therapeutic work are increased, this breakdown provides what I have found to be a very useful structure from which to base similar interventions of my own.

5. **Investigating the role of genes in girls' and boys' science ability**

Haworth, C.M.A., Dale, P.S. & Plomin, R. (In Press). A twin study into the genetic and environmental influences on academic performance in science in nine-year-old boys and girls. International Journal of Science Education. http://www.informaworld.com/smpp/title~content=t713737283

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This item originally appeared in the British Psychological Society's Research Digest, Issue 100. See www.researchdigest.org.uk/blog.

Harvard president Larry Summers caused a storm in 2005 when he suggested part of the reason women are under-represented in science is because of innate, biological differences between the sexes.

Now, for the first time, researchers in London have looked at the amount of genetic and environmental influence on girls' and boys' science ability. Their finding: nine-year-old girls are just as good at science as

nine-year-old boys, and genes and environment affect the science ability of both sexes in just the same way, and to just the same extent.

Claire Haworth and colleagues looked at the science ability (as assessed by teachers) of a sample of 2,602 pairs of 9-year-old twins. Some of the twins were identical, meaning they shared all the same genes; the other twins were non-identical, meaning they shared 50 per cent of their genes, on average, just like non-twin siblings.

The bigger the role played by genes in nine-year-olds' science ability, the more similar (to each other) pairs of identical twins should be in science ability, relative to non-identical twins. And if genes are more important to the science ability of girls than boys, then this difference between identical and non-identical twins, in terms of similarity of science ability, should be greater among female twins than among male twins.

In fact, the researchers found the boys and girls were equally good at science on average, and that genes accounted for about 60 per cent of variation in science ability in both sexes. The remaining variation in science ability was explained, for both sexes, by non-shared features of the environment. These are experiences that have uniquely affected one twin but not the other, even though both siblings have mostly been raised and taught together.

The researchers said their findings "may be useful at a practical level for teachers to recognise that differences among children in their science performance are not just due to differences in effort - genetic sources of differences are also important."

Moreover, the researchers said that, in the future, specific genes that account for the heritability of science ability may be discovered, thus allowing scientifically weaker children to be helped before problems occur.

6. **Children with autism are immune to contagious yawning**

Senju, A., Maeda, M., Kikuchi, Y., Hasegawa, T., Tojo, Y. & Osanai, H. (In Press). Absence of contagious yawning in children with autistic spectrum disorder. Biological Letters. http://www.igso.net/~gbryant/yawning.pdf (free, full text).

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This item originally appeared in the British Psychological Society's Research Digest, Issue 100. See www.researchdigest.org.uk/blog.

Have you ever noticed that yawning is so contagious it can spread round a room like a Mexican wave? Scientists still aren't in agreement as to why this happens but one idea is that the phenomenon depends on our capacity for empathy. This finds support in a new study showing for the first time that children with Autistic Spectrum Disorder, in whom empathy is believed to be

impaired, are immune to the contagious effects of yawning.

Twenty-four children diagnosed with autism spectrum disorder - mostly boys aged between 7 and 15 years - and twenty-five age-matched non-autistic children, watched a series of 7-second videos showing people yawning. Control videos showed people opening their mouths but not yawning. Between each video, one-minute long silent cartoons kept the children's attention.

Footage of the children taken while they were watching the videos showed, as expected, that the non-autistic children yawned more during and after seeing a video of a person yawning, than after watching a control video. By contrast, the children with autism yawned no more after seeing a yawn video than after a control video - they appeared to be immune to the contagious effects of yawning. This remained true even after the researchers controlled for the effects of age and intelligence.

Past research has found that seeing the eye region of someone yawn is key to the yawn's contagious effects. So perhaps the fact that people with autism are known to focus more on the mouth region of people's faces, rather than the eyes, could partly explain the current findings.

Atsushi Senju and colleagues said their results "support the claim that contagious yawning and the capacity of empathy share common neural and cognitive mechanisms." They added it would be interesting for future research to look at whether contagious yawning is impaired in other conditions in which empathy is compromised, such as psychopathy or frontal-temporal dementia.

7. What can psychological research offer to multi-agency team working?

Billington, T. (2006) Psychodynamic theories and the 'science of relationships' (Bion): A rich resource for professional practice in children's services". Educational and Child Psychology, 23(4), 72-79.

