PROBLEMY WCZESNEJ EDUKACJI

ISSUES IN EARLY EDUCATION

Getting out of the Montessori box?

Wychodząc poza schemat Montessori?

w numerze m.in.:

- **André Roberfroid**, *Getting out of the box! Keynote speech delivered during the Annual Montessori Europe Congress, Gdańsk, Poland, 2023*
- **Christine Quarfood**, *The multifaceted Montessori movement, and its pioneers*
- **Judith Neff**, *The theological language of Montessori education and its effects on educational processes in childhood*
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Critical engagement in (Montessori) pedagogy – foreword to the issue

This collection of research articles provides a diverse and generous consideration of Montessori's inspiration and legacy, and challenges us to think about Montessori practice in the 21ˢᵗ century. Inspired by André Roberfroid's keynote presentation we see it as our responsibility to introduce Montessori to the wider education community by taking a critical look at what she has to offer to children and their families today. As Roberfroid puts it – it is not how we use the materials – it is in the fostering of freedom, respect, and solidarity that the benefits of Montessori education lie.

André Roberfroid's call to action urges the Montessori community to reflect on our role as educators by championing education based on freedom, respect, and solidarity for all children! The children of today have the power to be the heralds of the New World which Montessori was desperate to create – a world which if it is to evolve rather than self-destruct will have to be very different from the one imagined by, not only Montessori, but also by many of us guiding children in their education today. Roberfroid's deeply held belief is that it is within our power – but we need to be brave, bold, and without fear. We need to engage and share our Montessori Treasure Box, which, if we do, will hold new treasures and possibilities, not only for the children of today, but for humanity and the world.

Christine Quarfood in her paper titled: *The multifaceted Montessori movement and its pioneers* outlines the initial success of Montessori's unique perspective of education and juxtaposes it with views of several of her contemporaries, many of whom were her supporters. It also draws our attention to the strong influence of the AMI organization, which to this day, is seen as the guardian of the Montessori legacy. It offers an important foundation for our understanding of aspects of the aims and aspirations of Montessori education today.

In her article: *The theological language of Montessori education and its effects on educational processes in childhood*, **Judith Neff** provides us with opportunities for personal reflection on the relationship between theology and pedagogy as evident in Montessori's own writing. It also highlights some of the possible tensions which can arise in Montessori's writing between her scientific approach to the understanding of children and her use of theological language which underpins the writing. It further asks the question – what does it mean for Montessori education today – how has it impacted our practice? And the question which leads to further academic investigations – how has it influenced the expansion of Montessori education beyond the Christian context?

Jarosław Jendza is the author of the paper titled: *Acting "out-of-the-box" in Montessori teachers' narratives – research report*. Jendza challenges us to seek some answers to "acting out of the box" in the practical example of the adults "following the child" rather than "guiding the child" in the use of Montessori learning materials. It also gives us an opportunity to reflect on Montessori's own Amsterdam lecture from 1938 as transcribed by Phoebe Child, and recently shared by Sid Mohandas on "Montessori Collective" Facebook page.

> It is unnecessary to reproduce exactly the same phenomena. It would not really be desirable for every new thing arising to be mechanically reproduced by everyone else […] But we must seek for some practical instruction, a guide to direct us along the new path. You notice that I am really saying "We can only repeat what Maria Montessori has already said," isn't that so? For it is quite clear that we must say to ourselves, "Let us then pay attention to what is indicated by the child himself [sic!], because there is, in the psychological nature of man [sic!], that which is able to afford us practical direction and guidance" (S., Mohandas, Montessori Collective, Facebook, 29.12.2023).

Susanne van Niekerk in her investigation into the extent of, and reason for, the disparity between theory and practice in Montessori early childhood settings in South Africa highlights the challenges and tensions between the principles of Montessori pedagogy and their implementation in the classroom. Her research examines the importance of the initial Montessori teacher training and continued professional development, and considers external pressures which contribute to the challenges in daily life in the Montessori classroom. Her suggestion of the important link between Csikszentmihalyi's Flow and Montessori's concept of normalization presents us with opportunities for further research and evaluation of the benefits of Montessori pedagogy in the context of today's education of young children.

Per Gynther and **Eva-Maria Tebano Ahlquist** present a paper titled: *Writing and reading in Montessori preschools in the digital age – A valid approach?* Gynther and Tebano Ahlquist's article explores one of the key Montessori discoveries that "children write before they read" in context of their sensory-motor preparation and as challenged by today's use of computers at the time when traditionally children learned to write. This research contributes to our discussions on the benefits of Montessori education at a time when computers provide an opportunity to not only physically write a letter or an article, but AI can construct letters, articles and essays on a particular topic – thus challenging some of the accepted norms and requirements of our educational systems.

