

International Boys' Schools Coalition

Boys and Brain Conference

Scotch College, Melbourne, Australia

October 2, 2006

Conference Report

On October 2 2006, Scotch College hosted the inaugural conference for IBSC schools in Melbourne and area. The theme for the day was 'Boys and Brain', and we had a stimulating day of presentations and enthusiastic discussions. More than 200 teachers from Victoria and elsewhere attended.

The keynote speaker, Mike Nagel of the University of the Sunshine Coast, kept us enthralled with a "journey through the brain" that emphasized the differences in developmental timelines between adolescent boys and girls. We explored "learning windows", synapses, myelination, synaptic pruning, how and where the brain processes emotions, what happens when our serotonin levels fall or rise, why fidgeting is both normal and OK - and much more. We left his session full of ideas and questions about how to use these insights in the classroom.

After morning tea participants dispersed to smaller groups that rotated through three smaller forums. The speakers at these were Mike Nagel (expanding on the implications of his keynote address), Joseph Ciorciari (a neuroscientist from Swinburne University reporting on his research findings) and Jennifer Jahnke (a consultant on linking neurology and learning by means of a holistic curriculum planning approach).

Dr. Nagel developed his earlier material, and suggested a range of practical implications for boys' education, including:

- the importance of significant role models
- the need for high expectations
- the role of a good learning environment
- the crucial role of emotional 'tags'
- the importance of diet, rest and exercise

He spent some time discussing how best to handle risk-taking in adolescent males, and provided a list of great resources. He discussed why boys need more space and room than girls; why fluorescent lighting is less than ideal; why using your hands while you are listening (fidgeting?) actually helps listening; and why boys need regular intervals when they can get up and move around. He outlined the links with emotional intelligence. He paid particular tribute to the work of Eric Jensen, from San Diego.

Joe Ciorciari's presentation focused more on the 'science behind' than the 'implications of' our understanding of neurophysiology. He surveyed the biological basis of personality, and outlined the ways in which we gained our information about brain functioning. He offered a significant quote from *Scientific American* (2005): "the brains of men and women might achieve their equivalent general intelligence *in somewhat different ways*". He dealt with the damaging impact of long term emotional stress; but also noted that short term moderate stress may help some males to learn!

Jennifer Jahnke's presentation moved us away from brain function to curriculum planning, and drew heavily on the work of Robert Marzano's *Dimensions of Learning* model. She drew links the neuroscience

surveyed earlier. Marzano's work draws heavily on research evidence, so it is less likely to be a passing fad than some other curriculum organizers. Useful ideas included a distinction between *declarative* and *procedural* knowledge, an emphasis on the *use* of knowledge (rather than its mere repetition) through tasks such as system analysis, and an emphasis on *metacognition*.

The last session of the day consisted of discussion groups. Participants were grouped in to teaching areas, and they pursued five tasks and questions:

- list the *implications* of the day's presentations
- list the implications for *student management*
- list some things we should do *differently* from now on
- are there any implications for VELs (the new Victorian standards framework)?
- suggest some ideas for a follow-up conference

Their suggestions were collated by an online survey. Copies of the main conclusions can be obtained on request from syd.boydell@scotch.vic.edu.au. Interesting points included:

- redesign/renovate classrooms
- fix the appalling typical adolescent diet!
- pay much more attention to emotional issues (including too much stress)more water availability
- allow fidgeting (maybe introduce small objects to fidget with!)
- use peer teaching lots more; combine with less teacher talk/lecturing
- more regular exercise
- more reflection by teachers on lessons – including observation from colleagues

The next conference should include:

- lots of real case studies
- less talking more active learning
- how can we work with parents on many of these issues
- building practical and workable connections between learning styles/preferences and neuroscience
- the role of the *Rock and Water* course in this context

Keynote Speakers

Dr Michael C Nagel
(BEd, MEd, PhD)

Dr Nagel is an educator, motivator, researcher, author, mentor and parent. Over the last three decades he has worked with children on three continents as a teacher and behaviour specialist. Currently Dr Nagel researches and teaches at the University of the Sunshine Coast across various areas including cognition and learning, human development and early learning, neurological development in children, neurologically based pedagogy and the middle years of schooling. Mike has presented papers, workshops and seminars nationally and internationally and his insights linking neurology and education have been well received by parents and educators alike and praised for linking theory with the every day realities of raising and working with children. His primary goal in all that he does focuses on enhancing the total school environment for boys and girls. Mike draws much of his insights and ideas from over twenty years of practical educational experiences, contemporary neurological research and from watching his two children, Madeline and Harrison grow and learn.

Keynote Address

'Snakes and Snails and Puppy Dog Tails': Just What Are Boys Brains Made Of?

