

# Learning and teaching in Montessori Nurseries

Adapted from *Understanding the Montessori Approach*  
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published by Routledge, 2012

This chapter will explore the principles of child-initiated learning across the age groups and examine the role of the teacher in facilitating learning in Montessori classrooms. The role of observation as a key assessment tool will be examined and the absence of formal testing in Montessori settings will be discussed. Learning experiences for babies and toddlers, nursery and primary school age children will be described.

*The fundamental principle of...pedagogy must be the freedom of the pupil.” (Montessori 1965:28)*

*“The instructions of a teacher consist merely of a hint, a touch – enough to give a start to the child.” (Montessori 1965:58-59)*

*“There is only one basis for observation: the children must be free to express themselves and thus reveal those needs and attitudes which would otherwise remain hidden or repressed in an environment that did not permit them to act spontaneously. An observer ... must have at his disposal children placed in such an environment that they can manifest their natural traits.” (Montessori 2007a:48)*

## What is child-centred learning?

(In the Montessori context and across age groups)

Montessori, alongside other educators such as Rousseau (1712-1771) Froebel (1782-1852) and Steiner (1861-1925) placed the child at the centre of the education process. She believed that, to witness children’s development unfolding naturally, we need to create environments which will facilitate the adults’ ‘following of the child’s lead.’

Practically,

this means that the child’s learning focuses on his/her interests whilst the teacher ensures that these interests encompass all aspects of the curriculum. This requires a teacher who understands children’s development and the Montessori pedagogy, has detailed knowledge of the child’s interests and learning styles and utilizes a wide range

of resources. In all Montessori classrooms observation is the key tool of the teachers' trade and their creativity is paramount in ensuring breadth of learning for each child. For Montessori (Montessori 2007a), learning and development go hand-in-hand, and given adequate freedom with some responsibility, the child's natural aptitudes and interests unfold and should be followed.

Montessori teaching strategies are based on the idea that, given a developmentally appropriate learning environment, children are capable of teaching themselves by selecting activities of interest, and investigating them. Montessori (2007a, 2007b) termed this type of learning *self-construction*. Her observation of children led her to the belief that young people are capable of learning in these conditions. She promoted education which guides children in preparing for adult life by becoming knowledgeable and understanding of their environment – socially aware individuals ready to defend human rights, the ecology of our planet and, above all, the need for universal peace (Montessori 1992).

## **The teacher's role in supporting children's learning in Montessori classrooms**

Montessori (1991, 2007a, 2007b) recognised that to be able to support the child in his/her self-construction it is essential for the teachers' role and attitudes to change. In her writing, she refers to the teacher as a *director/directress* indicating that the role is to direct the child on the path of self-construction. Such a person requires certain qualities which Montessori (1991, 2007a, 2007b) identified as the ability to stand back from the child and give him/her the opportunity to make choices reflecting their interests. The child who benefits from such attitudes grows to be the leader of his/her own learning without the overbearing influence of the teacher. This approach is particularly relevant to the youngest children, whose sense of self-worth is built around their autonomy and growing competence, which is usually the result of opportunities to

repeat and perfect skills and activities. This autonomy guides the child towards initiative and the ability to embrace challenge and risk-taking - qualities to be encouraged in the children of today, who live with such constraints on their personal freedom.

Montessori (1991, 2007a, 2007b) speaks of the teacher's "spiritual preparation." The teacher's ability to reflect on his/her actions and learn lessons is part of this preparation. His/her attitudes towards the child need to reflect empathy, personal humility and a genuine wish to serve the child.

All the above characteristics of the teacher's role significantly contribute towards the child's spontaneous learning and development. However, there is another element of the role which Montessori (1991, 2007a, 2007b) writes about and which needs to be considered: the teacher's personal preparation for the role. In today's language the teacher needs to:

- believe in the unique potential of each child and their fundamental 'goodness.' This is in contrast to the Catholic doctrine which was at the heart of Montessori's own upbringing, that of the child being born with Original Sin.
- serve the child in his/her effort of self-construction, which requires belief and trust in the child's ability to do so.
- be patient, humble and respectful of the child's efforts by putting aside the desire to control the child.
- be able to reflect on the teacher's own practice and learn from it, using personal experience, dialogue with colleagues and further study of current trends and research to guide them.
- be an advocate for the child, who heralds the future of humanity and wields potential for social change.