Romali Rosales Chavarría shares her research experiences of introducing a second language in Montessori schools in Scotland and in Mexico. In her article titled: *Additional Language Learning in Montessori settings: insights from an implementation process of a Second Language Programme in a Scottish Montessori school* she acknowledges the anecdotal nature of shared knowledge between practitioners and the need for sensitivity to the learning context and school cultures. She highlights the need for further research in this widely established practice of second language teaching. She discusses some of the

challenges of moving from limited-scope approaches to wide-scope approaches of introducing a second language to children – and considers the benefits of the almost tokenistic (once a week lesson in second language) approach and working with the immersive approach which requires not only commitment from the staff and school, but also patience, sensitivity, and flexibility on the part of the educators.

Helen Prochazka's article *Bringing the words: Towards a Montessori system of remedial support for language development from birth to six* addresses the oral language deficit, in two- and three-year-olds, which is a focus of many current UK initiatives introduced to children in a variety of early years provisions. She suggests that Montessori pedagogy offers us effective tools which could address this deficit and could help young children communicate their thoughts, ideas, and feelings. This observation could be an invitation to further research by developing a framework for documenting children's language learning in Montessori settings and demonstrating the value of a prepared environment and sensitive support from adults and peers.

In the article: *„Aid to life" – Montessorian pedagogy at the service of the autism spectrum children* **Monika Pawluczuk-Solarz** addresses the opportunities for learning of children with specific needs, which is clearly a situation in which practitioners need to follow the child and thus "act outside the well-known box". Pawluczuk-Solarz shares her experience of working with these children using the principle and materials of the Montessori approach. She challenges readers to think about the benefits this approach could bring to families and settings, particularly to those who are not able to access Montessori education for their children. We do applaud her commitment to children so as to benefit them from the Montessori legacy and think this is not only a paper, but also an approach that could make Montessori more open and accessible.

In the next article *Designing a system of learning materials to explain climate change to children*, based on her dissertation, **Lucy Blackwell** offers us an opportunity to share in her cyclical process of evaluating the materials designed to help children understand climate change. Her approach and design demonstrate a deep commitment to work within the parameters of Montessori pedagogical principles and to be respectful not only to adult, but also to children's feedback. Her modest and positive approach to her research is a fitting inspiration for all of us who are inspired by Montessori's legacy.

Maria Angelica Paez-Barrameda is the author of the study titled: *The Impact of Successive Montessori Programmes on Cognitive Achievement*. The study critically engages with the Montessori approach by empirically evaluating the cognitive outcomes of successive Montessori education. It also provides robust evidence supporting the efficacy of the Montessori Method, aligning with Montessori's opinion that education should be an integrated continuum. The research underscores the importance of continuity in Montessori education, suggesting that prolonged exposure to Montessori programmes enhances cognitive development and college success. By highlighting significant differences in academic performance among groups with varying Montessori experiences, the study advocates

the implementation of the full Montessori spectrum. The study calls for future research to further validate its findings, indicating a critical engagement with the existing research gaps in Montessori education.

The volume ends with an interview or rather a conversation between **Barbara Isaacs**, The President of Montessori Europe and **Jarosław Jendza**, the guest editor of this issue of the journal. This interview can be read in at least three different ways. Firstly, it is the personal story of a person with enormous professional experience, a person involved in Montessori pedagogy for several decades. Secondly, this interview provides important guidance for those who are at the beginning of their teaching career, pointing out that a critical and distanced approach to Montessori pedagogy is crucial if one really wishes to humbly follow the child. Thirdly, this interview is a true treasure trove of knowledge, not only about Montessori pedagogy itself, but about child-centred education in general.

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Getting out of the box! Keynote speech delivered during the Annual Montessori Europe Congress, Gdańsk, Poland, 2023

Editorial note

This keynote speech was delivered by André Roberfroid during the Annual Montessori Europe Congress in Gdańsk (University of Gdańsk, Social Sciences Faculty, 30 September 2023). The editor of this volume decided to publish the speech in an unmodified form to keep the message original and in order not to lose its powerful potential that contributed to the title of this special issue as well as to the motto of the next Montessori Europe Annual Congress 2025, which will take place in Oslo, Norway, from 9 to 11 May. The theme of the Congress is "Montessori: Out of the Box". The only edits include linguistic and grammar details and punctuation.

