

Montessori Keystones: Spring 2021

Montessori said, *“What I want now is a body of colleagues, research workers, who will examine what I have already done, apply my principles as far as I have gone, not in a spirit of opposition or conviction, but as a matter of pure experiment.”*

(Kramer, 1976, p. 262)

Autism spectrum disorder strategies:
Montessori environments supporting children with autism spectrum disorder

Montessori graduates:
Graduates’ perspectives and the reality of transitioning to high school

MRA Support Guides:
Supporting children with autism spectrum disorder in the 0-6 environment
Initiatives to retain children throughout their primary Montessori education

First edition published 2021

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Do Montessorians need to carry out research?

Montessori was keen on research yet Standing (1957) stated that “less than thirty per cent of her research have as yet found their way into print” (p. xix), although Montessori carried out a “continual stream of research... carried on during the rest of her life” (p. 64). Montessori’s research “on the child’s development in these earliest years have been published under the title of *The Absorbent Mind*” (p. 69). “For fully forty years, now in this country, now in that; in favourable circumstances or difficult; in peacetime or in war — ceaselessly, calmly, undeterred by calamities private or national—Dr. Montessori went on steadily with her research. There is no single person living who knows the extent of them. They have never been collected together in one place” (p. 67). Standing stated that “lavish care and expenditure, the long and patient scientific research has gone into the creation of this *new world* for the *new children*” (p. 186).

Kramer (1976) stated that Montessori carried out “anthropological research in the elementary school” (p. 94). Adding that Montessori “had discussed with McClure for establishing in America a training institute for research and teaching in her methods” (p. 172). She had “plans for establishing an international educational research institution” (p. 187). Montessori argued that “My experiences, far from being rigid, were logical conclusions corresponding to the application of an exact and positive method. The behaviour of the children, being uncontrolled by rigid research, gave new evidence, something living, which issued from my experiments as a spring of water gushes from a rock” (p. 305). Kramer also quotes Montessori, when she was almost 50 saying:

“I don't know what to do. There is so much of it, and nobody will ever collaborate. Either they accept what I say, and ask for more, or else they waste precious time in criticizing. What I want now is a body of colleagues, research workers, who will examine what I have already done, apply my principles as far as I have gone, not in a spirit of opposition or conviction, but as a matter of pure experiment. Then they can help me with constructive criticism, after, not before, the event. I have never yet had anyone-starting from my own previous body of knowledge-work shoulder to shoulder with me in a scientific independence. Now that doctors and psychologists are beginning to take an interest in normal children, perhaps some of them will help me. At present I am in a kind of isolation, which is the last thing I desire. Questo lavoro P troppo per una persone sola-sono troppo sola nel mondo” (p. 262). Google translation – ‘This job is too much for one person – I’m too alone in the world’.

Mario Montessori (1976) stated

“Laboratory experimentation, however, has practical limitations. That is why ways are sought to retain the advantages of the experimental method in the systematic study of phenomena which cannot be studied in the laboratory. One of the most important ways of doing this is through field experiments, where the field is a normal environment, for example, a school. Even closer to everyday experience is so-called action-research in which a community (such as a school) cooperates with experts in the research programme. These experts not only investigate existing conditions but seek to improve them. Such research therefore has a normative character. Another method of investigation outside of the laboratory is to make the observer or researcher a member of the group under observation. However, making and recording observations, it should be remembered, is a very difficult task for most people. If teachers are required to do this, it is important to give considerable attention to such matters in their training...All the scientific methods described above are compatible with Montessori education” (p. 42).

Need more inspiration to conduct Montessori research? “When she spoke of the child as the teacher rather than the taught, Montessori had in mind her own cognitive style as a researcher, which was to make intuitive conclusions from her observations” (Kramer, 1976, p. 365). When

asked to sum up her educational philosophy, she did so in two words: "Attendere, osservando - watch and wait" (p. 365). Standing (1956) stated that "her research did, in fact, lead her in two directions: forward towards adolescence; and backward towards the newly born child" (p. 68). "The publication of certain research which he (Mario) and Dr. Montessori worked out together, especially those dealing with the development and care of children from 0-3 years; and also the application of her principles to secondary education" (p. 72). Adding "scientifically tested plan of cosmic education... has already proved itself to be the only path on which our feet can firmly tread in further educational research" (p. 366).

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The benchmarks for acceptance of a study or article are twofold - has the research been conducted in Oceania and will the manuscript make a useful contribution to the knowledge base or understanding of the subject matter. Or perhaps you have not conducted a study but would like to do a Montessori book review. It need not be complete research, after all research is an incomplete, on-going project by its nature. The moral rights of the authors have been asserted.

Montessori Keystones provides insights into ongoing Montessori trends, themes and developments impacting the global Montessori community. Maria Montessori considered herself a global citizen (Standing, 1967, p. 361). Montessori (1949) said, "in a word, contemporary people have citizenship in the great nation of humanity. It is absurd to believe that such people, endowed with powers superior to those of nature, should be Dutch or French or English or Italian. They are the new citizen of the new world - a citizen of the universe" (p. 25). Montessori stated that "To think and to wish is not enough. It is action which counts" (Montessori, 1913, p. 171). New Montessori researchers will be supported to conduct a Montessori Action Research Study which includes an abstract, introduction to their study, a literature review, ethical considerations, data collection through work and observations in the class and reflecting on the data gathered and findings they reveal. Or, if ready with projects, can submit their research to be peer reviewed and edited for possible inclusion.

Montessori Keystones needs your research contributions to take action that counts!

How to Contribute

Academic writing is the formal writing style used to write scholarly materials. There are many types of academic writing to present your work:

- Article layout: abstract, introduction, methods, results, discussion, and references
- Montessori Action Research Study layout: abstract, why do I need to research this issue, what others have said about this issue, ethical considerations, data collection, findings, changed my practice in x way.

- Book report/review: short summary of book, background info about author and topic, and an evaluation of the content.
- Conference paper: abstract, introduction, methods, results, discussion, conclusion, and acknowledgments.
- Essay: layout is generally main idea, evidence, conclusion.
- Literary criticism: comparison, analysis, interpretation/evaluation of works of literature.
- Synopsis of an experience/knowledge: introduction, main points, reflections, changed my practice in x way.

Helpful hints if you would like to write a little more clearly and academically

Paragraphs:

- 150 to 200 words per paragraph (never below 50 words)
- Topic sentence — body (argument/detailed explanation)
- Tokens — evidence, examples, supporting main argument.
- Final sentence — Sums up paragraph conclusion/signal implication of findings.

Sentences:

- Average of 20 words per sentence but with a variety of sentence lengths/structures.
- Use active verbs with real subjects.
- Keep the subject, verb, and object (SVO) close together and clearly linked.
- Qualifying clauses placed at the beginning or end of sentences.

Does a paragraph or sentence do the BBC:-

- *Build* your argument, advance readers' understanding, strike right tone, reach right level.
- *Blur* your argument, perhaps repeating material or waffling with no clear purpose.
- *Corrode* the text, include material that is wrong or irrelevant to main argument at this point.

Overall

- Use a formal tone (no slang, cliches, not conversational).
- Use precise language to clearly convey your meaning.
- Use third person point of view rather than give advice, focus on educating on the facts.
- Research focus through answering a specific question.
- Organise information logically in a linear fashion using headings.
- Properly cite all sources and include in a reference section.
- Stand back and ask — Is this text attractive, involving, varied and interesting.



Educator's strategies: Ensuring an inclusive environment for children with autism spectrum disorder in a Montessori 3 to 6-year environment

By Kathleen Leonard (2020)

[In partial fulfillment of the course:

Montessori Strategies for Children with Additional Needs in a 3 – 6 Classroom]

Keywords: Montessori, additional needs, inclusion, autism spectrum disorder (autism)

Abstract:

The following Montessori action research study was carried out to determine the best strategies for the inclusion of children with autism in a Montessori 3 to 6-year environment. Inclusion assumes all children learn differently and should have full access to the same curriculum. One in 70 Australians are diagnosed with autism each year, therefore inclusive environments are crucial. The structure of the environment should meet all diverse learning and developmental needs and styles. Two children with autism, aged 4 years, were observed for a month and strategies were implemented in a 3 to 6-year Montessori environment. Materials utilised were purposeful, required movement, provided role modelling, and made use of the senses and included grace and courtesy lessons, the sensorial and practical life materials. Taking the time to understand a diagnosis and work with external specialists supported the planning and teaching. Prior to introducing strategies, observations highlighted the children's interests and the conditions they are averse to. A child with autism may show challenging behaviours if they are not provided with the right strategies and activities that will hold their interest. Montessori educators have the skills to use multiple strategies and feel confident in adapting the curriculum to meet the needs of the child. Montessori herself said if a challenging child is provided with meaningful activities they are no longer challenging. Educators can change their perception of what they conceive a 'normalised' classroom is, as any child that is interested, engaged, and developing socially and emotionally is a contributor to a normalised environment. Montessori stated that, "we get the unification of all the energies and the creation of a new person. We call this normalisation. This phenomenon of normalisation is only achieved through intense activity and real concentration" (Montessori, 2012, p. 216).

Introduction to the research

The past decade has shown an increase in the number of diagnosed cases of autism, with this increase there is a growing awareness about autism among the general population and hence children are being diagnosed earlier (Autism Spectrum Australia, 2020). Early intervention has proven to be effective in providing children with special needs a good start to their development. Early childhood professionals are in the optimal position to provide an inclusive environment, ensuring that the children develop confidence and work to alleviate their anxiety, therefore providing the best possible start to their education. Negative influences in the early years can be one predictor of future behaviours such as: bullying, aggression, withdrawal, and antisocial behaviours, including depression and the inability to responsibly solve disputes and challenges. Conversely, a secure foundation will allow the child to learn how to relate to others and prevent the risk of many other negative outcomes.