To follow the above principles and considerations, the teacher has at his/her disposal the favourable environment, which includes a range of Montessori learning materials and activities with their unique qualities and characteristics (see Chapter 3). If the

teacher understands these fully, they will equip him/her to prepare a wide range of activities to extend the child's learning in support of his/her interests and needs.

English Montessori nurseries have implemented the Key Person system in keeping with the requirements of the Early Years Foundation Stage (EYFS) (DSFS 2008). Their role is to take special responsibility for a group of children, document each child's learning and act as a link between the family, nursery and child. They also 'hold the child in mind' as they ensure their well-being (Manning-Morton and Thorp, 2003). The younger the child, the more important the role of the key person is, as s/he becomes the "voice of the child." The key person is essential in providing consistency, predictability and availability in relation to the children's everyday life and their relationships with the setting, thereby enabling attachment and positive relationships to grow. This does not mean that the children in the setting only relate to the key person. It is important that a young child develops relationships with all the practitioners in the setting and that all practitioners contribute to the child's observations and records. This provides for a richer picture of the child and draws on a range of expertise of the adults in the setting.

In primary schools the relationships with teachers develop further, and the adults take on roles of mentors and guides, facilitating the delivery of the curriculum as well as discussions, science projects, fundraising events and expeditions.

Montessori speaks of the changing role of the teacher, where the child gradually takes over the management of his/her own learning (Standing 1984). For the approach to work effectively, Montessori teachers must understand their role in ensuring that the favourable environment satisfies all the developmental needs and interests of the children in the classroom. The fact that their role seems passive, in the context of traditional education, in no way undermines their significance, contribution or influence over the children's learning.

## **Key principles of classroom management in Montessori settings**

Before we examine the specific teaching and learning strategies appropriate to the children's age groups, it is important to consider some key principles which underpin classroom management of all Montessori settings and which make a significant contribution to the child's self-construction. In Montessori classrooms, the children's freedom lies at the heart of their spontaneous learning.

### **Freedom in Montessori classrooms**

This is often the most misunderstood element of Montessori practice. Some perceive it as a free-for-all, whilst others see the whole approach as too structured, constraining the children's creativity and spontaneous actions. Montessori (1991) saw freedom as an essential component of the child's emerging self-discipline, and as such, it carries social responsibility towards oneself as well as the group, appropriate to the age of the children. Thus freedom is limited by the environment. The limitations emerge from, and are embedded in, the classroom environment and are expressed in the form of ground rules. Ground rules ensure the children's safety and well-being. They should be discussed and negotiated with the children, and in primary and secondary Montessori schools they should be subject to democratic debate within the group. It is important that the ground rules are adhered to by everyone in the group, including adults, and that they are consistently applied.

When speaking of children's freedom, consider the freedom of movement as directly linked with freedom of choice. It enables the child to move freely around the classroom, choosing activities, selecting where to do them, and with whom and for how long. Thus it underpins both the freedom to repeat an activity or not to engage directly with it, as some children learn passively by observing others.

Freedom in Montessori classrooms is facilitated by the organisation of the classroom – the open shelves with materials accessible and ready for use, and the *work-cycle* and *cycles of activity*. The children's achievements from use of the *work-cycle* and *cycles of*

*activity* can be recorded on a tracking tool which Montessori named the *curve of work*, a graph which documents the activities the child engages in and for how long.

### **The Work-cycle and Cycles of Activity**

As mentioned in Chapter 2 the *work-cycle* usually spans the morning and is at least two and half hours long, but can stretch to four hours in primary classrooms. It may also be in place in the afternoons if a new group of children attends the setting. During this time children engage in cycles of activity. The length of these cycles will depend on the child's age as well as level of engagement with individual activities.