André Roberfroid is AMI's Global Ambassador. He was UNICEF Deputy Executive Director for programme and strategic planning, in charge of developing the overall UNICEF strategies in the field of child health, education, nutrition, and child protection until his retirement in 2003. His past work involved work for children in Congo, Gabon, Central African Republic, Equatorial Guinea, and Cameroon. In 1984 he became senior planning officer in the UNICEF regional office for the Middle East and North Africa, and advised governments on policies for children in all the countries of the Middle East (from Morocco to Iran). André was President of AMI from 2005 to 2014. André Roberfroid has been committed to child rights for most of his life, having worked for UNICEF for more than 30 years, which then led him to connect with AMI and the global Montessori community. Often referred to as a child rights militant, André also contributed to the Convention on the Rights of the Child. André continues to support AMI in his role as Global Ambassador.

We educators need to get out of the box!

We need to get out of the Montessori method box!

Lech Wałęsa said:

> The sole and basic source of our strength is the solidarity of the workers, the peasants and the intelligentsia, the solidarity of the nation, the solidarity of people who seek to live in dignity, truth, and in harmony with their conscience.

Nelson Mandela said:

> One of the challenges of our times is to re-instil in the consciousness of our people the sense of human solidarity, of being in the world for one another.

Let us first remind ourselves that Montessori is much more than a pedagogy, more than a method!

We like to call ourselves a social movement. I believe that our mission for a new world is precisely to launch that social movement. It does not exist yet. A social movement is made of people who get together because they share a set of values, a common wisdom, and a corpus of knowledge. Our values proclaim the primacy of the child, and his or her role as a transformative actor of humanity. Our wisdom demands that we observe and follow the child. The knowledge is the product of Maria Montessori's scientific work and the lessons we have learned over one hundred years.

We, Montessorians, are the recipients of this heritage. We have the obligation to preserve and develop it. Our first challenge is therefore to be the very strict promoters of excellence in its implementation. However, we did not achieve the impact necessary to make a social change. Notably we did not reach the critical number of followers to create a movement, and we did not initiate the paradigm change in the role of children as agent of change.

As Maria Montessori said in a New York Times article of May 7, 1933:

> a world without illusions and dominated by fear of the future must rely to rebuild itself, not on technology, nor on social conquests, nor even on the liberation of women, but on the emancipated child. The child, finally freed from adult domination and free to fully realize his or her own personality, is the real hope for rebuilding society and creating a new world.

These words define our mission for the new world.

We are talking about the fundamental role of education in shaping the future of the planet.

What is this new world, this new world that we are confronted with?

Let's first reflect on ourselves. The essential characteristic of the human species is an irresistible need to progress, made possible by a unique capacity to learn from the past to create a future that will be driven by our constant will to improve our living conditions through observation and understanding. Yet our world appears to be in shamble, dominated by doubts and anxiety.

Our organized societies fail to offer to their citizen a political, social, and administrative structure that allows individual freedom and promotes the possibility for each member of society to develop and practise his or her personal talents, a clean and sustainable environment, economic conditions necessary for decent life, an effective health infrastructure, and particularly an education opportunity to allow children to develop the talents needed

for an improved future, and, above all, a lasting peace among all human beings, without which none of the above would be possible. The prominent role of education to meet these challenges is obvious and not disputed, although not always given the needed attention.

Most enlightened observers tell us that the world is affected by profound and complex transformations. This is true, but it is not new. Since its origin, *homo sapiens* has been constantly evolving. Humans have been motivated by the will to secure access to the resources needed to survive, and to protect themselves from the dangers of an often-hostile world.

With its intelligent powers of observation, mankind was able to free itself from the accidents of an unpredictable nature. Notably by discovering the domestication of fire, plants, and animals. This was undeniable progress, which led to the improvements in food safety and quality.

**Yet, with every liberating advance comes
a new responsibility for those who benefit from it.**

This new freedom requires discipline in its use, to minimize the unintended, but potentially dangerous, effects of uncontrolled or excessive use. The current state of our way of life shows us how liberating progress can sometimes turn into a self-destructive practice. The progressive concentration of larger populations in villages or urban setting supported by a common territory makes joint management of the group concerned necessary. Land management, water management, management of the cropping calendar, management of the conservation, processing and distribution of produce, management of the safety of people and property.

In other words:

We have to get organized!

We have to make collective decisions!

**We have to make choices from among options that are necessarily varied and
sometimes contradictory!**

**We have to devise a mechanism that would enable a decision to be taken that would
be binding on everyone!**

We have to define power and the conditions for acquiring and exercising it!

We should observe here that the necessity to define power immediately triggers the need to define freedom, or *vice versa*. This quest for the Holy Grail has marked the history of our species from the Bronze Age to the present day.

