Understanding and meeting the needs of boys in the Montessori classroom

PHOTO: ABSOLUTE ANGELS

Chris Manville looks at the differences in the way boys interact with their environment and suggests practical ways these differences can be provided for in the Montessori classroom.

It has been widely reported in recent years that girls are outperforming boys in all areas of learning and development by the end of the Foundation Stage. Whilst I do not intend to address this issue specifically in this article, I do think it is important to consider whether we are doing everything we can to help children fulfil their potential. I believe wholeheartedly in the ideal of equality of opportunity but, as with all aspects of diversity, this does not mean treating everyone in exactly the same way. What is important is to consider the individual needs, interests and learning styles of each child and match our provision to them. This is as true for gender as it is for SEN or ethnic diversity. Throughout this article I will be drawing distinctions between boys and girls. It is very difficult to do this without being accused of exactly the type of stereotyping that I will be arguing against. I would like to be clear from the start that when I use the terms 'boys' or 'girls' I am referring to children with the characteristics often associated with each gender, and not to all boys or all girls.

What is important is to recognise that boys explore and interact with the environment in ways that are different to girls. These differences need to be acknowledged, valued and provided for, to ensure that boys are not switched off from learning before they even enter statutory education.

All too often boys are forced to fit into an approach to learning that is more suited to girls. Expectations such as sitting quietly on a mat or at a table, communicating verbally, using 'indoor voices', and walking when indoors with few opportunities to play outside are all things that boys find particularly difficult, but are often governed by classroom rules. By contrast, the more physical, exuberant and energetic approach favoured by boys often leads to behaviour that is perceived by many practitioners as inappropriate. (*Confident, Capable and Creative: Supporting Boys' Achievements*, DCSF 2007).

The activities boys choose can be a challenge to many practitioners as they may attract little adult involvement, and are often seen to be of less value than those chosen by girls. However, if we are to truly say that we are following the child, as Montessori said we should, and if we are to plan activities on the basis of observations of children's interests, as the EYFS advises, then we must learn to value the choices of all children, and look for ways of developing their learning through meaningful, sustained shared thinking. Practitioners need to value the noisier, more action-based activities of some boys as much as they do to the quieter, more contained play of other children. That is not to say that we should not continue to have ground rules. The consistency and predictability that these provide as limits to the child's freedom are a vital part of the development of self-discipline. But practitioners need to consider the developmental appropriateness of any rule, and the ability of children to abide by it.

Creating a stimulating outdoor environment that can be accessed at any time (free flow) is one of the best ways of creating a more boy-friendly environment. According to Bilton et al (2005): "some boys who are at risk of becoming disaffected at a very young age have shown significant improvements if their learning takes place outside." Indeed, many boys show a distinct preference for being outside.

Practical Life in the outdoors

On a recent visit to a nursery in Hampshire I observed a wonderful activity involving breeze blocks and a club hammer. Children were provided with safety gloves and goggles, and were then able to break up the block whilst remaining safe. An additional safety measure was a chalk 'safety circle' into which only the rock-breaker was allowed to enter. Interestingly, although this would seem to be a boys' activity, it was being enjoyed just as much by the girls.

Providing guttering, pipes, funnels, buckets, tubing and hoses together with a supply of water will lead to a wide range of practical life activities, but in a form and on a scale that will inspire and enthuse boys. Adding wheelbarrows, piles of sand, crates, rope, planks and sheets/tarpaulins offers opportunities for den building and fulfils boys' need for 'shifting stuff'. Activities of this sort encourage team work and collaboration, and provide a


PHOTO: WESTWOOD MONTESSORI


PHOTO: ROSEWOOD MONTESSORI


PHOTO: THE GOWER SCHOOL


PHOTO: WESTWOOD MONTESSORI

wealth of opportunities for learning and development across all six areas of the EYFS. In particular, the inclusion of mark-making materials to motivate emergent writing will stimulate boys' interest in early literacy skills in a way that more structured activities often fail to do. For example, providing MOT forms in the garage mentioned above, will give children the opportunity to record faults and work-to-be-done, so stimulating further role play and exploration. Chalks can also be provided for marking out and numbering parking bays for wheeled toys – developing numeracy and providing the impetus for tidying away at the end of the session.