The activities and materials selected may be done alone, with a friend, in a small group or with one of the teachers. They may take a couple of minutes but can also extend to 30 to 40 minutes if they really engage the child. They may prompt repetitions of the task, usually observed in the behaviours of younger children acquiring new skills and being driven by their need for independence. With older children, one sees that the initial activity often leads towards exploration and so may extend to an hour or longer, and may also lead to engagement with other children or one of the teachers. It may be interrupted by the child's need for a snack, by looking up information in a book or by contemplation. In the latter case, the children make it obvious to everyone else in the group that they wish to return to the task later by placing their name on their work.

The key to the success of the *work-cycle* is the adults' acknowledgement that children need to be able to make spontaneous choices and that the management of the classroom needs to facilitate these choices. From the teacher's point of view it is important to give the child the choice if they wish to join in an activity. From the child's point of view it is important to recognise that, when they have made a decision to do something, the wellbeing of the group needs to be considered and the cycle of activity adhered to. Respect for the child's decisions and trust in their ability to make appropriate decisions are paramount aspects of the Montessori approach across all age groups.

## **Vertical grouping**

In Chapter 2, we already considered the importance of grouping children following the three year age spans within the individual stages of development. So effectively children from birth to three learn together, as do three to six year olds, six to nine year olds, nine to twelve year olds and so on. According to Montessori, these groupings are important because they offer children opportunities to learn as a “family” or “community,” and thus reflect a more natural organisation of children’s learning. This approach also enhances children’s co-operation; it provides the older ones with an opportunity to guide the younger children and so consolidate their understanding as they share their knowledge with their younger or less able peers. Examining this approach from the perspective of the children receiving help, learning from friends is more accessible and often more enjoyable, as most children admire and look up to their older peers.

The vertical grouping underpins developing social relationships and emotional well-being, whereby children are able to display sympathy, empathy and concern for each other while demonstrating their emotional intelligence. Yet this is one of the elements of Montessori pedagogy which is particularly difficult to maintain, as pressure from the educational establishment as well as parents seriously undermine this tool for social cohesion despite its effective scaffolding of children’s learning (Montessori, 2007a). Once children reach kindergarten age (5 and 6 years old) and compulsory school age, they are organised in groups determined by their age, as this is perceived more suited to teaching techniques and strategies and assessment. However, this grouping can promote unhealthy competition amongst children and parents and often hinders the efforts of the less able children.

## **Control of error**

Montessori (2007a, 2007b) refers in her writing to the auto-didactic (self-teaching) nature of the Montessori favourable environment and the materials within it. Each

activity or set of materials should have a clearly defined purpose. The child engaging with it should benefit, particularly from the cognitive perspective and from growing manipulative skills. Language and social skills are also considered, as is the undisputed emotional benefit of the child's growing independence as their competence expands. Whatever the child chooses to do in the favourable environment should promote learning and development because the teacher only includes activities and materials they believe benefit the children. In addition to the strong focus on identified outcomes, Montessori also built into some of the activities a device which helps the child to control his/her error. She refers to it as the *control of error* (Montessori 2007b). Control of error relates particularly to activities with one-to-one correspondence, such as puzzles or knobbed cylinders, to give examples of specific Montessori materials for the younger children which call upon the child's problem-solving skills of trial and error.

For the older child, Montessori devised a control of error that provides tools for checking one's work with the help of control cards which give the correct answers. Both types of control of error are designed to minimise the child's dependence on adult help and are some of the tools which aid the child's self-construction.

Control of error is often misunderstood. The fact that Montessori referred to her materials as auto-didactic does not automatically mean that all the activities have a built-in control of error. Another aspect to consider is the fact that children need to be able to perceive the error in order to control it (Morris-Coole, 2010). Practitioners do not always know or understand fully what engages children, particularly the younger ones. Often it is the sensory quality of the materials which attracts them. For example, the author has observed a three year old boy deeply engaged with a cylinder block (this material, which promotes visual discriminations, is often quoted as an ideal example of control of error (Montessori 2007b, MCI, 2009) because of its one-to-one correspondence – each cylinder fits snugly into one specific hole. Children usually replace the cylinders by trying out which one will fit into which hole). The boy carefully took out each cylinder, and deliberately knocked each one over and listened to its sound as it rolled from the table onto the stone floor. He was interested in the varying

levels of noise each cylinder made rather than finding the matching sockets. He repeated this activity for over 20 minutes.