Many solutions, whether authoritarian, populist, democratic, utopian, revolutionary, or reformist, have been tried. They have stemmed from often respectable reflections on the nature of human societies, ranging from divine right to human rights. Some attempts were based on the recognition of the diversity of the members of the species, divided into sexes, races, castes, or social classes. Others proclaimed the fundamental uniqueness of the species, making equality the absolute value. History shows that many of these theories have

been applied, often with some success. But all of them eventually failed, either as victims of their internal contradictions or destroyed by outside intervention.

The truth is that the quest continues and will continue for as long as our species exists, because – as Laozi said, **this is not the end of the road that counts, but the road itself**.

As it was often the case during our long history, our time is going through a difficult new period of profound change. For the first time in its history, humanity is living in a finite world. With the exception of a few tribes surviving in the equatorial forests, **interdependence has become the common rule**.

Withdrawal into oneself is no longer an option. No country can ignore the constraints caused by its reciprocal dependence on the rest of the world. For the first time, the human species occupies almost the whole of planetary space. In the past, we could try to solve our problems by occupying open spaces, emigrating to under-populated areas, or even by conquest. In reality, we are at the dawn of a new transformation that will challenge us to assume our condition as a universal species and implement mechanisms to manage a larger, more complex world. That is our new world. Such a transformation is particularly difficult as we have progressively developed a tendency to identify ourselves by highlighting the differences among cultures, races, religions.

Identities of all kinds have become instruments of separation, mutual fears, and aggressivity.

As in the past, there will be many attempts, failures, setbacks, and ephemeral successes.

We have to be prepared to live with uncertainty, and that scares us!

And yet, the long history of our species has been one of victory over uncertainty. So, let's not lose faith: we'll get through this crisis like all the others. As I speak, our planet and the humanity that occupies it seem to be victims of a kind of vertigo. Anguish, fear, and confusion are the most widespread feelings.

The past lures us, the present eludes us, the future recedes.

The past lures us like a distorting mirror. For conservatives, it brings up images of a time when life was organized around simple, generally accepted social systems and human values. We know, of course, that this perception of the past is nothing but a myth, that this "golden age" never existed. However, this image of a happy, harmonious past continues to serve as a foundation for conservatism, which idealizes the past and sees change as inevitably catastrophic.

The present eludes us. Globalization is not the result of the political will of a temporarily dominant player who would find it in his interest to assert his empire or his hold on the world. Nor is globalization the result of elaborate plots hatched by economic and financial predators who see it as an opportunity to assert their domination over the world. Globalization is the result of the evolution of history, of science and technology, of man's natural propensity to seek and discover. As soon as mankind invented agriculture, and thus

enabled the generation of surpluses, it became necessary to exchange, first goods and then services. This need for exchange forced people to meet, get to know and negotiate with people outside their immediate circle.

That's why the future is slipping away. The difficulty of reading the present prevents us from imagining the future. This situation is unprecedented and extremely complex. Until now, exchanges between clans, tribes, countries, and empires have been based on a logic of power relations. The multiplication of encounters and exchanges in a finite world has rendered this logic inoperative. And yet, international relations continue to be essentially governed by power games and conflicting strategies. The illusion remains that the use of force can help solve problems by imposing a solution from outside. How many failures will it take for us to understand the dramatic ineffectiveness of this strategy?

The world has lost its bearings, and the values that should guide our personal lives, our social constructs and our international relations are increasingly perceived as blurred, confused and even old-fashioned. This is a major challenge.

Today we give the image of a society blinded by fear and paralysed by hatred!

We see the future only in the distorting mirror of a misunderstood past!

We reject the contribution of multiple talents!

Are we overwhelmed by a morbid depression? Do we want to build a present without a future? Do we want to suffer the deadly boredom of a world without diversity, where everyone is locked into a narrow identity? Are we resigned to living in a culture-free society where tomorrow will forever be a repetition of yesterday? Do we want to die of boredom rather than face uncertainty, rather than welcome the creative differences? Do we have to accept that our species is living through the end of hope?

Certainly not. Let's not forget that for millennia, the multiple talents of men and women all over the world have overcome conflicts and built cultures. They have dreamt of a world where the future is nourished by the successes of the present, where diversity favours creation.

A world in which freedom is founded on respect for nature and other human beings, and spreads through active solidarity among all!

We are "the product" of millions of years of slow, sometimes destructive, but always positive evolution. The world's youth has never been so committed, so creative, so innovative. The remedy to our worries and anxieties lies in the confidence we have on these new generations. Our responsibility is to assist them in creating the most stimulating environment, in allowing them to discover their talents and make the best use of them.