Autism is referred to as a developmental disorder that impairs social interactions and the ability to communicate (Autism Spectrum Australia, 2020). People with autism also generally have sensory sensitivities and patterns of repetitive behaviours. The range and severity of the symptoms vary widely, and assumptions cannot be made about one child based on another child with autism. Aspect Australia claims one in 70 Australians are diagnosed with autism each year (Autism Spectrum Australia, 2020).

Inclusion assumes all children learn differently and should have full access to the same, but possibly adapted, curriculum. The structure of the environment should meet all diverse learning and developmental needs and styles. Materials are adapted to include children, so they are not singled out as being different or given special treatment, therefore providing the child with a feeling of belonging. Lane-Barnapov (2016) research found a number of Montessori educators are apprehensive to adapt the Montessori curriculum and, therefore, do not feel confident in their ability to support young children with autism in the Montessori environment. The purpose of this research is to explore this area further and find strategies that can be included in the Montessori classroom while still maintaining a normalised environment.

The Montessori room where observation and evidence were collected, for the purpose of this research, is a school from infancy through to 12 years, located in Sydney, NSW. There are currently three environments for 3- to 6-year-olds. Each environment has one Montessori trained educator and two Montessori trained assistants. Each class has between 25 and 30 children from 3 to 6 years.

Children with additional needs and Montessori

There is minimal research into Montessori educating children with autism (Lane-Barmapov, 2016). However, the Montessori method has its foundation in special education as Montessori worked extensively with children with learning difficulties. Montessori took these approaches and used them as a basis for her materials. For example, the sensorial materials are highly contrasting and require the use of all five senses eventually progressing towards refining those contrasts, Montessori referred to this as “establishing a harmony between the intellect and outside world” (Montessori, 1967, p.182). All children can benefit from the use of sensorial materials regardless of their needs (Lane-Barmapov, 2016, p. 59). Montessori also discussed variations in behaviours and personality traits. Montessori (2007) talks about how society arranges children’s personality traits into three groups,

- those with defects that need correction
- those who are good, passive and need to be taken as models
- those thought to be superior

Montessori said of all these traits that they cease to exist while children are absorbed in an activity that is of interest to them (Montessori, 2007). She discusses the defects and classifies children as strong - who resist and overcome obstacles they meet; or weak - who succumb to unfavourable conditions. Montessori believes some children may lack purpose, however, when provided with an environment where they can engage in and repeat activities of interest their defects become non-existent (Montessori, 2007).

Ethical and Montessori considerations

No conflict-of-interest issues have arisen in relation to this research. The project has been conducted as part of the researcher’s daily work in the classroom and is therefore subject to the researcher’s Montessori professional standards, confidentiality in particular. Therefore, no audio, photos or real names have been included in the study. The data remains the researchers as the author.

Montessori did not use the term ‘ethics’ but she did stipulate the type of ‘new teachers’ she wanted to observe in and lead her environments. Montessori stated that the educator “must acquire a moral alertness which has not hitherto been demanded by any other system” (Montessori, 1967, p. 151). Montessori also stated that adults should “take the greatest care to be sincere” (Montessori, 2012). “The teacher can make observations which, when they are later studied scientifically, can help

determine a child's mental state and lay the foundation for further pedagogical experiments” (Montessori, 1967, p. 319).

Literature review

Current research promotes inclusion of all children with a disability into mainstream schools, stating that all children have a right to an education. An inclusive environment ensures that children of any race, ability or gender have a right to be part of the program. In a research paper on interviews with Montessori teachers it was recommended to adapt the curriculum, “being able to adapt the Montessori method for children with ASD, promotes inclusion” (Lane-Barnapov, 2016, p. 35).

Research suggests for ultimate results in early intervention, educational professionals work within a multidisciplinary team, that is, a team of professionals working together to attain a common goal relating to the child’s individual outcomes. Multidisciplinary teams may include a speech therapist, occupational therapist, physiotherapist and psychologist or behavioural therapist. This must also encourage parental involvement, who are an essential part of the team. When all the teams work together the outcomes are optimal.

Theory of mind denotes the inability to understand mental states that represent individuals’ behaviours, such as intent, attitudes and aspirations. Children with autism lack this ability. A deviation in theory of mind has great social implications for children with autism as they present with difficulties interpreting social cues and deducing unpredictable behaviours (Tager-Flusberg, 1999). Visual aids can assist children with delays in language and cognition and are unobtrusive to the majority of children. Visual aids can be utilised during group activities and when transitioning from one activity to another. Social stories are another visual tool, developed by Carol Gray, used for children with autism to display behaviours appropriate to society norms. Social stories are concise stories (usual one sentence per point) that include photos or images.

Additionally, children with autism typically have sensory processing disorders, that is, an over or under-sensitivity to touch, smell, taste, sound or visual input. Sensory processing disorder can lead to distractions and, ultimately, deviations for a child with autism if not managed. Consequently, a diagnosis of autism poses individuals, in the risk category, for poor concentration, anxiety, impulsive behaviour and depression (Folstein, 1999).

Gathering data through observations and evidence

The research for the purpose of this paper included observation and strategies used with two children with autism, aged 4 years and 4.5 years, in a 3 to 6-year Montessori environment.

A girl of 4.5 years and was observed over a three-week period. In that time, I noted her had a strong preference for standing at a shelf and holding objects in her hands while talking to herself in a hypnotic-state. When I invited her to take the activity to a table she would refuse in a polite way, 'no thank you', and walk away. She would often go off into a 'fantasy type world' where her eyes would glaze over and she would talk to herself, either holding objects or holding a book.

In Montessori's theory of the three traits of child, her fantasy type state would categorise her behaviour into the first, 'those with defects that need correction'. Montessori argued that children who are given purposeful tasks that are of interest to them lose deviation. Therefore, she was invited to engage in a number of practical life activities that involved a lengthy process, for example, baking cookies. A key purpose of practical life activities is movement. The movement in this activity provides her with sensory input. The girl focused on this activity for over half an hour and during this time she did not participate in any self-talk and her usual glazed over look was replaced with a look of focus and concentration.

Children with autism need predictability and routine. Studies have found that children with autism have an improved likelihood to respond in social situations when the environment is familiar and structured (Tager-Flusberg, 1999). The Montessori environment is ideal in that there is a strong structure and routine. The activities remain in the same place where each child knows where to find them and involves the same cycle each time. Additionally, a structured environment will alleviate confusion for a child that is already dealing with the multitude of sensory stimulation which may be distracting. Lily can feel secure as she knows that at any time, she can choose to repeat this activity without time restraints.

In the research paper, '*Including sensory integration materials in a Montessori classroom to improve behaviour outcomes*', Hoyt (2018) advocates for sensory integration materials in the Montessori classroom for children with high sensory needs, as this is in line with Montessori's principle of following the child, stating, "the sensory integration materials provided another tool for children to experience success, while not taking away from the classroom" (p. 25).

Children with autism may be over or under sensitive to certain sounds, tastes, touch and smells. It is important for educators to be aware of the individual child's sensory variations; failure to do so could cause the child to feel frustrated, anxious, and consequently lose concentration. For example, a child that is hypersensitive to auditory stimuli may require a place to retreat when the noise becomes overwhelming. Furthermore, adjustments to the child's program could involve sensory breaks such as 10-15-minute play dough or reading depending on the child and their needs; allowing the child to self-regulate before attempting a new activity. The girl used putty to self-regulate between activities which provided her with tactile input that she craves due to a sensory processing disorder. Visual aids are another strategy that may be useful when transitioning between activities.

Children with autism have strengths in visual processing (Francke & Geist, 2003). A classroom will require many visual supports to assist the child. Additionally, visual prompts can be used to encourage a desired behaviour such as sitting in a group or raising your hand to ask a question. Visual prompts can eventually be replaced with verbal prompts as the child begins to understand what is expected of them (Francke & Geist, 2003). When desired behaviours are met, educators can utilise the child's preoccupied interests as rewards to reinforced behaviours.

A boy of 4-years-old with a diagnosis of autism I observed over the first two weeks showed a preference for walking from one end of the room to the other holding a broom, sometimes bringing the broom up high above his head. He did not engage with other children unless they were in his way and then he would either use the broom in an attempt to sweep the other child away or nudge them with his body. He rarely chooses activities from the shelves and often refused presentations.

Communication with the boy's Occupational Therapist provided information that he is under responsive to sensory information and would benefit from heavy lifting. One strategy tried was to use visual prompts to entice him to an activity. The boy was provided with a choice of five to six photographs of different activities found on the shelves. He was invited to choose three of the five, to complete over the morning work cycle. He would stick the three photographs onto a laminated card in the order that he would like to complete them. Knowing the information from the Occupational Therapist, at least three activities that were in the photos involving heavy lifting and a sensorial quality, for example, the brown stair. The brown stair requires the child to carry ten wooden prisms to a mat before building a stair from thickest to thinnest. The results were amazing, he was able to complete each activity in the order he had chosen them and, due to the nature of the activities he held his concentration for long periods of time.

Another key feature of the Montessori environment is social cohesion, that is, children support each other and learn from each other. A common characteristic of children with autism is difficulty learning through imitation, that is, typically a child will not copy or even be aware of looking to others to find out what to do. In the 3 to 6-year environment selected small groups encourage structured social interactions, that may be supported by the adult to guide and model interactions. The grace and courtesy groups are examples of structured small group presentations that models behaviours in a direct approach. Another strategy may be the use of visuals or social stories derived from the grace and courtesy lessons. For example, '*how to walk inside*' may include a picture of the child walking in the room with a caption 'I walk inside' and a picture of the child running outdoors with the caption, 'I can run in the playground'.

Conclusion

The results of the research demonstrate there are many activities currently available in the Montessori environment that can be utilised for children with autism, including, grace and courtesy lessons, the sensorial and practical life materials. These activities are purposeful, provide movement and utilise the senses which can support sensory processing disorders. The adult led grace and courtesy groups allow for direct guidance and role modelling in social interactions. The structure and routine of the Montessori environment provides a safe and supportive setting for a child that may be feeling anxious due to external stimuli and lack of social ability.