Sometimes so-called 'control of error' devices are added by practitioners to compliment the existing materials. One example involves placing matching colour dots on objects designed to be matched and paired, such as sound cylinders, which are part of the activities for refinement of the senses. These devices certainly add another point of interest to the activity, but do not actually provide a legitimate control of error, because children quickly work out that they can match the cylinders by turning them upside down and matching the colour dots rather than carefully listening to the sounds of each cylinder and finding a corresponding pair.

### **Scaffolding children's learning**

Another unique feature of Montessori activities lies in their careful design, which enables children to learn a new skill or concept via 'scaffolding.' That is, each activity focuses on a **unique quality within the activity, building up the child's knowledge in small, manageable steps whilst they grow in competence and understanding.** Children are encouraged to repeat the activities until they master a specific skill or demonstrate understanding of a specific concept. This strategy applies to all areas of learning. Several examples of scaffolding at the nursery are illustrated below.

Most young children love to use scissors, so mastering the skill of cutting can be an exciting challenge. Recognising that using toy scissors, which do not cut, is frustrating and counterproductive we need to harness the child's interest whilst showing them how to use real scissors safely. We can start by ensuring that alongside the scissors, which are available to the children on the shelf, there are also small trays on which they can be carried. Also available should be strips of paper narrower than the blades of the scissors, initially enabling the child to make the cut with one snip of the scissors. First they practice opening and closing the blades; next they place the blades at right angles to the strip of paper and close them to make a cut whilst holding the strip of paper with

the other hand (knowing where and how to hold the strip is a real skill in itself and needs to be practised as much as the use of the scissors). When this skill is mastered, the next strip, of the same width, should have lines drawn across to focus the child's attention on where to place the blades before cutting along the line. When this skill is mastered, strips with more complex lines such as zigzags or curves are introduced, allowing the child to gradually develop control of the scissors by making several cuts, one after the other along the line, without removing the scissors from the paper. This preparation gives children skills to follow a specific outline, accurately cutting pictures out of postcards or making an intricate paper cutting. It may take six to twelve months to develop these cutting skills. Each step engages the child because it is manageable and achievable, yet provides sufficient new challenge to move the child along in their learning process.

Another example, the use of the three colour boxes designed by Montessori to help children refine their chromatic sense, effectively demonstrates the scaffolding of children's understanding of colours in the environment.

The first box, containing just three pairs of tablets in primary colours – red, blue and yellow - is usually introduced to children early on, once they have expressed an interest in colours. Children learn how to hold the tablets, how to take them out of their box and how to match and pair them. They are also introduced to the names of colours, which is accomplished by using the three period lesson discussed later in this chapter. They can also take each tablet and find objects of matching colours in the environment, both inside and outside.

If they enjoy colour box one and are competent in its use, they are then introduced to colour box two, which contains eleven pairs of tablets - the original primary colours, the secondary colours, white and black as well as pink, grey and brown. Once again the tablets are matched and paired, objects of corresponding colours found in the environment and names introduced. Previously learned skills scaffold newly emerging ones. For instance, the child may explore how secondary colours are made, either

accidentally whilst painting or in organised lessons using food colouring or paints on wet paper. Secondary colours of light can also be explored using plastic colour disks. This should lead to the discovery that secondary colours made with light are different to those made with paints. All the time the child also explores colours in the surroundings of the setting, particularly in the natural environment. This may lead to further exploration of colour and light by creating a rainbow with the help of a spectrum, or talking about the rainbow after having seen it during a rain shower.

When the children's knowledge and understanding of colours is well established, the setting can introduce colour box three, which contains the nine colours children know from colour box two, each in seven new shades. This gives the opportunity to organise the tablets in sequence from light to dark or vice versa, using observational skills to identify small differences in each tablet. Usually, by the time children are ready for this activity they are also ready to engage with their friends, and may decide to grade all 63 tablets either in rows or in a spectacular colour wheel, taking a good 40 to 50 minutes in organising all the tablets. This example gives a rich picture of how the child's knowledge and understanding of colour is scaffolded in Montessori settings over a period of time, along with the aid of specific Montessori materials and other activities readily available in the classroom.