I am, and we are, confident that they will succeed in projecting humanity into a new age. Let's observe our children with humility, and not seek to protect them, but to strengthen them, as we face the ultimate challenge of our species:

Resolve the contradiction between individual freedom and collective organization.

Our role and responsibility as Montessoriansis to give the children a chance to face this challenge. It is a terrifying task. It will demand all of us to… **leave our comfort zone within which we feel free from fear and surprises!**

Maria Montessori discovered initially that the education system was operating inside a box and that box was the factor limiting the development of the talents of children. She quickly realized that the liberation of children could not be achieved inside the boxes.

So not only did she create a revolutionary method, but also offered a new opportunity to practise it "outside the boxes."

She created a loose structure that made it possible to open schools practising the methods and offered training opportunities. She did it outside all the existing boxes. And it worked. She strongly refused to restrict the use of her name; she was concerned that protecting the name would limit the free spread of the message.

She believed in the emergence of a movement that would fundamentally change the relationship between adult and children. Children would finally be given the possibility to acquire the true freedom to realize their personality and develop their talents. Such a change would help humanity to move into a new age that some scientists call the Anthropocene, the age of humans. Maria Montessori tried many times to challenge the world to face that change.

Let us recognize that it has not worked yet!

We, Montessorians, could not resist the appeal of the boxes and… **we created new boxes to retrieve our comfort**.

Inside our new comfortableboxes, we recreated a safe environment in which we could develop the new model of schools away from challenges and criticism. The good news is that inside our boxes the model has worked. Children in the boxes do develop their talents and capacities. Our model has been certified by modern science, particularly brain neurology.

Should we celebrate? Unfortunately, not!

Not only are we still inside boxes with little impact on the outside world, but the various Montessori boxes rarely cooperate and indeed often are in a conflicting relationship.

Should we despair? Fortunately, not!

The time we have spent in boxes was probably necessary to consolidate the practice created by Maria Montessori, to test it with a good number of children in many different areas, to put in place an effective training process and so on. Most likely, we could not have done it without the protection of the box in a world of education dominated by competition and sometimes hostility. The good news today is that, supported by our experience, **we are now ready to face the world and to become a true international movement**.

A movement opened to all educators and parents who have observed the effectiveness of the method, but even more importantly share one universal basic principle and three founding values:

The basic principle is that the child is recognized as the builder of the future.

And possess in an embryonic form the capacities to play an effective role in the continuation of the permanent progress of the human species. Only the child can develop their capacities in a stimulating environment, free from the adult's domination. Such recognition is indispensable for the implementation of a successful education process. The three founding values are:

Freedom is a concept that is usually misunderstood.

Freedom is not a state of affairs, freedom is not given, nor gained from someone else. Freedom is a practice that requires the capacity to make the best use of our talents to make decisions while respecting the world around us, human and nature. Freedom exists potentially within every individual and must be nurtured during the education process. Freedom is a building block of human societies, and the ultimate indicator of permanent progress. It cannot succeed without the next value.

Respect is a condition for freedom to exist and survive.

No society can survive if its members do not respect each other. The human community cannot survive if its different components do not respect each other. Life will not survive on earth if different species do not respect each other and jointly respect our common nature. We observe in our Montessori classes that respect is easily practised. Children have a natural respect for each other until such time that adults teach them differently. The third value is solidarity.

Solidarity: a recognition that when obstacles occur, they cannot be overcome by one individual. The need to respond to new challenges requires creativity and joined efforts.

The practice of this value is not necessarily natural. It requires training and observation. I do believe that the time has come to face the challenge. I suggest we start with a global reflexion on the principle and the values.

Let us dare to leave our box and allow the world to hear our message!

Let us join the global conversation on the future!

Let's get out of the boxes and recognize openly that the future is in the hands, the brain and the genius of the children that we contribute to liberate!

Let us recognize that the Montessori pedagogy is not an end, but an instrument that we offer to the children!

We are an instrument to open the gates for the children to create the new world.

Let us liberate our creativity!

Let us be opened to each other efforts!

Let us practise the solidarity that we all preach!

Let us overcome our egos for the sake of children!

We received a treasure from Maria Montessori. We have been keeping it in a safe box. It is time to offer it to the world. I believe that the time has come for a new movement. Not a movement for children, but a movement with and by children.