Summary by Sarah Hatfield, Educational Psychologist

In his recent article "Psychodynamic theories and the 'science of relationships' (Bion): A rich resource for professional practice in children's services", Tom Billington (2006) reports the contribution that psychodynamic theories can offer towards an enhanced understanding of the role of interpersonal beliefs and emotions in professional practice within Children's Services. Billington (2006) suggests that the psychodynamic paradigm can provide a useful conceptual base for analysing both inter- and intra-personal interaction. He discusses the contribution that psychodynamic theories have made to the development of theoretical understandings of the emotional lives of children and suggests how this conceptual basis could usefully be extended to a deeper understanding of professional's own practice. Billington also suggests that knowledge of psychology can offer a useful contribution to the understanding of the linkages between learning and feeling and suggests a further useful application of this knowledge may be to enable the development of "shared theoretical repertoires" between professionals. This would seem a potentially important area for psychologists work in the current creation of Children's

Services.

Billington clearly describes key concepts from Segal, Winnicott and Bion, so that even readers with little psychodynamic knowledge can understand the conceptual basis of the study. He uses his own experiences of working as an educational psychologist to illustrate his hypotheses and links this practical experience back to his chosen psychodynamic theories. This enables the reader to clearly understand his thinking and provides a good example of how an educational psychologist can demonstrate a distinctive psychological contribution, linking psychology to practical considerations around intervention. Billington's paper also describes the ethical implications for professionals from his chosen frameworks, therefore offering the reader a further demonstration of the implications of psychodynamic frameworks and a suggestion of further research and exploration. Billington writes clearly and concisely, enabling his paper to be accessible to a wide range of readers. In terms of research design it is probably best reviewed as a narrative report but offers an important contribution to factors that must be considered for successful interpersonal working within multi-agency teams.

8. **What makes a multidisciplinary team work well?**

Fay, D., Borrill, C., Amir, Z., Haward, R. & West, M.A. (2006).Getting the most out of multidisciplinary teams: A multi-sample study of team innovation in health care. Journal of Occupational and Organizational Psychology, 79, 553–567. http://tinyurl.com/ygvyng

This item originally appeared in the British Psychological Society's Research Digest, Issue 83. See www.researchdigest.org.uk/blog.

The benefit of having a multidisciplinary team filled with members who have a diverse range of skills and expertise seems obvious – just look at the Fantastic Four. And yet past research on this issue has been inconsistent, with some studies even suggesting that a team's diversity can have a negative effect (http://tinyurl.com/ydmsea). One apparent drawback is that team members with shared backgrounds tend to organise themselves into opposing cliques.

Now Doris Fay and colleagues have proposed that the benefit of being multidisciplinary is dependent on whether certain group processes are working well.

The researchers looked at the quantity and quality of innovations introduced by 70 Breast Care Teams and 95 Primary Health Care Teams working in the UK. The number of professions represented in each team varied from 4 to 12 (including nurses, surgeons and psychologists), and this was taken as the measure of how multidisciplinary a team was.

Contrary to the researchers' expectations, teams that were more multidisciplinary tended to have introduced more innovations over the previous year, regardless of whether effective group processes were in place. Crucially, however, the quality of the innovations (e.g. as measured by their benefit to patients) was dependent on group processes.

Teams with more professions only introduced innovations of greater quality when effective group processes were in place – including all team members being committed to the same cause; everyone in the team being listened to; the team reflecting on its own effectiveness; and there being plenty of contact between team members.

“From a practical perspective, the most eminent question is how to establish team processes that help capitalize on multidisciplinary”, the researchers concluded.

A shortcoming of the study, acknowledged by the researchers, is its cross-sectional methodology – it’s possible that generating better quality innovations has a beneficial effect on a team’s group processes, for example by engendering greater team cohesion.

9. Children see obesity as contagious

Klaczynski, P. (2008). There's something about obesity: Culture, contagion, rationality, and children's responses to drinks "created" by obese children. Journal of Experimental Child Psychology, 99, 58-74. http://dx.doi.org/10.1016/j.jecp.2007.08.005

Author weblink: http://www.unco.edu/cebs/psychsci/faculty/klaczynski.html

This item originally appeared in the British Psychological Society's Research Digest, Issue 108. See www.researchdigest.org.uk/blog

Young children see obesity as if it were a kind of contagious illness. That's according to Paul Klaczynski who says his research helps explain why the stigmatisation of fat people is so prevalent, and why obesity prejudice is committed by children as young as three.

Dozens of seven-year-old and ten-year-old children, some White American, some Chinese, were asked to sample drinks from an imaginary company that they were told had recruited other children to help with the development of new products. Each drink came in a bottle with a label showing a photo of the obese or average-weight child who had helped develop it, together with made-up nutritional information.