Understanding the diagnosis and working with external specialists' supports planning and teaching. For example, communication with the boy's Occupational Therapist provided me with vital knowledge about his sensory needs and the best approach to support him. In the same way typical developing children are unique, children with autism have their own strengths and challenges that are unique to other children with autism, therefore observations must be made to find out their interests and the conditions they are averse to prior to introducing strategies. Fortunately, planning unique to the individual child, is a key feature of the Montessori philosophy.

One of the goals of the Montessori educator is to strive towards a 'normalised' environment which is "only achieved through intense activity and real concentration" (Montessori, 2012, p. 216). Educators are uneasy when a child who is deviated enters the environment holding the perception that they may disrupt the dynamics of the room. Montessori said if a deviated child is provided with meaningful activities they are no longer deviated. A child with autism who may show behaviours of deviation due to their inability to socialise and their high sensory needs may be a threat to the normalised environment. If not provided with the right strategies and activities that will hold their

interest, they may continue to unsettle the flow of the room. It is up to educators to use multiple strategies and find several that work, feeling confident adapting the curriculum to meet the needs of the child.

On conclusion of this research, the researcher decided to change their thinking about what they perceived to be a normalised classroom and to accept that any child that is interested, engaged, and developing socially and emotionally is a contributor to a normalised environment. The researcher believes, following the research conducted, the Montessori method is an ideal approach for all children regardless of diagnosis, developmental ability, or cultural background. Montessori education is dependent on educators willing to support all children and do whatever they can to include each child and make them feel a part of the environment. In doing so educators will provide them with an invaluable start to life.

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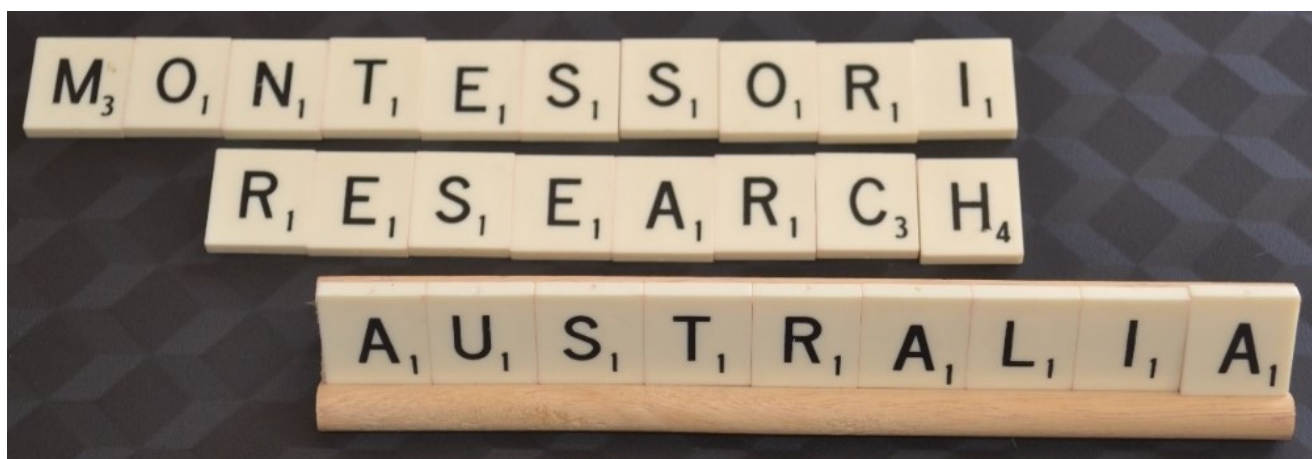
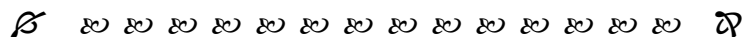
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Kathleen completed her Bachelor of Education in Early Childhood as a mature age student in 2015 and then her AMI 3-6 diploma in 2018. Her work/life experiences included sales representative for various companies in the food industry, then managerial roles in the catering and advertising industries in the USA. She took leave from the workforce in 2002 to care for her 2 sons, the eldest having been diagnosed with autism. Kathleen took an active role in his crucial years of development through early intervention programs and therapies such as speech, occupational and physiotherapy. It was during this time that she decided to change her career path to child development. During the following five years while studying education, Kathleen gained part-time employment with a long-standing non-for-profit organisation taking on the role of support aide for children with special needs as well as teaching placements in both the public and private sectors.

In 2015 she secured a position as classroom director 3 to 6 years at a Montessori school in Sydney, in an environment where she additionally filled the role of acting principal for 6 months. Feeling the need to expand her knowledge and experience in 2017 she applied for and was appointed classroom director 3 to 6 years at a highly reputable inner-city Montessori school where she remains to date. Kathleen is a keen observer of children’s behaviour and development and is a firm believer in Montessori’s approach to education. She is constantly on the lookout for strategies that meet the needs of individual students, involving support personnel to develop relevant programs and including families every step of the way.

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Australian autism research studies of interest

<p>Researchers investigated the frequency and age of diagnosis of autism spectrum disorder (ASD) in children aged under 7 years living in Australia. They analysed data from over 15,000 children, establishing that the average age at diagnosis is currently between 4 to 6 years old. Diagnosis across different states in Australia, with children in Western Australia and New South Wales being diagnosed at a younger age. They found there was no difference in age at diagnosis between Indigenous and non-Indigenous Australians. Additionally, there may be a substantial gap between the age at which a reliable and accurate diagnosis of ASD is possible and the average age that children are currently diagnosed. The frequency of ASD diagnoses in Australia has increased substantially from previous estimate</p>	<p>Bent, C. A., Dissanayake, C., & Barbar, J. (2015). Mapping the diagnosis of autism spectrum disorders in children aged under 7 years in Australia, 2010–2012. <i>Medical Journal of Australia</i>.</p>
<p>Researchers examined the benefits and costs of employing adults with autism from the perspective of the employer. Fifty-nine employers employing adults with autism completed an online survey comparing employees <i>with</i> and <i>without</i> autism on the basis of job similarity. Findings suggest that employing an adult with autism provides benefits to employers and their organisations without incurring additional costs. They found adults with autism experienced specific difficulties finding employment because they had issues promoting themselves in an interview, difficulty adjusting to new work environments and routines, remembering, and following instructions, planning and multi-tasking, communicating effectively and socially interacting with co-workers. The researchers also found that adults with autism find job tasks that require systematic information processing, a high degree of accuracy in visual perception, precise technical abilities, increased concentration for long periods of time and a high tolerance for repetitive tasks more successful. Other qualities include trustworthiness, reliability, integrity, attention to detail and low absenteeism. Employers rated punctuality, willingness to work hard and attendance as the most important aspects of a job.</p>	<p>Scott, M, Jacob, A, Hendrie, D, Parsons, R, Girdler, S, Falkmer, T. (2017). Employers’ perception of the costs and the benefits of hiring individuals with autism spectrum disorder in open employment in Australia. <i>PLOS ONE</i> 12(5): e0177607.</p>
<p>Researchers, Jones, Akram, Gordon, Murphy and Sharkie (2021) explored community attitudes to autism in Australia by surveying nearly 4000 people and identified that the community’s awareness of autism does not appear to extend to an understanding how to support people with autism. People with autism may have difficulty understanding social situations, but they have similar or even greater levels of empathy than neurotypical people. In addition, within the family they can provide rich and positive complexities. Many of the barriers faced by autistic families are due to factors such as a lack of a social support system and financial stress.</p>	<p>Jones, S, Akram, M, Gordon, C, Murphy, N. & Sharkie, F. (2021). Autism in Australia: Community Knowledge and Autistic People’s Experiences. <i>Journal of Autism and Developmental Disorders</i>, 51, 3677–3689.</p>

MRA Support Guide: Supporting children with autism spectrum disorder in the 0 to 6-year environment

Montessori said, “when we deal with children with additional needs, we have to find the exact thing which will correspond to the needs of the child... the child has to be linked up with the realities which are in his environment, and he has to be linked up with himself, so that he may understand himself, be master of himself and his movements”. Finding the ‘exact thing’, which can change, depending on child’s additional need, can change the child’s classroom experience.

Recent research

Researchers Miller, Sun, Iosif, Young, Belding, Tubbs, and Ozonoff (2021) have found that unusual visual inspection of objects by infants nine months of age and older can predict later diagnosis of autism spectrum disorder. The researchers defined unusual visual inspection as looking out of the corners of the eyes, holding an object up very close to the face, looking at something with one eye closed, or staring at an object uninterrupted for more than 10 seconds.

Pre-empt the behaviour: let us say that Tony is about to have an issue (which could well involve kicking, screaming, throwing) because he wanted fruit/snack first and Ann was there first. You can step in with an action Tony can do and a comment like, “Oh Tony before you have snack, I need your help with something” (hand him something) or “I thought we would bring out the carrot grater, here hold this Tony”.

Replace negative behaviour with a place to carry it out: all behaviour is exhibited for a reason, we may not know the reason, but some behaviour is so anti-social it has to be curtailed. You are not saying that the child cannot do an action, e.g., spit - but spitting is done in the sink in the bathroom, so they may go there whenever they need to; hitting – you can hit one of your hands into the other hand; screaming – we make that noise outside/in the bathroom/etc.

One on one chats between the child and the educator: can prove to be worth the few minutes it takes to have them each day. Helps the child set their day/ease any anxiety.