Edited by: Jarosław Jendza

STUDIES
AND
ARTICLES

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The multifaceted Montessori movement, and its pioneers

Summary

On the eve of World War I, a new movement took shape, promoting the educational ideas of Maria Montessori. The success story of the Montessori method is well known, but how are we to understand the organizational network surrounding it? This article explores some aspects of the Montessori movement's early history, drawing on social movement theories. In the first part, I argue that the Montessori movement of the interwar era should be conceptualized as a social movement organization (SMO) with AMI as its social movement infrastructure (SMI) and with its own specific cognitive praxis. In the second part, I approach the movement from another angle, more from the inside so to say, to assess how three Montessori pioneers – Anna Maria Maccheroni, Claude Albert Claremont and Nazareno Padellaro – understood and tried to implement this cognitive praxis. I particularly focus on their widely differing interpretations of Montessorism – the movement's central creed about the child's liberation.

Keywords: Montessori movement, cognitive praxis, Maccheroni, Claremont, Padellaro

Słowa kluczowe: ruch promujący metodę Montessori, praktyka poznawcza, Maccheroni, Claremont, Padellaro

On the eve of World War I, a new movement took shape, promoting the educational ideas of the Italian medical doctor Maria Montessori. Initiated on a small-scale basis, as part of a social housing project in 1907, Montessori's innovative preschool programme rapidly expanded into a large-scale enterprise, crossing national and cultural borders. By the 1930s there were Montessori schools and preschools in about sixty countries around the world, and her seminal work from 1909, *Il Metodo della pedagogia scientifica*, had been translated into a dozen languages. The success story of the Montessori method is well known, but how are we to understand the organizational network surrounding it?

This article sets out to explore some aspects of the movement led by Montessori, describing its development during the interwar period, and discussing how to draw the line between the movement at large and the diverse Montessori societies composing it, as well as between close disciples, sympathizers, and fellow travellers.

The first part deals with questions about the organizational structure of the Montessori movement, drawing on sociological movement theories. Although the movement had

a commercial side, marketing teacher training courses as well as patented teaching aids – the famous "Montessori apparatus" – it also had a social agenda, challenging established notions about childhood, parenting, and schooling. The liberation of the child was the motto of the Montessori movement.

The second part takes a closer look at three Montessori pioneers, who paved the way for the Montessori method's introduction into new national and cultural contexts. A microhistorical biographical framework is applied to assess how these movement intellectuals – Anna Maria Maccheroni, Claude Claremont, and Nazareno Padellaro – interpreted the Montessorian creed about the child's liberation. What precisely, did the child have to be liberated from, and what was the ultimate purpose of this liberation? In what ways could the practical methods of the movement bring about a solution, and how should one conceptualize the truly liberated child?

The Montessori movement as a social movement

Social movements have often been considered as paradigmatic of modernity. Connected as they are to the growth of the public sphere, they have undoubtedly contributed to political and cultural transformations. The very term "social movement" was coined at the beginning of our modern era, in the wake of the Enlightenment and the French Revolution. While historians have duly studied the classical labour and women movements of the nineteenth and early twentieth centuries, and the educational reform movements of the same period, researchers in the field of social movement studies have focused almost exclusively on the contemporary movements of post-industrial society, emerging from the 1960's. For instance, student movements, peace movements, antiracist movements, and environmental movements, to name just a few. According to Berger and Nehring, research attempting to bridge the wide gap between the social sciences and history is still in its infancy. They cite Koselleck's claim, that historical research is "in need of theory," adding however the remark that "sociological research can also benefit from the rich insights of historical research in order to test its theoretical assumptions" (Berger, Nehring 2017: 2–6, 13–15).

In a similar way, attention has been drawn to the lack of dialogue between researchers in the field of social movement studies and educational researchers. For a long time it was, as Tricia Niesz points out, a question of mutual neglect. "Not only did the field of social movement studies overlook topics of education and learning," but likewise, most educational researchers of the last century "appeared somehow immune to the influence of this large and active field of scholarship" (Niesz 2019: 224–225). In fact, even within the sociology of education field, interest in social movement theories was scarce. There were several reasons for this failure of communication, for instance a top-down perspective on educational change, which, according to Kai Heidemann, identified "elites, experts, and authorities" as the "primary agents of education reform." The many ways in which "grassroot actors and social movements can act as influential drivers of educational politics and

reforms «from below»" (Heidemann 2022: 41–42), consequently received less attention. And although recently, social movement scholars have increasingly addressed educational themes, most of this research concerns adult education programmes of the more informal kind and learning processes occurring within activist and protest groups, with no bearing on the established educational system. As Heidemann concludes, "the institutionalized setting of formalized education" still remains "a highly significant but relatively under-theorized realm of social movement and agency" (Heidemann 2022: 43, 47).