The fact that in the nursery catering for three to six year olds there is usually just **one of each activity or one set of materials scaffolds** children's social awareness and ability to wait for their turn. Children learn quickly that when they take an activity from the shelf they will be given the opportunity to engage with it for as long as they wish, provided they return it back to the shelf ready for another child to use. This approach also gives them an opportunity to invite a friend to join in or work on one's own. The clearly defined routine of cycles of activity makes a significant contribution to classroom management and children's growing social awareness.

Many of the activities undertaken when first in the nursery support the more academic learning which follows. Montessori (2007b) speaks of children receiving **indirect**

**preparation for later learning.** This is another example of children's learning being scaffolded and progression in learning encouraged. For example, the sorting, matching and pairing activities within the sensorial area support the children's ability to organise and classify information and so underpin their logical thinking, which Montessori (2007A) referred to as the child's *mathematical mind*.

The many activities which develop the child's manipulative skills, such as cutting, sewing and pegging, strengthen the fingers, promote dexterity and flexibility of the wrist and contribute positively towards the child's developing writing skills. Single skills introduced in the area of everyday living such as pouring, cutting, wiping of surfaces or washing of dishes after a snack are combined in more complex activities such as cooking, which draws upon all of these before-mentioned skills.

Another example of scaffolding and helping the child in the organisation of information is colour coding, including the use of colour in literacy. Colour coding can be applied to the identification of vowels (blue) and consonants (red) in the large moveable alphabet, which enables children to build words before they have the physical skills of forming letters.

Colour coding is also used in the identification of parts of speech where each element is represented by a specific colour and individual words are written on the specific colour card - nouns on black or verbs on red. This enables the child to form sentences using words written on the coloured card, so that a pattern of sentence formation emerges.

In addition, colour coding is used in arithmetic to identify the hierarchies of the decimal system with units - a unit of thousands represented by green numerals, tens and tens of thousands written in blue and hundreds and hundreds of thousands in red.

Lastly, extensive use of colour coding is made in geography and biology, where continents are identified by specific colours, for example green for Africa and pink for South America, and the phyla of the animal kingdom are presented to the child on

coloured cards (deep blue for all chordates), which are further subdivided into the five classes of fish (light green), amphibians (purple), reptiles (brown), birds (light blue) and mammals (red). From early contact with the images of these animals, the colour indirectly suggests to the child that all animals presented on red cards belong together and have some common features, which are later explained.

### **Extending children's vocabulary – the three period lesson**

Montessori recognised the importance of the adult when supporting children's language development, particularly so during the sensitive period for language. She advocated exposing babies and toddlers to everyday language (Montessori 2007a); she wanted them to be part of a family and community, participating in shopping expeditions, preparing and eating family meals, and fully integrating into everyday life. She believed that this type of engagement could give young children an opportunity to absorb the language of the home and support their language acquisition (Montessori 1966, 2007a). She also adopted Seguin's three period lesson for the teaching of new vocabulary, especially new names of objects in the environment. This lesson has become one of the key teaching tools of the Montessori approach and is particularly useful for helping children learn names of specific utensils, plants and animals, as well as the sensorial materials or their qualities, such as colours and textures. It is called the naming game. The game gives a child the opportunity to associate a new name with a particular object. As the name suggests, it is a lesson in three parts:

- At first an object (such as the blue colour tablet) is placed in front of a child and named several times. It is then replaced by another associated object (the red colour tablet), which is again named several times. Often a third object is introduced in the same way (the yellow colour tablet). This may be repeated again – to reinforce the new name. For example, the teacher may say, "This is blue, blue blue," pointing to the blue tablet.
- In the second stage, two or three objects (such as the three colour tablets from colour box 1) are placed in front of the child and the game continues with the teacher asking the child to point to a named object, to feel it or to move it. For

example, the teacher asks, “Can you show me the blue/ the red/ the yellow?” The child identifies each colour as it is named.