Planning challenges, such as using available materials to build a bridge, will further encourage the use of problem solving and reasoning skills.

Creating a favourable classroom environment

Moving indoors, boys still need space, and yet the layout of many nurseries leaves boys constrained and restricted in their movements. As boys tend to spend much less time than girls engaged in table activities it should be possible to remove some of the tables to provide more floor space. This not only gives children more room to move around but also allows more space for such things as block play and other construction activities, which are favorites with many boys. Indeed, it is important to allow boys, and girls, the freedom to explore materials in their own original and creative ways, even when this challenges our ideas on misuse of the materials. There is a difference between exploring and experimenting with the materials, and treating them in a way that is dangerous or damaging. Providing a range of science and technology materials and posing a daily 'what happens if ……?' question is another way of meeting the children's need for challenge, experimentation and exploration.

Boys are also less likely than girls to be drawn towards activities involving fine motor skills. This may include

Creating a stimulating outdoor environment that can be accessed at any time (free flow) is one of the best ways of creating a more boy-friendly environment.

many practical life activities. Providing large motor practical life exercises and materials for woodwork and large scale art are good ways of encouraging boys to participate in more structured, focused activities that allow them to develop their physical, and creative, skills in a developmentally appropriate way.

Buckets and ladles in place of small bowls and spoons create a boy-friendly transferring activity, while a watermelon and golf tees provide a great introduction to hammering. Woodworking skills can be further developed through the use of good quality, real, child-sized tools (see http://mkn.co.uk/toy/build/juniorcarpenter). These need to be introduced gradually and under close supervision. Invest in a bench vice to hold blocks of wood still, goggles and good quality work gloves. Start with large headed nails part-hammered into a piece of wood, or cross-headed screws (these are safer than slot-headed screws) in pre-drilled holes. Wood glue can be introduced for fixing pieces together, with scraps of material, plastic lids and other recycled materials added for nailing on. With older children, saws and chisels can be added, but again this needs close supervision and appropriate risk assessment.

An alternative approach is to ask parents for any unwanted flat pack furniture. Children (and staff) will have hours of fun working out how to put it together in different ways, and in doing so will be developing a wide range of practical, social and creative skills.

It is also important to consider the structure of other group activities to ensure they reflect the learning styles and developmental needs of boys. Circle time is a case in point. Can we really expect boys who have an excess of pent up energy to sit still when they are itching to get outside and build that den they have been thinking about all morning? I do not go along with those who say they need to practice sitting still because 'they will need to when they go to big school.' They are not at big school; they are in nursery and we should be concentrating on their current needs, not their future ones.

Recently I spoke to a Montessori Head Teacher who told me that the boys in her school rarely chose to join in with music sessions. She asked the boys what songs they liked to sing and as a result the structure of the sessions was changed to include more upbeat, whole body action songs and other movement activities, often with props. These changes had had a dramatic effect and now almost all the boys join in with every session.

By creating activities that appeal to the particular needs of boys, practitioners will actually be providing opportunities for all children to demonstrate their knowledge, understanding and abilities in new and exciting ways. We will also be recognizing the unique individuality of every child. It is no longer enough to say that we encourage all children to participate in every activity; we must take every child's needs and interests into consideration when planning those activities. ■

> What is important is to recognise that boys explore and interact with the environment in ways that are different to girls. These differences need to be acknowledged, valued and provided for...

References

Bilton, H et al. (2005), *Learning Outdoors: improving the quality of children's play outdoors*, (David Fulton)

DCSF (2007), *Confident, Capable and Creative: Supporting Boys' Achievements*, (DCSF)

DCSF (2009), *The Early Years Foundation Stage*, (DCSF)

Smith, T. (2008), *Engaging Boys in the Early Years Islington Primary Strategy Early Years Team* (www.islington.gov.uk/earlyyears)

Chris Manville is Course Tutor for MCI, Woking.

Why boys and girls needs in the early

Sally Goddard Blythe looks at the early development of both sexes and explores how the differences in boys' needs can be nurtured in a positive way.

PHOTO: WWW.SXC.HU

Boys are physically more active and impulsive and less likely to calm themselves than girls.