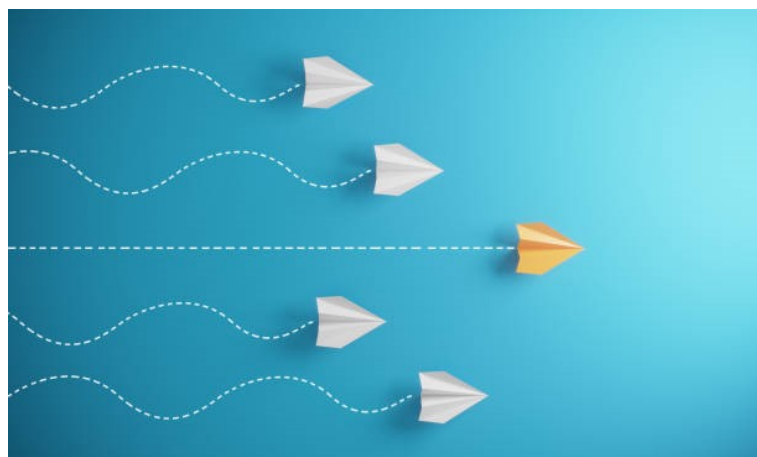
- Which activities the child might participate in during the day and what they might enjoy.
- Might curb their initial reaction of 'no' to doing an activity (or perhaps the child just walks away when asked to do an activity).
- Reiterate the rules of class, walking, respectful, use peers/adults for solutions to their issues, etc.
- Reiterate that adults help keep everyone safe, we are all here to learn, do fun activities.

Chat about friendships/buddy system: friends play an enormous role in someone’s life. You are more likely to follow what a friend does, so choosing a peer who can go ‘with the flow’ and does not mind being led are quite often good traits to look for. If there is no-one in your class perhaps an older primary child can visit daily. Explain some of the rules for, say, joining a conversation - listen so you know what the conversation is about, wait for a pause or look, join in, and say something related to the topic, take your turn by talking for a short time and then give someone else a turn. Remember to remind the child to respond to what the other person says (within the topic).

Strategies to support children with autism

- Children need limited choices.
- Children need you to speak in short, clear, and concise language.
- Children find looking and listening at the same time hard to do.
- Children have slower processing time so give children time to answer.
- Children will use standard answers (e.g., I don't know) if they feel pressured.
- Children need positive feedback to know they are on the right track.
- Children will find organisation difficult, so one folder works best.
- Children need you to avoid verbal arguments through redirection to an activity,
- Use the child's special interest to motivate them.
- Clubs or the library can be provided, as they give structure without socialising, at lunchtime to reduce stress.
- As a teacher do not take behaviour personally.
- Set up school boundaries and have clear rules and expectations.
- Have safety nets in place for the teacher, child, and peers.
- Develop good rapport with children. Be clear what is required, children are literal.
- Phrase positively all instructions and rules.
- Do not assume the child has understood what you have said - just because they can recite verbatim what you said.
- Verbal overload - no matter how verbal a child appears.
- Mean what you say so avoid nicknames, idioms, and double meanings.
- Most behaviour is a form of communication which are usually frustration and/or confusion.
- Gather information about what happens before and after the behaviour that you want to change. Children are not necessarily rude they simply do not understand or interpret body language or facial expressions.
- Improving communication skills are likely to improve behaviour.
- Do not assume this child is capable in others.

Reference: Larkey, S. (2021). Autism tips. suelarkey.com.au



Montessori Australian longitudinal study: Graduates' reflections on a Montessori education

By Sarah Beresford-Jones

“Scholastic machinery is as estranged from social life as if this and all its problems were outside its compass. The world of education is like an island where people, cut off from the world, are prepared for life by exclusion from it” (Montessori, 1949/1975, p. 11).

Keywords: Montessori, graduates, parents, transitioning, high school

Abstract:

The main aim of the study is to gauge if a Montessori education can prepare children to reach their potential in high school and beyond. The aim was achieved through engagement with the graduates of one Montessori school conducting 85 interviews with graduates and their parents. In addition, analysis from summarising 450 hours of field work. The focus of the study was a sample of 36 young people who were interviewed as they graduated from a Montessori primary (6- to 12-year-olds class) in Australia and transitioned to local high schools. The ultimate purpose is to have easy to read information for Montessori parents and staff about transitioning out of Montessori settings. None of the graduates enrolled in a Montessori high school.

The research design consisted of a series of interviews for each young person to respond accurately in a consistent framework. The parents were interviewed in a similar way to gauge their perceptions of their child's transition to high school. The data was gathered through exploring the graduates, and their parents, experiences, and perceptions of transitioning to another system of education. The research was updated in 2017 (shortly before the AMI Montessori International Congress in Prague for which this study was accepted for poster presentation) through a short questionnaire sent to eight of the eldest graduates and their parents.

The findings revealed that all the graduates perceived that they had high confidence in their own abilities and could cope with the differences they would find at their high school. Most Montessori graduates talked about the focus required to change classes each hour and different interactions with their teacher, as the teachers did not treat them as equals. Initial challenges included the increased size of the high schools compared to their Montessori school and adjusting their perspective to having their work graded. Many graduates highlighted the fact that they loved the fact that they would meet a new cohort of potential friends. The graduates valued their new teachers, if

they had a sense of humour, could cater for the student’s individual needs, treated students with respect and who made work interesting. All the graduates reported that they finished their homework and submitted it on time or before the deadline. The graduates were graded with mainly A or B grades throughout high school. They felt particularly prepared for math and English, and that concentration and building confidence had been fostered during their Montessori education.

Introduction to Study on Montessori Graduates

“Early in the 20th century Maria Montessori did envision a radically different approach to education, an approach grounded in close, insight-full observations of children rather than in adult convenience and misconception. Modern research in psychology suggests the Montessori system is much more suited to how children learn and develop than the traditional system is.” (Lillard, 2005, p. 3).

Montessori Graduates Longitudinal Study: Timeline



Dr Maria Montessori (1870-1952) held sentiments, beliefs, passions and ultimately faith in her power to change how to support children’s development, so each child can reach their full potential. Montessori stated that a human’s work must be based on three laws “love, know and serve” (Montessori, 1946/1989, p. 86). She began to completely reconceptualise children’s education as she had observed perceived gaps in their education.

The study reviews primary graduates, educators, and parent’s perspectives regarding transition from a Montessori environment. The inspiration for the project came from parents who required an answer to the question of how well children transition out of Montessori education. As an experienced Montessorian and knowing the benefits of a Montessori education, finding an answer became a mission. The study commenced in 2004, with three graduates, and since then the educational journey of 36 children who graduated aged 12 from one Australian Montessori school have been tracked. The oldest graduates are now in the workforce. In addition, the graduate’s parents were interviewed at different stages of their child’s education to assess their perceptions of any benefits or drawbacks from their child’s Montessori education.

Background of the graduates' Montessori school

The graduate's school is established in a city that is classified by the government home affairs office as a regional area (Australian Government, 2021). It was established in 1981 and in 2002 had established a primary classroom. By 2004 the school had moved to new premises and grew quickly to one six-to nine-years-old and one nine to twelve years-old class. The school is a non-profit private fee-paying school and therefore the families in general were considered to be in a high socio-economic bracket (My School, 2021). The school complied with all government, state educational requirements and curriculum guidelines. At the time of the study the school, over a short space of time, had grown from 130 to 180 enrolled students (between 60 to 80 of enrolled students were primary aged). Table 1 demonstrates the number of classes during particular periods of time. The table highlights that the toddler, and three to six classes remain steady. However, closures of both six to nine and nine to twelve classes occur during this timeframe.

Year	# of graduates	Toddler	Baby	3-6 classes	6-9 classes	9-12 classes
2004	3	1		5	1	1
2005-2006	2	1		5	1	1
2007-2009	18	1		5	2	2
2010-2011	14	1		5	2	1
2012-2014	22	2	1	5	3	2
2015-2016	18	1	1	5	2	1
2017	10	1		5	1	1

Table 1: The Montessori school's class distribution and number of graduates

The numbers of graduates at the Montessori school from 2004 to 2011 (36 graduates) and from 2012 to 2016 (40 graduates) are revealed in Table 1 taking the total number of graduates from the school to 76 from 2004 to 2016. Many factors would contribute to whether a student stays in a Montessori primary classroom and eventually graduates. AMI in the USA conducted a survey and asked over 600 Montessori parents and over 1000 non-Montessori parents about their views on Montessori education. The quality of the educators delivering the child's education and basic safety was the top priority for Montessori parents (91%). However, the survey revealed that 89% of children discontinued in Montessori after the age of nine (AMI, 2017).

Beresford-Jones (2021) in her study revealed that leadership is a major contributor to student outcomes and parent choice of school (Duignan, 2012; Halsey, 2018; Montessori, 1913/1965; Robinson, 2007). Duignan (2012) conducted research in four countries with over 1,500 school

leaders who impact classroom conditions and quality of educators in particular. Robinson’s (2007) investigations uncovered that leaders need to build trust in the school community. Halsey (2018) found “highly effective school leaders are critical in regional, remote and rural settings because they play a key role in establishing and fostering a school climate for learning and achievement to flourish” (p. 53). The prepared environment, educator, and child create a learning triangle as asserted by Montessori (1913/1965). The Montessori school in the study has not yet employed a Montessori trained leader as the head of the school. In the first few years of its operations this was due to the scarcity of securing Montessori trained educators for the classrooms let alone for leading the school.

Some of the school’s enrolments and income between 2015 to 2020 (My School, 2021) with regards to primary aged students for funding (public access to details before 2015 are not available) are highlighted in Table 2. The Australian grants and funding are collected from both Commonwealth and State initiatives for each primary aged student in the school each year. It is interesting to note that 2014 was a caretaker leadership year, however both enrolments and income increased, and the school’s history demonstrates that 2014 had the highest number of primary enrolments. In January 2015 a new leader was employed until April 2019. Over this period of time the school saw a loss of over 50% in student enrolments, many of the schools employed Montessori educators and almost a million dollars in income. In 2017, 45% of the lead Montessori educators had left the school. The table demonstrates that the number of families enrolled in the school with primary aged children declined by 54% between 2015 to 2019. Subsequently, the fees contribution and government funding between the same period also declined by \$850,000 (Table 2).