- In the third stage, all the objects are placed in front of the child once again and the child is asked to name an identified object. For example, the teacher points to the blue tablet and says, “What colour is this?”

It is not necessary to present all three stages during the same lesson. Often the game finishes at the end of the second stage, and the next day it starts with the second stage and follows onto the final one. We also use the three period lesson when introducing children to the sandpaper letters and teaching them to count.

In terms of the child’s learning, the object is at first isolated and named, then the name is reinforced by hearing it again and selecting the appropriate object, whereas at the last stage the child may be able to name the object. Observing siblings or friends together, one occasionally witnesses exactly the same process when one of them teaches something new to the other child. It is a particularly useful tool when working with newcomers to the setting, since the language of the setting may be different to the child’s home language.

### **Observations and assessment of children’s learning**

Despite the fact that Montessori was one of the first pedagogues to use observation as an effective tool for getting to know children, she left behind little documentation on observational methodology apart from the *curve of work* (Montessori 1991). However, observations remain the key tool for learning about young children. Observations should be undertaken daily and various methods should be employed. They can be brief jottings of children’s achievements, sayings or interests. They may be dated entries in a checklist such as the Individual Learning Plan (ILP) used by many Montessori nurseries, which documents children’s learning against a list of activities available in the setting organised according to Montessori areas of learning. The ILP is a quick way of noting children’s progress in a range of activities on offer and also helps to guide planning of activities, as the plan lists the progression of activities. Montessori teachers also make

longer narrative observations which provide a deeper insight into the child's levels of engagement with the materials, their problem-solving and thinking, language and manipulative skills as well as responses to friends, peers and adults in the nursery. The observations are often supported with photographs and samples of children's work. All this documentation provides evidence for the child's formative assessment and underpins the end-of-term or end-of year report a summative record of the child's progress. Such records can also support other record-keeping systems which may be in place - such as the Early Years Foundation Stage Profile used in England to assess effectiveness of the funded early years provision, and a statutory requirement of the Early Years Foundation Stage Framework (DCFS 2008).

Whilst it is inappropriate to test nursery age children, it is also not recommended that primary age children participate in formal tests. Montessori recognised early on that these types of tests are not beneficial to the children's learning and development at any age. Her main focus was on the levels of concentration and engagement in activities which children chose to do. For this purpose, she used the *curve of work* (Montessori 1991). Today's Montessori teachers combine the *curve of work* with the Leuven Scale of Engagement (Laevers 1994) to measure not only the length of engagement but also the level. When combined together, these tools provide some interesting data regarding individual children's levels of engagement and concentration in relation to selected activities undertaken during any *work-cycle*.

Rather than succeeding on examinations, Montessori saw the main focus of her education system as the child's self-construction leading to a well-informed, sensitive and aware adult-who enjoys learning and life. These adults actively participate in their community and advocate harmonious, respectful relationships within their community and in their environment. In this approach to education, children are helped to enjoy learning and see it as a lifelong journey, to develop into strong individuals who are able to make decisions for and by themselves, and to have a deep understanding of their social responsibility. These characteristics are fostered by helping children develop their self-worth, self-awareness and self-discipline.

## **Promoting self-discipline in Montessori environments**

*“...an individual is disciplined when he is master of himself and he can, as a consequence, control himself when he must follow the rule of life.” (Montessori 2007b: 51)*

For Montessori (2007a), obedience and self-discipline go hand-in-hand with an environment which offers children freedom within limits and with responsibility appropriate to their development and maturity. The key lies in positive role modelling and in opportunities to engage in self-chosen activities. This freedom fulfils the inner needs of the child and promotes concentration and deep engagement, which are essential to emerging self-discipline.

The freedom within boundaries relates to the limitations of the favourable environment in which the child learns. Responsibility is fostered by encouraging children's independence. It is nurtured from the early days in Montessori settings, and becomes the foundation of the self-discipline witnessed in children who benefit from Montessori education. The emerging self-discipline is closely linked with the children's developmental stage and maturity.