Boys and girls are different. Males, often viewed as the physically stronger sex are actually more vulnerable in the early years than females, suffering a significantly higher rate of spontaneous abortion, premature birth, infant mortality, a range of illnesses in the early years including ear, nose and throat infections and a tendency to be fussier and more irritable in infancy. They are also more likely to suffer from developmental disorders including autism, attention deficit disorder and dyslexia.

Greater susceptibility to this range of problems is thought to result from a combination of larger brain size and slower rate of maturation before birth, the presence of only one X chromosome and exposure to higher levels of pre-natal testosterone. Testosterone depresses the functioning of the immune system.

While girls appear to have advantages in the early years, the scales start to balance out at puberty, when girls' growth and maturation slows down about two years earlier than that of boys'. By the mid-twenties many earlier biological developmental differences in learning outcomes level off provided that both sexes have enjoyed equal opportunity to develop in ways supportive of gender specific learning needs. Despite many recognised behavioural differences between the sexes, differences in the architecture of the brain are surprisingly small and are thought to result largely from pre-natal exposure to different hormones, particularly testosterone. The effects of small differences in hormonal environment increase with time and at different stages of development resulting in divergence in how the brains of boys and girls function.

The most profound difference between girls and boys is in the sequence of development of the various brain regions. A study published in 2007 demonstrated that there is no overlap in the trajectories of brain development in girls and boys showing that they develop different skills at different times and in different ways. These natural differences are reinforced by nurture, cultural expectations and experience. If genes and hormones set the scene, experience can amplify or diminish differences, raising the question: how can education foster and accommodate these different rates of maturation, needs and learning styles to bring out the best in both boys and girls?

> "The most profound difference between girls and boys is in the sequence of development of the various brain regions...they develop different skills at different times and in different ways."

What are some of the acknowledged differences between boys and girls?

(Note that these are general differences and there can be considerable individual variation on specific criteria.)

- Boys grow more quickly than girls from early on in gestation and male cells have a higher metabolic rate making them potentially more vulnerable to damage at stages of rapid proliferation.
- Boys have a slower rate of maturation in the respiratory and immune systems before birth making them more susceptible to illnesses in the early years.
- Boy's brains are about 9% larger than female brains, but girls mature at a physiologically faster rate up to puberty.

PHOTO: IVERNA GARDENS MONTESSORI, KENSINGTON

Boys are generally better at visual-spatial tasks while girls are ahead in verbal skills

ls have different years

- More boys than girls suffer fetal distress during the birth process and have lower Apgar scores at birth making them more vulnerable to damage.
- Newborn boys secrete more stress hormone in response to a surprising stimulus than girls, making them more reactive to certain stimuli.
- Girls are ahead of boys in the early aspects of expressive language, including use of gesture and first words (about 1 month earlier), vocabulary growth (about 2 months earlier in toddler-hood) and about 15% more verbally fluent than boys at 4 – 5 years of age. There is no difference in receptive language at 5 years of age.
- Boys are generally better at visuo-spatial tasks while girls are ahead in verbal skills.
- Boys are usually superior in strength and endurance in gross motor skills but slower at developing fine motor skills.
- Boys are physically more active and impulsive and less likely to calm themselves than girls.

What are the positive aspects of male differences and how can these be nurtured in the educational environment?

The male brain is wired to respond in external, rather than internal, ways. This can leave boys at a disadvantage in a school environment, when teaching focuses on the sedentary development of verbal skills at the expense of active learning. As early as kindergarten, kinetic, impulsive boys are told to sit down, be quiet, and do their work. Teachers are expected to provide a calm, controlled classroom, but boys tend to learn by doing and if activity in the classroom is suppressed they need to "let off steam" in other physical ways.

Regular physical activity can be introduced easily into the school day. The "Fit for Learning" programme is one example. Developed by Professor Pat Preedy and Chris Lees at a primary school in the Midlands, "Fit for Learning" enables teachers to break up learning sessions with physical activities. The sessions are led by teachers and require no preparation, minimum space and resources. Staff have reported significant improvements in children's coordination, behaviour and concentration. These empirical findings mirror standard practice in other cultures such as Japan and Taiwan, where twice as many recesses are incorporated into the school day in the early years while educational attainment remains high.