All the bottles contained the same fruit juice mix, but the children, old and young, White and Chinese, rated the drinks developed by obese children as having a less pleasant taste and as more likely to cause sickness. Crucially, this pattern of ratings was more pronounced if, before tasting the drinks, the children had been told an unrelated story about a child contracting a contagious illness.

Also, later on, when the children were tricked into thinking that they had previously been told that the ill child in the story was one of the drinks creators, they were more likely to falsely recall that it was one of the

obese children, as opposed to one of the average-weight children.

"Children, likely at an implicit level, recognise the similarities between the symptoms of obesity and those of known contagious illnesses and, at a more explicit level, perceive 'something wrong' with the obese," Klaczynski concluded.

10. Gesturing unlocks children's maths skills

Broaders, S.C., Cook, S.W., Mitchell, Z. & Goldin-Meadow, S. (2007). Making children gesture brings out implicit knowledge and leads to learning. Journal of Experimental Psychology: General, 136, 539-550. http://dx.doi.org/10.1037/0096-3445.136.4.539

Author weblink: http://www.psych.northwestern.edu/~broaders/

This item originally appeared in the British Psychological Society's Research Digest, Issue 105. See www.researchdigest.org.uk/blog

Encouraging children to gesture when they are working on maths problems helps them benefit more from subsequent maths tuition. Sara Broaders and colleagues, who made the observation, say this is because gesturing activates children's implicit maths knowledge, which they are not yet able to consciously access or talk about.

In an initial study, 106 children aged nine to ten years were asked to solve problems like 6 + 3 + 7= ? + 7 and talk through their solutions. Later on, some of the children were also told that they must use their hands when explaining their answers. All the children got the maths problems wrong, but the hand movements of the children told to gesture revealed they had insight into new, often appropriate strategies, which they hadn't previously spoken of.

For example, the researchers said a sweeping movement of a child's palm, first under the left, then under the right side of the problem revealed that they understood both sides of the equation needed to be the same.

A second study with 70 children showed that the activation of this implicit knowledge in gesture has actual practical benefits. Again the children were presented with maths problems and asked to explain their answers; again some were told they must gesture when explaining, while others were told not to gesture. As before, the children told to gesture revealed novel strategies in their hand movements, even though they continued to get the answers wrong. Next, the children received some tuition in how to solve the problems. Critically, in a final test, the children previously told to gesture solved an average of 1.5 more problems correctly than the kids told not to gesture - in other words they seemed to have benefited more from the tuition.

The researchers concluded that being told to gesture reveals "previously unexpressed implicit knowledge that, in turn, makes learning more likely".

11. Philosophy for kids

Topping, K.J. & Trickey, S. (2007). Collaborative philosophical inquiry for school-children: Cognitive gains at 2-year follow-up. British Journal of Educational Psychology, 77, 787-796. http://www.ingentaconnect.com/content/bpsoc/bjep/2007/00000077/00000004/art00003

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This item originally appeared in the British Psychological Society's Research Digest, Issue 104. See www.researchdigest.org.uk/blog

Teaching children the art of collaborative philosophical inquiry brings them persistent, long-term cognitive benefits, according to psychologists in Scotland.

Keith Topping and Steve Trickey first reported the short-term benefits of using "Thinking through Philosophy" with children in an earlier study.

One hundred and five children in the penultimate year of primary school (aged approximately ten years) were given one hour per week of philosophical-inquiry based lessons for 16 months. Compared with 72 control children, the philosophy children showed significant improvements on tests of their verbal, numerical and spatial abilities at the end of the 16-month period relative to their baseline performance before the study.

Now Topping and Trickey have tested the cognitive abilities of the children two years after that earlier study finished, by which time the children were nearly at the end of their second year of secondary school. The children hadn't had any further philosophy-based lessons but the benefits of their early experience of philosophy persisted. The 71 philosophy-taught children who the researchers were able to track down showed the same cognitive test scores as they had done two years earlier. By contrast, 44 control children actually showed a trend towards a deterioration in their inferior scores from two years earlier.

The philosophy-based lessons encouraged a community approach to 'inquiry' in the classroom, with children sharing their views on Socratic questions posed by the teacher. The children's cognitive abilities were tested using the 'Cognitive Abilities Test', a measure which has been found to predict children's performance on external school examinations.

"Follow-up studies of thinking skills interventions are very rare in the literature, so this finding is an important contribution," the researchers said.