Initially, children learn to control their movements. Their growing competence and independence, as well as the dawning of the ability to control their impulses, all contribute to the emerging social individual who is beginning to be aware not only of his or her needs, but also the needs and well-being of others within the group and its social conventions. According to Montessori (1991), this child is ready for primary education.

In primary school, self-discipline is evident in the child's ability to contribute to and follow a learning plan for a day, and later for a whole week. The child's freedom to concentrate on tasks according to his/her own rhythms, wishes and cohort of friends carries the responsibility of ensuring the tasks are completed in the agreed timeframe.

The sensitive period for moral awareness is evident in a concern for other, less fortunate children. Children of this age often organise fundraising events during various disasters such as the Haitian earthquake or Japanese tsunami of recent years. These events give children the opportunity to contribute either by doing something to fundraise or by donating their pocket money, books and toys. Adults are often moved by the children's selfless generosity. These are instances of children's ability to defer gratification for the benefit of others, an important element of self-discipline.

Children who have learned to organise their education and social life, and who understand that they have a responsibility to themselves as well as to those in their group and community, are truly children ready to enter the turbulent teenage years. It is the author's belief that these children find adolescence less challenging.

## **Learning across the age groups**

As identified in previous chapters, children's learning reflects their developmental stages, maturity and interests. These elements are mirrored in the activities on offer in the classroom, in the organisation of the classroom and in the length of the *work-cycle*. The focus is on individual learning and development, particularly in the first six years of life. It is unusual for children to be expected to participate in whole class lessons, or circle times attended by all the children. The principle of freedom of choice is firmly rooted in all activities. Therefore children tend to have a snack when they are ready for it, rather than as part of a group. Small groups participating in singing, story-time or a talk about a specific topic evolve naturally, initiated by a teacher or a child, with others joining if they wish. In primary schools, friends often negotiate and plan on doing activities relating to the Great Lessons together. They benefit from brainstorming, discussions and debates which may involve either a small group or the whole class. They learn about democratic decision-making and are deeply concerned about being fair and just.

## **Learning in the Infant Community**

The focus of learning at this age is on giving babies and toddlers opportunities to move and use all parts of their bodies to develop gross motor skills and co-ordination of movement both inside and outside, and to begin refining their motor and manipulative skills. The children learn through their senses, by exploring everyday and new objects in their environment, absorbing the objects' properties such as texture, weight, smell, colour and shape and assigning names to them. Children begin to gain independence in personal hygiene, dressing and putting on their shoes and feeding themselves. Their understanding of how their home and nursery environment work grows rapidly as does their vocabulary and ability to move and manipulate objects. In a well-prepared classroom, the learning is spontaneous, with planning guided by the children's sensitive periods.

Gradually the children learn how freedom of choice works and are able to decide what they want to do. Often, they will engage with an activity where it is displayed on the shelf, standing whilst they are doing it. For this reason the activities on display are few and are rotated regularly. There are also several activities offered which are very similar in order to avoid conflict over their use, bearing in mind the ego-centric nature of the child at this age.

As previously discussed, heuristic play is part and parcel of many Montessori Infant Communities (Goldschmiedt and Jackson, 2004). It supports the children's sensitive periods by providing predictability and consistency in the way activities are offered to children, thus nurturing their sensitivity to order. Treasure baskets also offer opportunities for sensory exploration and encourage sustained periods of concentration whilst the child learns to make choices. Often, the treasure baskets are modified for older children and serve as tools for developing vocabulary as well as encouraging matching and pairing of objects with their photographs.

Toddlers also have access to heuristic bags, which supports their deep desire to move and carry things. These bags contain a variety of objects which can be sorted, posted and fitted inside each other – this enables learning about relationships, size as well as

properties of objects. Toddlers demonstrate their sensitive period for detail in spotting small differences in books, their favourite bugs in the garden and the environment. They notice and possibly get upset if their friends and adults are missing from the classroom.

Their language skills become extended through daily story-telling and book reading, singing, moving to music and dancing. Daily visits to the nursery garden and walks in local parks further contribute to their learning.