Enrolments, Income, Staff	2013	2014	2015	2016	2017	2018	2019
Primary enrolment #	110	126	107	93	90	72	58
Staff # full/part time	38	36	40	37	30	40	38
Gov grants/funding	931,720	800,719	799,382	673,950	688,170	607,138	642,793
Fees collected	1,816,137	2,097,279	2,154,093	1,874,294	2,012,486	1,535,516	1,405,536
Total of grants/fees	2,747,857	2,897,998	2,953,475	2,548,294	2,799,656	2,142,654	2,048,329

Table 2: My School information on the school’s enrolments and income

[NB: Major external events occurred from January 2020 with Australian bush fires and Covid 19]

Background of the Graduates and their Families

The families in general were considered in a high socio-economic bracket (My School, 2021) and the graduates were of mixed abilities. The average length of attendance in the Montessori school was nine years. Figure 1 highlights that 34% attended the school for nine or ten years (from 18 months of age), 30% for nine years (from three years of age), 23% for six to eight years and 13% joined the school in their primary years and attended for one to three years.

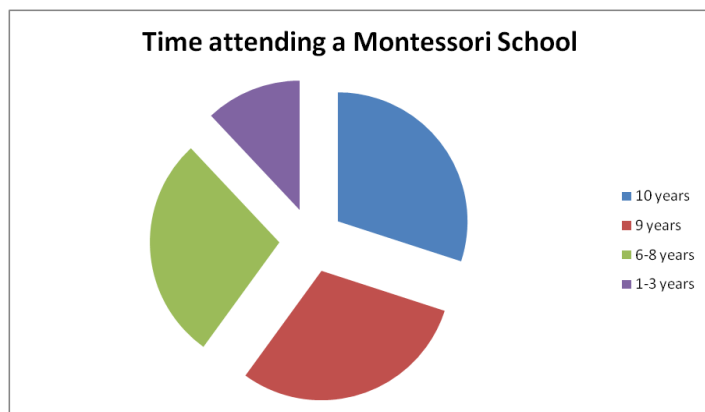


Figure 1: Time graduates attended the Montessori school.

Graduates Choice of High School

The Montessori school feeds into 22 public high schools and 19 independent schools across the city. Although families travelled across the city to attend the Montessori school it is interesting to note that within five kilometres of the Montessori school there were five high schools, three public and two independent schools. Of the 31 graduates, 15 had transitioned to these local schools, 11 graduates enrolled at the public schools and four graduates enrolled at two independent schools (Table 3).

Chosen high school	31 graduates who had enrolled 2004-2010
S (Public)	1
O (Independent)	3
T (Public)	4
AD (Public)	6
M (Independent)	1
BG (Independent)	5
GG (Independent)	4
CH (Public)	2
RC (Independent)	2
KS (Public)	1
MC (Independent)	1
MMC (Public)	1
TOTAL	6 Independent = 16 graduates 6 Public = 15 graduates

Table 3: Montessori graduates chosen high schools

Literature Review

Some research has been conducted in the area of Montessori students transitioning to mainstream schools, including Peng (2009) in China and USA studies include Hart Rice (2017), Lillard and Else-Quest (2006), and Mallett and Schroeder (2015). No research in this area appears to have been carried out in Australia.

Beresford-Jones (2021) stated that Montessori developed a ‘Theory of Child Development’ to guide children to reach their full potential. Montessori researched and developed her pedagogical ideas about children using empirical methods, through extensive observation, experimentation, theory development and engaging in collaboration with other experts in the educational field (Standing, 1957). Montessori argued that the current educational approaches did not meet children’s needs or respect their innate motivations to learn and develop and required ‘new’ adults to support them (Kramer, 1976). The construction of Montessori’s theory led to Montessori method’s development being heralded as a new approach to education with the first Montessori settings being established in 1907. “This method... produces a reformed school” (Montessori, 1913/1965, p. 276) and she recommended the reformed school’s emphasis to “follow the child as their leader” (Montessori, 1956/1970, p. 7). By this statement Montessori meant that the child does not do what they want but that the educators pay careful attention to what the child is naturally drawn too, their interests and activities. The child would show what they need to do, what they need to develop in themselves and what area they need to be challenged in. Montessori’s aim was to prepare the child for life through education (Montessori, 1931/2017; Standing, 1957). Mario Montessori (1976, p. 90) explained that he started from one fundamental assumption,

“...the goal of Montessori education is the formation of the child's whole personality.”

The empirical study conducted by Peng (2009) in China compared academic achievements of Montessori and mainstream primary schools. The researcher’s examined 200 students national test scores, 50% had attended Montessori preschool and 50% had attended mainstream preschool in Taiwan. The study’s results demonstrate that achievement levels lessened as the children spent longer out of Montessori education.

The study by Lillard and Else-Quest (2006) measured academic and social skills of 53 mainstream and 59 Montessori students. The five-year old Montessori students scored better than their mainstream peers on several of the reading subtests and in some social situations. The twelve-year-old Montessori students had stronger creative writing and social skills than their mainstream peers, however reading skills of both age groups were similar.

Mallett and Schroeder (2015) conducted a study with 1,035 students in a public school in the USA, 50% were from Montessori and 50% from mainstream education. Nationally normed achievement tests were administered, and they found that time in the Montessori classroom is the factor that leads to significant differences. They stated that, “the impact of Montessori education on academic achievement might be a cumulative effect which comes to fruition with sustained time in a Montessori classroom” (p. 51).

Hart Rice (2017) interviewed six students and four teachers about their experiences in high school after attending a Montessori setting. The high school teachers found that the Montessori graduates engaged in advanced coursework and performed leadership roles in high school. The graduates spoke of their Montessori education as having prepared them well for the process of transitioning into mainstream settings socially and academically.

Research Design

Two of the Montessori school leaders and board members were approached and approved the study. The parents of graduates were approached to inquire if they and their children would be part of this study, and all agreed. Finally, the graduates were contacted and asked, and they all agreed. In subsequent years each time an interview was due to take place, both parents and graduates were consulted for permission. The board and leadership of the school were given regular updates of the study. Additionally, the school community were informed about the study’s outcomes through newsletters, the school year books and when the researcher published and distributed the study in 2011. The interviews were scribed in front of the graduate or parent to facilitate accurate recordings of their responses or written by the student or parent themselves if they had answered the questions by email instead of face-to-face interview. Furthermore, the first ten graduates were provided with a journal notebook to write down thoughts on the transition. However, it was discovered that no graduates used the journal for the project, so future graduates were not provided with one.

The sampling process and frame (Robson & McCartan, 2016) for the study were drawn from the population of graduates from one Montessori school in Australia. A balance was struck between the depth and breadth of data to make it manageable over the years of the study. All the participants were known to the researcher making it difficult to lessen any bias. Steps implemented to counteract bias were utilising the same questions for every graduate and parent. Additionally, transcribing interviews in front of the graduate or parent.

The participants being included in the study needed ethical considerations. Therefore, their consent was sought, and parents were present during the graduate's interviews at home. Additionally, the parents were sent the questions ahead of the interview to support their decision to allow their child to answer questions. The researcher also provided regular updates to the school community with a copy being gifted to every family at the school at that time, as well as the graduates and their families, and copies were added to the school's parent library.

Purposive nonprobability sampling was utilised to gain plenty of the most appropriate data (Yin, 2002). Through hearing from graduates as well as their families, a broader range of data was examined. The sample in this study would be representative of the characteristics of the wider Montessori community and generalisability. Participants did not receive payment for their contribution however, the participants knew they had contributed to informing Montessori research. The sample size is N=36 Montessori graduates.

The sample consisted of any graduate leaving the Montessori school at the end of Year 6 (aged 12). The length of time attending the Montessori school, or their academic abilities were not considerations. The study started with three graduates in 2004 and followed 36 by 2011 and was updated in 2017 with eight of the eldest graduates.

The first interview with the graduates was conducted before the graduate left the Montessori school. The second interview was performed 6 months after they had left Montessori and begun at high school. The third interview was organised during their second year at high school. A selection of the oldest graduates was contacted in 2017 for an update. The parents were interviewed when their child had spent six months in high school.

Potential risks for the research and participants of the study could include physical discomfort, producing negative psychological states, socially through examining their relationship with school. Confidentiality was assumed and maintained by the researcher. Minimising these potential risks included collecting only essential information on the participants, coding personal information early in the project and secure storage.

Triangulation method was used in this study, which is the collection of data from multiple sources of information to enhance the credibility of a study through cross referencing more than one source (Stringer, 2007). The theory behind triangulation is that by implementing this approach findings can be supported by different participants. Various views were collected on transitioning from a Montessori primary environment to high school from the sources being utilised in this study,

graduates, and their parents. By using the triangulation approach the research gained a deeper understanding of the phenomenon being investigated (Denzin & Lincoln, 2008).

Data Collection

Mixed methods were utilised for data collection through sampling, interviews, and standardised testing data. The main types of data collected were narratives of stakeholder perspectives. Access to the data collected is limited to the researcher. The data is unidentifiable, and data is stored in cloud storage. The interviews consisted of questions requesting participant information. When writing questions for the study the aim was to keep language simple, questions short, avoiding double-barrelled or leading questions, and making sure that the questions mean the same to all participants (Robson, 2011). The researcher when selecting cases for the study used one specific criteria, that was that all the students were graduating to high school from the same Montessori school.

Data Analysis and Interpretation

In the study the data analysis process identified how graduates perceive their transition to high school. The interviews' design and implementation were supported by face-to-face interviews, either on school grounds or in a graduate's home, with the parent present in the home, or by email distribution. The participants were contacted to find a convenient time to meet. The researcher collated the collected data responses.

The analysis searched for coding, patterns, consistent themes, and data reduction in the data collected. The process of locating key words and themes and developing a matrix clearly drew conclusions. The method of data analysis for the qualitative data followed coding the describing language and jargon, defining, naming themes, and finally describing the data and analysed narrative.

Findings 2004 to 2011

What sort of adjustments did the graduates make in their transition?