Neurology and education have, in the last decade, begun to overlap, and the overlap is providing new insights into the workings of the human brain. Researchers can now actually watch the human brain at work and map out how it develops. This merging of neurology and education has also reinvigorated a debate regarding brain differences across each gender and how boys and girls learn and behave differently. This presentation will look at neurological development in children from birth through adolescence and provide evidence and insights into aspects of a 'gendered brain', specifically those characteristics that impact on the learning and behaviour of boys. The overall purpose of this endeavour is to offer teachers an opportunity to engage in a user-friendly dialogue about what they may encounter when interacting with their student's young and maturing minds every day.

Here's what some have said about Dr Nagel's presentations:

Crèche & Kindergarten Keynote Address Brisbane

- *Michael touched areas of childhood development that has given me a light bulb moment.*
- *Excellent! Entertaining and educational (very easy to adopt concepts to our setting).*
- *Fantastic speaker- lots of usable information and relevant. Able to generate enthusiasm. More! More!*
- *Very interesting! Michael has made me think more carefully about this issue. An excellent and entertaining speaker.*
- *Brilliant! A very inspiring speaker who has a wealth of knowledge to share.*

Early Childhood and Middle Years of Schooling Regional Workshops (Qld)

- *"Very motivating... Would love to hear and know more."*
- *"Fascinating information, fun activities, pleasant manner, well organised."*
- *"Great session...challenged me to re-think what I do."*
- *"Would love to follow this up with another workshop with more information and useful strategies."*
- *Really interesting and heaps of information and possible impacts in future understanding about how children behave and learn.*
- *"This session should be compulsory for all teachers and parents."*

International Middle Years of Schooling Conference – Adelaide

- *Michael provided some thought provoking information. Excellent ideas for teachers!*
- *Informative and dynamic and entertaining!*
- *Lots and lots of practical and relevant info that I can use tomorrow in my classroom teaching!*
- *New information – very relevant to classroom practice, great presenter, keen to read his book when published*

Rick Hodgson – Head of Junior School (Emmanuel College, Gold Coast)

- *"I just wanted to thank you for the wonderful presentation you brought to our staff...I have been accosted by a larger number and more diverse range of staff than ever before telling me how much they appreciated your presentation...I certainly hope that there will be further opportunities to work with you so that our curriculum and pastoral welfare may continue to grow and develop guided by your wise insights".*

Jennie Jahnke

Jennie Jahnke is a practising secondary teacher and Head of Library at a Brisbane Secondary School. She has wide experience in secondary schools in both management and teaching positions in the Australian Capital Territory, Queensland and Christmas Island, Indian Ocean. Her versatility as an educator has been influenced by teaching in a range of faculties including English, Journalism and Physical Education.

Recent training in Denver, Colorado, in the Dimensions of Learning program has inspired her to spearhead school pedagogical development to improve student achievement by implementing a whole school vision to focus on the attributes of students as lifelong learners. She sees the Dimensions framework and Habits of Mind as important vehicles for Middle School reform.

Jennie presents workshops and seminars in the Dimensions framework, Information Literacy and integrating ICTs into the curriculum. As an information professional, she has an ongoing commitment to the sharing of knowledge and engaging and challenging learners within a supportive, information rich environment.

Linking Neurology and Learning

In the last decade, frameworks for learning have been greatly enhanced by neurological research. Dimensions of Learning (DOL), is one such framework. DOL asks teachers to examine their practice in terms of traditional teaching styles and the needs of the 21st century learner.

This forum offers participants an opportunity to engage with the philosophy of DOL with a view to enhancing the overall learning environment for students and teachers alike.

Dr. Joseph Ciorciari BAppSc(SIT) PhD(SUT)

Program Convenor for Psychophysiology (Undergraduate program)
Biomedical Sciences and Psychophysiology Lecturer
Swinburne University of Technology
Faculty of Life & Social Sciences
Biology of Individual Differences Research Unit Leader
Brain Sciences Institute

Biography

Dr. Joseph Ciorciari is a lecturer at Swinburne University of Technology and teaches into the Biomedical Sciences and Psychophysiology undergraduate and postgraduate programs. He is also the coordinator for the Psychology/Psychophysiology courses. As a Medical Biophysics Science graduate himself, he pursued his interest in the cognitive neurosciences by completing a PhD entitled "Topographic distribution of brain electrical information associated with **schizophrenia**." This research was completed at the Mental Health Research Institute (MHRI) in Melbourne.

The principle focus of his more recent research has been to investigate the **biological basis of personality** and various **personality disorders**. Brain electrophysiology techniques such as **photic driving** and **EEG coherence** and **neuropsychological measures** have been applied in the investigation of **gender, emotional intelligence, personality** traits, families with a history psychosis (schizophrenia) and **substance abuse** in schizophrenia. He was also involved in a world first study into the psychiatric condition known as **Dissociative Identity Disorder (DID)**, previously known as **Multiple Personality Disorder**. This disorder is associated with a long history of traumatic abuse in childhood. DID patients may have a host personality that change into other personalities called alters. This research demonstrated clear functional differences in brain function for each alter, not achieved in the control actor group.