Normal attention span is approximately equivalent to 3 to 5 minutes per year of a child's age. Therefore, a 2-year-old should be able to concentrate on a particular task for up to 6 minutes, and a child entering kindergarten should be able to concentrate for 15 minutes. The longer a child has to sit still beyond his or her natural attention span the greater the amount of fidgeting, vocal activity and general disruption. In Finland, pre-school education pays particular attention to the physical needs of children, incorporating up to two hours of outdoor play into the pre-school day enabling boys to work off their physical energy while encouraging girls to develop gross motor skills, resulting in a more level playing field when all children begin formal instruction in reading at 7 years of age.

Boys need extra encouragement to develop verbal skills in the early years, because reading ability grows out of spoken language. Language develops through use, not just through passive listening. "Sounding out" is an important precursor to being able to decode visual symbols phonologically and sounding out begins with speech, conversation, telling stories and singing. Singing, sometimes erroneously regarded as a "girl" activity can help prepare the voice, the eye and the brain for reading and is suited to boys because it involves active learning. Cathedral choristers provide examples of how regular singing can enhance every aspect of academic learning.

Why boys and girls have different needs in the early years

continued from previous page

Physical readiness also plays an important part in a child's ability to sit still, pay attention, hold and control a writing implement and to transfer thoughts via the motor system on to paper. While boys' gross motor skills are generally more robust than those of girls, they tend to struggle for longer to master fine motor skills. Problems with writing can be minimised by separating the mechanics of writing from cognitive processing, teaching penmanship as one skill and encouraging them to talk about ideas and answers before putting them on to paper.

Rough and tumble play is also important for boys because it allows children to explore in creative ways and to test boundaries of strength and control without aggression. In ancient Greece, athletics and wrestling were important elements of a boy's education, as control of the body was considered essential training for the mind. Wrestling was used to develop control of strength and of temper. All healthy young mammals engage in rough and tumble play and there is a correlation between the appearance of this type of activity and maturity in the frontal lobes of the brain which are involved in creativity, imagination, empathy, planning and self-control.

One reason suggested by leading scientist Jaak Panksepp for the increasing incidence of ADHD amongst children (particularly boys) may be, "the diminishing availability of opportunities for pre-school children to engage in natural self-generated social play. Pre-clinical work indicates that play can facilitate behavioral inhibition in growing animals, while psychostimulants (ritalin for example) reduce playfulness. The idea that intensive social play interventions, throughout early childhood, may alleviate ADHD symptoms remains to be evaluated. As an alternative to the use of play-reducing psychostimulants, society could establish play "sanctuaries" for at-risk children in order to facilitate frontal lobe maturation and the healthy development of pro-social minds"

While boys gross motor skills are generally more robust than girls, they tend to struggle to master fine motor skills.

PHOTO: HAPPY DAYS MONTESSORI, WEMBLEY

> "The male brain is wired to respond in external, rather than internal, ways. This can leave boys at a disadvantage when teaching focuses on the sedentary development of verbal skills at the expense of active learning.

These recommendations were confirmed recently by Dr Abigail Norfleet James, author of "Teaching the male brain". Speaking at The International Boys' Schools Coalition (IBSC) conference in central London in January 2010, she said that boys and girls have distinct skills, with boys generally being less verbal, having less acute hearing, slower perceptual speed and being less likely to be able to control their impulses. While boys generally have better spatial skills, more acute vision, they learn best through touch, are more impulsive, more physically active and are "movement orientated" throughout primary and secondary education .

If boys and girls are to have equality of opportunity in education, then education needs to take these small but significant differences in rates of maturation and learning needs into account from the outset. ■

References

Durden-Smith J, de Simone D, 1983. *Sex and the brain*. Pan Books Ltd. London.

The NIH/NIMH study. 2007. *Sexual dimorphism of brain developmental trajectories during childhood and adolescence.* NeuroImage.36/4:165-173.

Eliot, L, 2009, *Pink brain, blue brain. How small differences grow into troublesome gaps – and what we can do about it.* Hougton Mifflin Harcourt. New York.

Knowle C of E School. Knowle. Solihull.

Goddard Blythe SA, 2003. *The well balanced child*. Hawthorn Press. Stroud.