When interviewed before they left the Montessori school, 100% of graduates perceived that they had high confidence in their own abilities and could cope with the differences they would find at their high school. Some were obvious changes that they mentioned of experiences that were never part of their Montessori education, such as not being obliged to complete homework regularly. Some

of the graduates were looking forward to wearing a uniform and most to forming new friendships. Most graduates adjusted by the end of their first term to any new routines, which just became part of the whole high school experience.

Throughout there was general excitement by the graduates about the transition to high school with some students struggling more with the change coming than others. One 12-year-old wrote to their new high school saying,

“I’m going to be 12 soon and I go to Montessori school. I think Montessori covers more subjects in a hands-on way which makes it easier to transfer into a different system. I have gained confidence by teachers focusing on me, what I need to learn, without comparing me to other kids. The teachers don’t care if I flunk a test or not, so I keep my cool when it’s test time. Lastly, I feel I can speak to you, in public and help the younger children. I like Montessori a lot, but I feel I can cope in any school”. (Graduate 2).

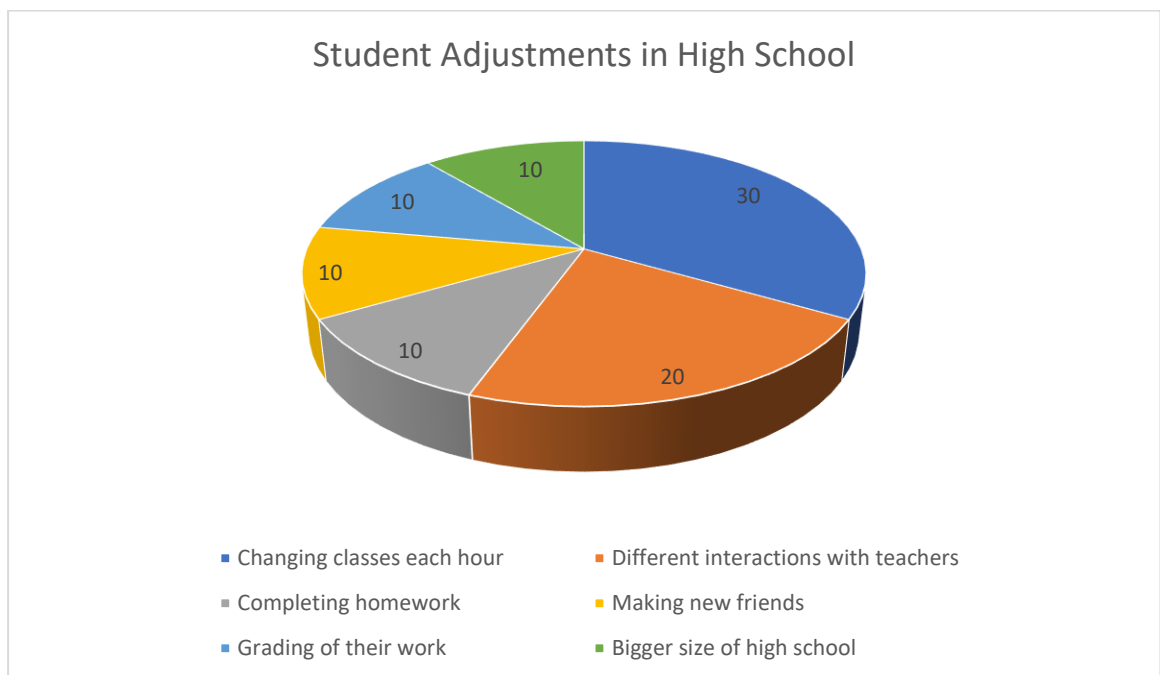


Figure 2: Student’s adjustments in high school

As Figure 2 demonstrates most Montessori graduates talked about the focus required to change classes each hour. Many stated that their interactions with their teacher was different as the teachers did not treat them as equals. The graduates responded to having to complete homework with either enthusiasm or “just had to get it done” (Graduate 10). Other initial challenges include the increased size of the high schools, adjusting their perspective to having their work being graded,

however, many highlighted the fact that they loved that they would meet a new cohort of potential friends.

What were the student's favourite subjects at the Montessori school?

Generally, if graduates loved English, for example, at primary level they also loved it at high school. Favourite subjects in Montessori were math (35%), English (30%), art and music (15%), science (12%) and sport (8%). However, as they journeyed through high school, they found that a large factor in their enjoyment of the subject was if they liked and respected the teacher. Additionally, if they perceived that the teacher liked and respected them.

The qualities the graduates valued most in teachers

The graduates stated that teachers had to have a sense of humour and needed to be able to cater for each student's needs, such as, setting extension work for those who finish set work quickly. Other qualities were teachers who made the work interesting and treated the students with respect. The graduates liked more 'laidback' teachers who were slow to anger. It was made clear through the interviews that graduates had a built-in 'phoney reader' and could tell the researcher which teachers they thought did not want to be in the classroom at all.

Graduates completing homework

Only 20% of the graduates stated that they enjoyed the homework set for them at high school. 55% said they just got on with it quickly; 20% said it takes a long time to complete; 15% leave it till the last minute and 10% complete their homework during school hours. Some just do the bigger projects first (which have higher marks towards grades), and the smaller ones later. All seemed to finish their homework and submit it on time or before the deadline.

The graduates academically in high school

Graduates were graded with mainly A or B grades throughout high school (Table 3). Each state and territory have their own grading system in high school, but in general, most of the grades fall between A to F (Oz Studies, 2021).

Grade A is called 'excellent', for marks of 85% and above.

Grade B is called 'good', for marks between 70 to 84%.

Grade C is called 'satisfactory', for marks between 51 to 69%.

Grade D is called 'limited', for marks between 31 to 50%.

Grade E is called 'very low', for marks between 26 to 30%.

Grade F is called 'fail', for marks below 25%.

Subjects	A	B	C		Subjects	A	B	C
Year 7					Year 8			
Maths	66%	44%			Maths	50%	50%	
English	66%	44%			English	25%	63%	12%
Science	66%	44%			Science	25%	63%	12%
LOTE	42%	42%	16%		LOTE	63%	25%	12%
Art/Music	33%	50%	17%		Art/Music	25%	50%	25%
Year 9					Year 10			
Maths	75%	25%			Maths	67%	33%	
English	25%	63%	12%		English	67%	33%	
Science	75%	25%			Science	33%	67%	
LOTE	75%	25%			LOTE	67%	33%	
Art/Music	37%	63%			Art/Music	33%	67%	

Table 4: Subjects, graduates, and grades

[LOTE (Language other than English) included Japanese, Korean, Italian, Spanish, French]

Table 4 demonstrates that when analysing grades, maths marks were lowest in Year 8 at 50% A grades. English marks were lowest in Year 8 and 9 at 25% A grades. However, science was lowest in Year 8 and Year 10 at 25-33% A grades and LOTE was lowest in Year 7 at 42% grade A's. Meanwhile, art and music were lowest in all years with an average of 32% grade A's.

Graduates considering further education

From the age of 12, the majority of graduates (96%) were looking at carrying on studying to the end of Year 12. By the age of 15, those same graduates were contemplating their enrolment for university studies.

Part-time work of graduates

Only 20% of the graduates who were 15 years old were asked this question. 25% of the graduates worked in hospitality whilst 75% received money from their parents. The graduates who did not work were given an allowance and did not see the need to work.

Graduate participation in after-school activities

Each year saw differences in which activities the graduates liked to participate in. By Years 10 to 12 they had narrowed their choices down dramatically. It is worth noting that Tae-kwondo was held after school at the Montessori School the graduates attended.

Year 6 Tae-kwondo, scouts, choir, horse-riding, archery, gymnastics, tennis, swimming, Japanese, music, circus, first aid cadets, guides, volleyball, piano, dance, sail, violin, cricket, Australian Rules Football (AFL), golf, pottery, soccer, Chinese and flute.

Year 7	Tae-kwondo, scouts, choir, horse-riding, hockey, tennis, circus, First aid cadets, guides, piano, swimming, flute, oboe, drama, rock climbing, soccer and Chinese,
Year 8	Horse-riding, dance, tennis, archery, Tae-kwondo, Japanese, First aid cadets, guides, piano, swimming, flute and art.
Year 9	Sail, tennis, Tae-kwondo, Japanese, cricket, AFL, swimming and piano.
Years 10-12	Tae-kwondo, tennis, cricket, Zumba, gymnastics and dancing.

Graduate perceptions of attending a Montessori school

The response to this aspect of the study brought positive responses from the graduates with some highlighting particular subjects such as maths and English as feeling particularly prepared for. Other graduates emphasised that concentration and more confidence in handling adult interactions had been fostered during their Montessori education (Table 5).

Graduates Year	Graduates Responses to attending a Montessori school
7 (12-13 years old)	<p>Learned things in Montessori that we won't be tackling till college. Montessori ran at my pace, but high school runs slower. Especially with my dealings with adults. In certain respects, as I do well in some things like English extensions. The standard of work at Montessori is higher so I am fairly advanced. Especially in math and English. I have covered things in Montessori that my peers in high school have not and vice versa. In math, especially decimals. Science, especially periodic tables. English, especially patterns in sentences. Helped me understand – I feel I learnt more because of freedom of Montessori and using the materials. Helped me in history and geography, interpreting things more easily and understanding what the teacher means. Montessori is like prep for high school as I learnt to listen in class.</p>
8 (13-14 years old)	<p>I feel I can talk to adults more easily and feel more confident. Adult interactions I can handle. I still feel more advanced. The materials really helped in Montessori, especially the math. I can concentrate really well. Can cope with work as Montessori taught me beyond what I need to know. I love learning and have attention to detail. Especially in math and English, I find I am able to keep up with everything.</p>
10 (14-15 years old)	<p>I can picture the materials in my head. I feel well organised and feel I can cope with anything. The way I approach tasks. I am good at organising my ideas. I did not need the teacher as much as others in the class. In Year 7 I was 'marking time' (had studied it all in Montessori) and half-way into Year 8 I started learning new math information. I feel Montessori gave me more groundwork.</p>

Table 5: Graduates perception of benefits of gaining a Montessori education.