From the horizon of intellectual history, I have in my previous research on Montessori as a public intellectual of the interwar years, reconstructed the culture-critical message delivered by her movement, and how it was received in the wider European debate context. Many interpreters, in their attempts to explain the "Montessori phenomenon," have emphasized Montessori's charismatic leadership style, as well as her innovative educational method. They all agree about her movement's impact but seem to consider it as simply a reform movement of the professional kind, operating in the school sector, rather than as a social movement. Although Kramer in her biography focused on Montessori's celebrity as a movement leader, she also lamented the fact that Montessori preferred gathering her followers around her, making them "the nucleus of an organization which became a universe of its own" Kramer 1976: 378) instead of cooperating with other professional educationalists. Povell, in her study of Nancy McCormick Rambusch's revival of American Montessori education in the 1960s, applied the social movement term in relation to the professionalization process initiated with the creation of The American Montessori Society (AMS) 1960, but did not discuss whether the term could be applied to the movement led by Montessori (Povell 2010: 112–137). For my own part, I have found helpful the distinction made by sociologist Håkan Thörn, between movements intent on accomplishing reforms within the established system, and more genuine social movements. Movements of the latter kind have the utopian dimension in common, sharing the conviction that "a radical transformation of society is possible and that it can be brought about through collective action" (Thörn 1997: 46–47).

I will here indicate some important turning points in the early stages of the Montessorian enterprise, in order to demonstrate the relevance of social movement theories and terminology for the history of education. In my opinion, the Montessori movement of the interwar years presents a clear-cut case of the kind of entrepreneurial social movement organization (SMO) discussed by researchers of the so-called resource mobilization paradigm. With this school of thought, focus shifted from an actor perspective to a collective group perspective. The crucial question was no longer why people joined a movement, but how a movement managed to mobilize resources in order to achieve its aims (Buechler 2011: 116–117).

Initially, most movements have a rather loose network structure. Social movement communities (SMC) recruit members in the local community and are usually led by some highly dedicated key-figures. However, for a movement to get off the ground and gain a wider influence, it is necessary to mobilize as many followers as possible around the common cause, while also developing a more formalized organizational structure capable of sustaining collective action for a longer period of time. External support is of the utmost importance.

As Berger and Nehring state, "it is a well-known fact that social movements depend on the (mass) media to reproduce themselves, to frame their message and to broadcast their claims" (Berger, Nehring 2017: 8). Apart from media attention, elite patronage provides financial support, and supportive associations, although not part of the movement – for instance churches, self-help societies, and school institutions – facilitate the transition from movement formation to social movement organization, (SMO). In most cases successful SMO's present a differentiated internal structure, with a clear division of labour between leaders, paid staff and volunteers, as well as formal membership criteria and clearly defined statutes and procedures (Mc Carthy 1996: 141–143; Kriesi 1996: 152–154).

The Montessorian enterprise fits well into this pattern. During the initial phase 1907–1909, when there was a loose network, but not yet a real movement, support was obtained from a few local institutions promoting philanthropic pursuits. Under such auspices Montessori's first Casa dei bambini saw the light of day, as part of a real estate company's social housing project in the slums of Rome. In 1908–1909, the socialist self-help society Umanitaria in Milan opened two Montessori preschools for working-class children, and a Casa dei bambini for orphans was meanwhile run by Franciscan nuns in Rome. There was also much moral support from feminist organizations and high society ladies (Alatri 2015: 75–96, 119–135) The turning point from local network to movement came in 1909, when elite patronage from Baroness Franchetti financed the printing of Montessori's *Il Metodo*. This manual explaining the new educational method, became the proud manifesto of the movement now taking shape, and served as a textbook for the many Montessori teacher training courses succeeding one another, from 1909 onwards (Quarfood 2022: 11–13).

A phase of rapid expansion followed in 1910–1915, when the new educational movement was internationalized. Montessori gained worldwide fame, and her schools spread across the globe. Helpful in popularizing the movement's message was the press. "McClure's Magazine's" promotional campaign, launched in 1911, prepared the ground for the English translation of *The Montessori Method*, 1912, which immediately became a bestseller (Gutek, Gutek 2016: 57–108). As public interest grew, the first national Montessori societies were established, in the United States and in the United Kingdom as early as 1912, and in Italy in 1913. On her lecture-tour in the United States 1913, Montessori was greeted by the "New York Tribune" as "the most interesting woman in Europe" (Kramer 1976: 186). During World War I, she returned several times to the United States, and her live-model Montessori class exhibited at the San Francisco Panama-Pacific Exposition 1915, aroused great interest (Quarfood 2022: 14, 31–36).