Panksepp J, 2007. *Can play diminish ADHD and facilitate the construction of the social brain?* J Can Acad Child Adolesc Psychiatry. 16/2:57-66.

Norfleet James A, 2007. *Teaching the male brain*. Corwin Press. CA

Norfleet James A. Presentation at The International Boys' Schools Coalition (IBSC) Conference. London. 19th January 2010.

Sally Goddard Blythe is Director of The Institute for Neuro-Physiological Psychology in Chester. www.inpp.org.uk and a consultant in neuro-developmental education. www.sallygoddardblythe.co.uk

Exclusive
15% discount
all year for all accredited Montessori schools & nurseries quote NA1151*

Exclusive
10% discount
all year for all non accredited Montessori schools & nurseries quote NA1152*

NES Arnold
The professional's choice
Montessori's Preferred Schools Resources Supplier 2010

3,000 New and Exclusive Resources Including...

Developed by NES The professional's choice

The Sensory Garden is an exclusive new resource developed in conjunction with Eureka! The National Children's museum. Ideal for active learning and imaginative play for a unique sensory, outdoor experience.
See pages 786 - 787 of your NES Primary Catalogue.

Transform your environment...

Also see our **BRAND NEW** stationery range with over **3,000 new items**

Parachute Canopies Bring a whole new world of interest and excitement to children's play activities. See page 729 of your NES Primary Catalogue.

Rhythm Sound Centre give children hours of fun making sweet music. See page 585 of your NES Primary Catalogue.

era 2010 FINALIST

New 2010 catalogue Out Now Call or go online to order your free copy and find these exclusive resources - Plus 1,000s more!

SHOP ONLINE **www.nesarnold.co.uk** PHONE **0845 120 4525** FAX **0800 328 0001**

*Offers cannot be used in conjunction with any other offer. Offers can only be used on full-priced items in the 2010 catalogue or on www.nesarnold.co.uk. Offers valid until 31/12/2010

NWK10

Engaging boys' interest through exploration and investigation

Exploring leaves and patterns.

Pat Brunton and **Linda Thornton** suggest practical ideas to productively channel boys' interests in exciting exploration and discovery enabling them to demonstrate their abilities across the curriculum.

Early years practitioners will be aware from their own experience that every child is different, each with his or her own interests and preoccupations. Successfully supporting a child's learning and development comes from observing and documenting these interests and planning accordingly. Nevertheless, there is good evidence to show that boys and girls do, by and large, behave differently and tend to be interested in different things. This is borne out by the evidence from the EYFS profile which shows that when compared to girls, boys attain significantly less well in the areas of learning associated with Personal, Social and Emotional development (PSED), Communication, Language and Literacy (CLL) and Creative Development (CD). The area with the smallest gap between the attainment of boys and girls is Knowledge and Understanding of the World (KUW). The urge which many young boys have to try things out, take things apart and test out ideas can be productively channelled into interesting and exciting exploration and discovery, enabling them to demonstrate their abilities across many other areas of the early years curriculum.

Provide interesting open-ended resources which stimulate curiosity and encourage exploration.

Organising your space

Boys need space to move around and are interested in movement – of themselves and other things. Untidy, cluttered environments hamper their movement and freedom to explore and investigate and make it difficult for them to access resources easily. On a separate board, which can be hung vertically or placed horizontally on a work surface, or on an easily accessible shelf, mark clear silhouettes of the bases of the pieces of equipment you want to store. This makes it easy for children to see where resources should be returned to, in addition to practitioners knowing at a glance what is missing.

Many boys seem to feel more comfortable, and therefore learn more effectively, when they are out of doors. To support this, think about how you could make experiences which normally occur inside the setting available outdoors. Try developing a system of carry caddys to transport materials such as magnifiers, collecting pots, mirrors, torches, den making equipment, clipboards, pencils, paper and books outside.

Planning for boys' interests

Provide interesting open ended resources which stimulate curiosity and encourage exploration, and pay close attention to how the boys in your setting choose to use these materials. Recognise that boys and girls will play with these resources differently; be open minded and follow up on the boys' ideas by sourcing additional materials as required.