High school teacher’s comments from end of year reports

A sample of high school teacher’s comments about the Montessori graduates’ work and attitude to learning were collected for analysis (Table 6).

Graduates Year	Graduates Responses
7	English – “carefully researched and planned. Delivered with confidence” Science – “terrific contributor in class” Geography – “written work displays excellent geographical understanding and detailed analysis” House Tutor – “academic performance has been excellent, but must focus on the marking criteria when completing assignment work”
Graduates Year	Graduates Responses
8	English - “his poetry assignment was creative and well-presented” Society and Environment – “produced a well-researched and written prehistory report...has shown strong initiative in his own research. He is encouraged to develop his editing skills and spend time regularly revising his work” History – “his opinions are well considered and insightful”
11 and 12	English - “a great style to your writing – a wonderful voice developing. You are direct, natural and effective. You make your points clearly...your insight is obvious” Biology – “you are a disciplined and motivated student” Geography – “you consistent, open, willing approach to class made it possible for you to test your excellent critical thinking and geo-literacy skills”

Table 6: High school teacher’s comments about Montessori graduates

Parents comments

Once their child had transitioned to their high school, parents were interviewed for their feedback including how they perceived their child’s attitude to learning, social development and their response to homework.

Questions about high school	Parents Responses
<i>What is the attitude to learning, eg: class participation, research skills?</i>	During her first year she has been very interested and eager to go the ‘extra mile’ with assignments, she has confidence to speak in class & presents sound arguments. Good, very open, most teachers’ are great but respect does not always go both ways. Our child seems comfortable and confident with teachers. Fabulous, really good, enjoying learning. Generally positive. Teachers comment that she should participate more in class but she personally does not like to. Research skills are generally good. Teacher said she was confident, well-organised, well prepared.
<i>From your point of view what is their response to homework?</i>	Enthusiastic for Year 7 then enthusiasm declined until Year 10.

How is your child's social development?

Very anxious at first, jumps right in, now homework is regularly completed. The child does not feel right if they have not done it.
He is responsible for his own homework.
Enjoys and loves it. Generally enthusiastic, gets it done on time with minimal nagging.
She would rather not do it but does take it seriously and tries very hard.

What are some of the characteristics that your child has?

Very social, my child wants to go to school every day (even if given the option for time off) not for the work but to spend time with friends.
She is at a 'girls only school' which is the right choice for her, has a close group of friends all in different situations.
He joined a homework group, teachers mentioned he was respectful to adults/peers.
Above average compared with her peers, she has a lot of common sense and is mature and reliable.
Blossoming. She quickly found friends and has remained with that group.
Fine, socially engaged during school.

What further education are you hoping your child will consider?

High confidence, high self-esteem, will stand up for other children, generous with friends, helpful and patient with helping peers with their academic skills.
Mature for age, confident, thinks before acts, trustworthy.
Confident, keen, interested.
Love of learning, love of going to school, confident, and can talk to peers or adults.

How has your child coped with a different structure of learning, e.g., curriculum?

Most had discussed College and University.
Not decided yet but will be done in conjunction with child.

Finds it restrictive as they would like to learn more in depth but is discouraged by the child's teachers.
After initial difficulties, fine. More physical differences than intellectual, e.g. walking between classes and carrying books.
Seamlessly.
Took about a term to get comfortable.

Table 7: Parents perspective of their child's transition to high school

In 2011 some Montessori graduates were randomly picked to talk at the Montessori school's parent education evening (Beresford-Jones, 2021). All the graduates came with a parent and some of those parents also gave their perspective (Additional information).

"Nothing occurs in isolation. You can't say I have a good attention span because I went to Montessori it is always going to be a product of many different things. I think Montessori allows all the other influences to combine and it does make you open minded and I think it has really helped with my schooling as its brought it all together and showed me that I can

be the best person I can be by learning what I want to learn, what I am good at and what I enjoy. I don't think I would have had that at a mainstream school. I don't think you can say I can do this because I went to Montessori, but I think you can say I can do this because Montessori has helped me do this" (Graduate 1).

"One of the best things in Montessori was being able to choose what we would like to work on next and that has helped in my high school as I was able to organise my homework, which we don't do in Montessori, but it helped at my next school. One of my favourite memories is probably playing 'tips' with like the whole school, just so much fun" (Graduate 2).

"I felt Montessori gave me organisation of time. It sets you up to think about it logically. Whereas so many people we know leave it to the last minute and so they don't do the best of their ability. We knew how to approach assessments" (Graduate 3).

"Other students do not understand why I love learning. More than half the class today were more interested talking about dates than talking about algebra! Students from Montessori know that there is a time for everything, to chat or concentrate" (Graduate 4).

"Sometimes it is hard for the children to see what an advantage they had. As the years are going on I find that I feel that sending my children to Montessori was the right thing to do whereas I was not so sure of that in the beginning. As a general observation they have all fitted in really well, breezed straight in, no issues, handled things better than the other children. I am not saying that other schools don't prepare their children. Our children have learnt to be independent and have research skills, learnt how to organise themselves it has not been an issue. I would encourage you to leave the children in this system because they turn into really good children who just fit in where ever they are" (Graduate Parent).

Reflections/Conclusions

The Montessori school where the study was conducted had various staffing issues over some of the years in the primary classrooms (e.g., graduates stated that they had five different educators during their primary years). Montessori educators usually have the same children for a three-year period before they move to the next stage and again repeat this three-year timeframe with the next educator. This has meant that some graduates in this study have not received what would be considered a usual Montessori education. Some graduate's parents stated that their children did not necessarily have the detailed preparation for high school that previous graduates had received to help with their transition to a traditional environment.

However, the overall impression received from the graduates interviewed was that:

- their Montessori education had been a great help.
- they had high confidence in their own abilities.
- they all had an eagerness to learn new things.
- they all had above average academic achievements.
- all looked forward to being part of a bigger school.
- they all looked forward to different aspects of high school (drama, team sports and science laboratories).

Emotionally the graduates had high confidence and self-esteem, e.g., one graduate used the word “superior” (Graduate 1) another said, “I feel I can cope with anything” (Graduate 3). They said they felt quite comfortable communicating with any adults. Socially the graduates enjoyed having a larger school peer group at high school. They retained friendships with both boys and girls. Nearly all the girls said they were nervous about starting a new school whilst most of the boys felt they were not nervous at all.

Generally, parents commented on the desire for a Montessori high school. They mentioned they would change the high school curriculum to be relevant to life. They would prefer less relief teachers in the high school and more encouragement to participate in school-based activities, with more focus on social responsibility. Most were impressed overall with the high school their child attended. However, in hindsight, they felt the Montessori school had not prepared the graduates well enough to tackle homework and regular testing. Additionally, the parents perceived that the graduates were academically behind in spelling, writing and maths in some cases. Overall, the parents were happy with how the transition had progressed. The Montessori school had provided some transitioning help by general discussion and by having a former Montessori school student come and talk to the class in Year 6. The parents had discussed further education with their child. Most parents preferred more detailed parent interviews such as at the Montessori school. Some families perceived spelling at the Montessori school could be improved, whilst some families mentioned that they could have had more science experience at Montessori.

The Main Drawbacks of the Study

Firstly, the study was entirely self-funded which included professional printing and distribution of the findings to the families in the school in 2011. Leadership support, particularly around time for interviewing and transcribing, would undoubtedly have made

the study's findings stronger. Secondly, the size of the group of graduates being interviewed peaked at 36 for one researcher, unfortunately interviewing and transcribing 76 graduates (in 2016/17) was too vast at the time. Lastly, for various reasons not every graduate was interviewed every year.

2017 Graduates and Parents Update

The researcher contacted eight graduates and their parents for a response to six questions (Appendix 3). The parents were asked what they perceive as the main advantages of Montessori education in relation to their child. Cultivating a love of learning and developing self-confidence were mentioned by many of the parents. All the parents responded that their children were independent which they saw as part of Montessori self-directed learning and at the child's pace. Most parents mentioned their children had developed a sense of community and respect of others and had also gained the ability to complete tasks and practise skills so they can cultivate satisfaction in a job.

The graduates' parents all perceived the main shortcomings of the Montessori education their child had received included that Montessori success is very dependent on the school leadership. The children had very small social groups in Montessori and success is dependent on the teacher and the peer group. Many parents responded that the cost made Montessori education out of reach for many families and there appeared to be limited qualified Montessori teachers available. Some parents spoke about how teachers may miss specific skills as students avoid what they do not like, and that Montessori jargon can be detrimental to explaining the benefits of Montessori education to others.

The parents felt that in hindsight they would still have sent their child to a Montessori school as Montessori helps guide the children's direction and positive attitude to life. All the parents, when recommending it to others would suggest they look at the way the Montessori school is run by the leadership as it has such a big impact on the authenticity of the Montessori education offered. They stated that Montessori works perfectly when it is being implemented by the school well. What training the teachers have received also has massive repercussions for the children. Teacher's experience, or lack of, can have a serious detrimental impact on the overall school experience too.

Some parents perceived that the earlier years in the school were better than the primary years as the small class groups, during the 6-to-12-year ages, were seen as a disadvantage. Graduate's parents felt new parents who did not understand Montessori well enough used the school to place

their 'troubled' children and thought it was then alright to remove them from the school mid-cycle as they had been offered a place at the school of their choice.

Graduates were asked similar questions beginning with what they believed were the main benefits of a Montessori education. All the graduates would send their child to a Montessori school if one was available. The main benefits were: self-directed learning, the ability to follow their passions, teaching students how to talk competently with adults and teachers, and demonstrate respect, the practical nature of learning equipment which meets different learning needs, learning life skills as well as academic skills, independence, self-confidence, self-worth, the learning is tailored to the child's individual needs and teachers have an understanding of each child's personal development. The Montessori system instils a love of learning and encourages students to learn together rather than competing for the best marks. By being given the opportunity to interact with different age groups, peers learnt new skills and taught other peers.