### **Learning in the Children's House**

The focus on learning through the senses and manipulation continues. The three to six year olds have access to activities displayed on open shelves and will be able to take full advantage of the freedom to choose whilst following cycles of activity. The activities of everyday living facilitate opportunities for growth in competence whilst using everyday objects such as a range of spoons, ladles, tongs and tweezers, tools essential in arts and crafts and gardening. Children learn culturally appropriate etiquette for setting tables, welcoming visitors and asking for help. They extend their personal independence by brushing their teeth after meals, learning to tie their shoelaces as well as doing up their anorak zips or buttons on coats and jackets.

Their rich sensorial experiences develop further with the help of the sensorial materials. New concepts and conceptual frameworks will be established, all contributing to the child's deeper understanding of the environment as well as ability to organise and classify information. The materials also serve as preparation for more academic learning when literacy and numeracy are introduced to those children who express an interest in it.

Many seeds of interest and knowledge are sown by introducing children to the creatures living in their garden, to the lifecycle of animals and plants and to the variety of animal life found in their own environment and around the world. As children explore the solar system or the eruption of a volcano, they will learn about their planet and its unique

physical features such as rivers and lakes. They will be introduced to the continents of the world and their people, cultures and lifestyles as well as animals, plants and transport. The children will learn about the properties of water and basic principles of magnetism and light as they are introduced to floating and sinking, the three states of water and other phenomena of science.

All of these activities prepare children for an introduction to phonics and arithmetic when they express an interest as evidenced by the teacher's observation, which usually happens during their time at nursery. The strong foundations laid in the early stages lead them to success in learning at the next stage, having gained competence and self-assurance in the skills and activities they enjoyed at nursery, as well as having grown in their social skills.

The social aspects of nursery life are very strong. Each child's unique development is taken into consideration and s/he is guided towards social life both by example and also by providing etiquette and structure during the sharing of activities. Children are asked if they are ready to share with others and their wishes are respected. There are no expectations that, just because a child attends a nursery, they should be ready to share with others. Montessori teachers trust in the natural unfolding of social skills, friendships and empathy as the children settle in, gradually decentre and develop theory of mind (Piaget in Bruce, 2011).

All these aspects of learning foster children's well-being. The gradual emergence of initiative and self-discipline is the hallmark of a successful Montessori nursery education.

### **References:**

- Bruce, T. (2011 4rd ed) *Early Childhood Education*. London: Hodder Education
- Laevers, F. ed. (1994) *Defining and Assessing Quality in Early Childhood Education*. Belgium: Laevers University Press.
- Lillard, P. P. (1996) *Montessori Today*. New York: Schocken Books.

- Loeffler, M. H. ed. (1992) *Montessori in Contemporary American Culture*. Portsmouth, NH: Heinemann.
- Macleod-Brudenell, I. ed. (2004) *Advanced Early Years Care and Education*. Oxford: Heinemann.
- Manning-Morton, J. and Thorp, M. (2003) *Key Times for Play*. Maidenhead: Open University Press.
- Montessori, M. (1964) [1912] *The Montessori Method*. New York: Schocken Books, Volume 9.
- Montessori, M. (1991) [1918] *The Advanced Montessori Method – Volume 1*. Oxford: ABC – Clio Ltd.
- Montessori, M. (2007a) [1949] *The Absorbent Mind*. Amsterdam: Montessori-Pierson Publishing Company, Volume 1.
- Montessori, M. (2007b) [1912] *The Discovery of the Child* (originally published as *The Montessori Method*). Amsterdam: Montessori-Pierson Publishing Company, Volume 2.
- Montessori, M. (1992) [1949] *Education and Peace*. Oxford: ABC – Clio Ltd, Volume 10.\*
- Montessori, M. (2007e) [1948] *From Childhood and Adolescence*. Amsterdam: Montessori-Pierson Publishing Company: Amsterdam, Volume 12.
- Morris-Coole, S (2007) *The Control of Error*. Montessori International October – December 2007
- NAMTA Journal (Spring 2006) *Beyond School: Montessori in Nature, Home, Teacher Development and Moral Education*. Volume 31 Number 2.