- Reclaimed resources available from your local recycling centre or 'scrap store' provide a real treasure trove to explore and experiment with. Handling reclaimed resources helps children to begin to see the connection between the properties of different materials and the purposes for which they are used. The intriguing shapes and materials fire the imagination and prompt investigation of what they can do and what they can be turned into. Reclaimed materials can be used to build dens and large scale constructions or to create interesting environments for small world play. 'Machines' can be built on a small or large scale with discussion about the nature and purpose of these creations extending boys' thinking and communication skills.

Light boxes are wonderful resources for extending boys' exploration of light and shadow.

- Light boxes and overhead projectors are wonderful resources for extending boys' exploration of light and shadow. Transparent, translucent and opaque materials can be investigated, and natural and reclaimed resources used to investigate pattern, shape, form, opacity and colour mixing. Boys will enjoy exploring the way the overhead projector can be used to create 'giant shadows' and will be attracted by the technical nature of these resources, often prompting questions about how they work.
- Mirrors never fail to provoke interest and excitement. Place them in the construction area to challenge children's thinking by providing interesting and unusual viewpoints or suggest the boys take the mirrors outside to look at the undersides of things. On a sunny day enjoy making a 'spotlight' by reflecting the sun onto different surfaces. Use this as an opportunity to talk about the safety issue of never reflecting the sun into anyone's eyes.
- Sticks are great for swishing around and poking into piles of leaves but you can also draw boys' attention to how wood and bark vary in texture, colour, structure, strength and scent depending on which tree they have come from. Encourage them to investigate the difference between the smooth outer bark of a stick from an ash tree and the rougher texture of the bark on a piece of oak. Wood freshly cut from a pine tree has a distinctive smell and often oozes a sticky, viscous sap, wonderful for investigating the properties of materials. Investigate which sticks are best for making a den – the longest ones; the strongest ones; the ones which bend easily?
- Rocks and stones provide an infinite variety of shapes, colours, patterns and textures and provide good starting points for extending children's vocabulary and descriptive language. Sand, as well as being great for digging in and moving around from place to place, also varies in texture and colour depending on where it has come from. Explore how sand of different texture pours through tubes and funnels and see who can build the highest wall using damp sand.
- Clay has the potential to be shaped and moulded by being rolled, squashed, squeezed, pinched, cut and joined. It has an aesthetic quality of its own, not replicated by playdough or plasticene. The texture of clay can be altered by adding water to make it thin and slippery, or by drying it out to make it hard and strong. It can be built into bridges, flattened to create roadways or shaped to form houses and enclosures to enhance small world play.
- Even the smallest outdoor area has the space for creating a habitat for living things, attracting snails, ants, beetles, worms and woodlice. A small area of ground for digging will develop physical coordination and gross motor skills. Planters and tubs can be used for growing flowers, vegetables or herbs and bird feeders and nest boxes can be fixed to walls or trees. Provide child-sized trowels, buckets, spades and wheelbarrows as well as boots and waterproof clothing.
- Exploring the immediate environment – the roads, houses, gardens, shops and parks and pedestrian crossings in the local neighbourhood will give boys real experiences of many aspects of science and design technology including weather, forces, materials, structures, energy and control. Looking at, and where possible investigating, the different materials used to make up the walls, doors, windows, drainpipes, and roof of your setting makes the building itself a valuable teaching tool.

Document boys' learning by taking photographs, encouraging them to make drawings and models to represent their ideas and by taking careful note of the words they use. Documentation can be used to capture the events, encounters, interactions and stages in an investigation or exploration, helping to track boys' learning experiences and giving an insight into how they review and clarify their thoughts.

> "The urge which many young boys have to try things out, take things apart and test out ideas can be productively channelled into interesting and exciting exploration and discovery..."

Documentation is an active process, and not simply a record put together at the end of an exploration or investigation. Gathering documentation during the process of an investigation and displaying it around the setting not only provides a visual record of the learning, it also demonstrates to boys the value you place on their thoughts and ideas, building their self perception as competent resourceful learners. ■

For more ideas on how to support boys' investigative learning see *Making the Most of Reclaimed and Natural Materials* and *Making the Most of Light and Mirrors*, published by A & C Black.

Pat Brunton and **Linda Thornton** are directors of alc associates which provides training and consultancy for early years practitioners and local authorities across the UK. www.alcassociates.co.uk