The main shortcomings Montessori graduates perceived, were the difficulty of incorporating new skills and technologies that are expected in further schooling and the workplace. The school seemed less likely to develop any weaknesses, such as spelling, and if students are easily distracted or don't have much personal drive or focus the school did not support those students enough. Graduates remembered they were able to avoid certain tasks that they did not like doing such as spelling which resulted in being a poor speller. Some graduates spoke about their education having been dependent on the Montessori teacher. They also stated that to receive maximum benefit from Montessori primary education, students need to start Montessori at preschool or under three's level. Some graduates felt that the small size of the school community was limiting in terms of variety and scope of people.

When asked about technology all the graduates felt they were comfortable using technology even though they had received limited preparation on technology during their Montessori schooling. They spoke about using technology every day at work, study and at home and were comfortable using computers and other technology to a reasonable level and were quite often more tech savvy than the majority of their colleagues. Some spoke about how useful learning to touch type in Year 6 at Montessori has proved to be.

All the graduates either had or were currently participating in service to the wider community. Some of the community service opportunities graduates were engaging in include volunteering in the church community, treasurer of the local sailing club, and mentoring a refugee student in their pastoral care role.

The graduates had completed various qualifications and had plans for future studies including degrees in architecture, science, global studies, interdisciplinary studies (Sustainability), teaching English to speakers of other languages, law, engineering, Year 12 certificate and completed several years of university. The graduate's future studies included a degree in Arts and Design, Master of Systems Engineering, degree in Genetics and Science (majoring in mathematics, specialising in quantitative biology and bioinformatics). Graduate's employment comprises the public service, personal trainer, tutor students in maths and defence personnel. Further plans for the future were mentioned as Master of Architecture, travelling to new places, business in the private engineering sector and living, working and studying overseas.

Conclusion

The study gauged how Montessori education prepares children to reach their potential in high school and beyond. Thirty-six graduates were interviewed as they left one Montessori primary school in Australia and transitioned to local high schools. Additionally, graduate's parents were interviewed and added as part of the study's findings. The research was updated in May 2017 through a short questionnaire sent to eight of the eldest graduates and their parents.

The findings revealed that all of the graduates perceived that they could cope with the differences they would find at their high school due to high confidence in their own abilities. Graduates focused on changing classes each hour in a larger school, interactions with their teacher and adjusting their perspective to having their work graded. They loved having the opportunity to meet new friends and they valued teachers with a sense of humour, who catered for each student's needs and made work interesting whilst treating students with respect. Grades were mainly As and Bs throughout high school with graduates highlighting that concentration and building confidence had been fostered during their Montessori education.

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Additional information relating to this study

Parent's questions regarding high school (2004 to 2011)

What is your child's attitude to learning, e.g., class participation, research skills?
From your point of view what is your child's response to homework?
How is your child's social development?
What further education are you considering?
Would you change about the curriculum?
Would you change anything about the school overall?
What is your relationship with teaching staff, school community and Principal?
Do you consider your child had an advantage by attending a Montessori school?
Were there disadvantages for your child attending a Montessori school?

Student's questions regarding Years 7 to 9 in high school (2004 to 2011)

Do you feel any different from other students at high school?
What sort of adjustments did you have to make?
What are the biggest changes at this school?
What do you miss most from a Montessori environment?
What are your favourite subjects?
Do you get homework/assignments? How do you organise it?
Do you feel you had an advantage by attending a Montessori school previously?
Do you feel you had any disadvantages by attending a Montessori school?
How are you coping academically, what are your grades?
Are you enjoying the social side of school life? Do you go to social events?
Do you see friends from Montessori?
Which teachers do you like the best and why?
Which school events do you like the best and why?
Have you joined any teams or clubs run by the school?
What after school activities do you participate in now?

Student's questions regarding Year 10 to 12 (2004 to 2011)

What are your favourite subjects?
Do you feel you had an advantage by attending a Montessori school previously?
Are you considering university?
Do you have a career in mind?
Which teachers do you like the best and why?
Have you joined any teams or clubs run by the school?
What after school activities do you participate in now?
How are you coping academically?
What are your grades?
Will you take a gap year & are you learning to drive?
Do you receive money regularly, e.g., part time job/allowance? (Some questions were asked to see how far the student's independence had grown as they matured).

Letter for Parent and Graduates 2017 Update

I hope you and your family are keeping well.
I had some exciting news recently as I had submitted a proposal to the Montessori International Congress concerning the Longitudinal study that I have worked on for a number of years with you.

I received an email from Angela Murry, Journal of Montessori Research, saying that my proposal has been accepted and could I please present the research poster at the International Montessori Congress July 27-30 in Prague.

I said I would update this Study by contacting some of the young people, hence this email. If you would like to continue with this project, I have a few questions and would like your assistance please to answer the questions below (even its just one- or two-word responses). Parents and teachers in Montessori schools around the world can then use this information (although you will be anonymous). I can then collate this information and add your latest thoughts to the rest of the Study.

Questions for Parent and Graduates 2017 Update

Name: _____ Age: _____ Occupation: _____

3 main pros of Montessori

3 main shortcomings of Montessori

Are you comfortable using technology in your life to the degree which serves your interests?

Do you participate or are interested in service in the wider community?

What studies have you completed so far and what are your plans for future studies?

Current work/study and future plans:

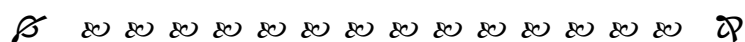
Would you send your child to a Montessori School? Y/N

Author:

Sarah has been fully committed to the values and concepts underpinning inclusive education with over 30 years' involvement in Montessori education. She holds Montessori diplomas from birth to 12 years, Masters of inclusive education and leadership, completed Montessori philosophy research studies and early childhood leadership training. She has worked in many schools, both in the UK and Australia, as class educator, school leadership roles. She keeps up-to-date and informed about best practice, and studies education philosophies, including Montessori's Theory, in great depth. Employment has included: intervention specialist for 5- to 18-year-olds; University of Sydney Indigenous tutor; Montessori deputy principal; Montessori classroom educator; Montessori inclusion coordinator/head of department; Montessori professional developer of various initiatives, researcher, and author who has published two children's books – 'Once upon a story there was Maria Montessori' and 'Once upon a story there was even more about Maria Montessori'.

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Some of Montessori thoughts on transitions

“...one of the secrets is open doors. In our schools there is no such thing as a closed door... the open door to the other rooms gives a freedom of circulation, between the different grades, and this circulation is of the utmost importance for the development of culture.”

[Montessori, M. (1946/1989). *Education for a new world*. Oxford: Clio Press. (p. 65)]

“Successive levels of education must correspond to the successive personalities of the child. Our methods are oriented not to any pre-established principles but rather to the inherent characteristics of the different ages. It follows that these characteristics themselves include several levels. The changes from one level to the other at these different ages could be compared to the metamorphoses of insects. When an insect comes out of the egg, it is very small and has particular form and colouring. Then, little by little, it is transformed even though it remains an animal of the same species having the same needs and habits. It is an

individual that evolves. Then one day something new happens. The insect spins his cocoon and becomes a chrysalis. The chrysalis turn undergoes another slow evolution.

Finally, the insect comes out of the cocoon in the form of a butterfly. We can establish a parallel between the life of the insect and hat of the child. But the changing traits are not so



clearly defined in the child as in the insect. It would be more exact to peak rather of "rebirths" of the child. In effect, we have before us at each new stage a different child who presents characteristics different from those he exhibited during preceding years... In each period we rediscover a growing being, but one who is a quite different person every time. The last two levels will be considered consecutively... Only a thorough analysis leads to the discovery of the changes that occur continuously in the child...

It is precisely the changes that have the greatest bearing on the method of education.

[Montessori, M. (2005). *The formation of man*. Kalakshetra Publications (p. 1)]

MRA Guide:

Initiatives to retain children throughout their primary Montessori education

In the USA, AMI conducted a survey of over 600 Montessori parents and over 1000 non-Montessori parents about their views on Montessori education. One of the findings revealed that **89% of children discontinued in Montessori after the age of nine** (AMI, 2017).

Some initiatives schools can do to change this statistic.

Discuss in staff meetings effective retention strategies. These might include:

Choice of words educators use with families – “*when* your child goes to the 6-9/9-12 class they will be doing...”

Younger children require visits to their next class from at least 6 months before they transition.

Year 6 graduating program will be effective so parents know their child will be supported transitioning to high school. This might include a past student returning to talk to the children about timetables, homework and other realities of high school life.

Overall.

Consistent approach to genuine Montessori education in every class.

Clearly explain child’s learning/progression and areas of improvement and how that will be achieved.

Sense of community is nurtured in Montessori environments and is missed by parents when their children move on.

Educators that are dedicated and Montessori trained and listened to by the leadership of the school

Respecting individual learning styles whilst obtaining identifiable results

Share with parents the research within this publication demonstrating that Montessori education develops a person’s independence, makes them socially responsive, inclusive, respectful, eager learners, able to embrace change. Acquiring the ability to focus, organise, to ‘think outside the box’, connect with people, see learning as fun whilst gaining research and organisation skills. Show them proof through inviting your graduates back to talk at an education event in your setting.

“Modern research in psychology suggests the Montessori system is much more suited to how children learn and develop than the traditional system is.” (Lillard, 2005, p. 3).

Montessori Keystones: Spring 2021

Autism spectrum disorder strategies:

Montessori environments for children with autism spectrum disorder

Montessori graduates:

Graduate's perspectives of the reality of transitioning to high school

*Find out how you
can contribute
to future editions*

Montessori said
*“What I want now is
a body of colleagues,
research workers,
who will examine what I have already done,
apply my principles as far as I have gone,
not in a spirit of opposition or conviction,
but as a matter of pure experiment.”*

(Kramer, 1976, p. 262)