Around this time began the process of consolidation, transforming the wide Montessorian network into a social movement organization with centralized leadership. The policy document "General Regulations for the Formation of an Authorized Montessori Society" presented in 1915 to the American branch of the movement, stated that no school or society could use Montessori's name without her authorization. Furthermore, the memorandum declared that in matters relating to teacher training and teaching aids, Montessori societies had no permission to act independently. Already in 1909 Montessori had patented her didactic

materials, which were generally distributed under licence from her directly (Murray, Douast 2023: 199–201; Gutek, Gutek 2016: 197–201).

Another step towards increased professionalization was the introduction of paid staff, such as secretaries and lawyers. After a schism with the Montessori Society of the United Kingdom, in 1914, Montessori employed C A Bang as her authorized representative for all kind of business transactions and contacts with authorities and media in the United Kingdom. This process of gradual professionalization also meant a differentiation between ordinary movement members – mostly teachers – and a cadre of leaders recruited from this group, making a career within the movement (Kramer 1976: 244; Quarfood 2022: 67).

One might perhaps argue that this shift towards centralized control was more due to commercial interests than to idealistic goals. Remarking on the dual character of Montessori's enterprise, how the movement quickly "became a business" with Montessori as the "brand name," Kramer nevertheless pointed out, that Montessori as a freelance movement leader had no other option but to "support herself and her dependents on the proceeds of her training courses and the royalties from her books and didactic materials." Neither did this consolidation process and the commercial aspect diminish the radicalization of the Montessori movement's message, which notably intensified during the 1920s and 1930s (Kramer 1976: 156; Quarfood 2022: 53–55).

The New Education Fellowship (NEF) created in 1921, functioned as a social movement infrastructure (SMI) uniting reform educationalists of different nationalities and pedagogical creeds. While many educational organizations affiliated themselves to this broad network, the Montessori movement held its distance, disapproving of NEF's eclectic spirit. Having created her own social movement infrastructure – Association Montessori Internationale (AMI) – in 1929, Montessori became somewhat more inclined to cooperate. The first AMI congress was held together with the NEF congress in Helsingör 1929, and the same arrangement of joint conferences was repeated in Nice 1932. The relationship between the two network organizations remained however tense, as is clear from the state of research concerning NEF (Brehony 2004: 748; Van Gorp et. al. 2017: 256–270; L'Ecuyer 2020: 655–672; Kolly 2021: 51–57).

To conclude, I would like to refer to the concept of cognitive praxis, as defined by Ron Eyerman and Andrew Jamison. They distinguish three dimensions of a social movement's cognitive praxis, roughly corresponding to the "knowledge constituting interests" discussed by Jürgen Habermas. In the first place, there is always a shared worldview, articulating demands for the transformation of social structures, a creed providing movement members with a larger framework of meaning, thus contributing to new perspectives and new social identities. In my previous research on the Montessori movement, I labelled this worldview "Montessorism." Secondly, there is also a more practical dimension, involving the means to achieve the movement's goals, such as new technologies proposed by the movement in alternative to traditional methods and procedures. This corresponds, of course, to the very structured educational tools and school environment designed by Montessori. The third dimension of cognitive praxis concerns the movement's communication with society

at large, the ways in which the movement gets its message across, for instance through participation in the wider public debate, through conferences, study-groups, and various kinds of networks facilitating the dissemination of the movement's knowledge production (Eyerman, Jamison 1991: 45–119). I dwelled particularly on this subject in my previous study, situating the European branch of the Montessori movement in the wider debate context of the interwar years.

Three Pioneers

I will now present three Montessori pioneers who contributed in different ways to the dissemination of the Montessori movement's message. The pioneers in question published articles and other texts, making it possible to assess motivational drives behind their commitment to the Montessorian cause. Although not established intellectuals in the academic sense, they will here be considered as movement intellectuals, of the kind described by Eyerman and Jamison.

Maccheroni (1876–1965)

Among the many pioneers assisting Montessori in her quest, the musically gifted teacher Anna Maria Maccheroni was in a class of her own. She belonged from the very start to the innermost circle of trusted collaborators. Maccheroni made a significant contribution in spreading the Montessori pedagogy, and she also designed the musical programme of the method, a musical education based on rhythmical movements, inspired by Dalcroze's eurythmics. As unassuming as Montessori was self-confident, Maccheroni in her memoirs described herself as a "nullity," grateful to serve the magnificent movement for the child's liberation. Macc, as Montessori called her, possessed in a high degree the powers of observation and the practicality required of a Montessori teacher. She claimed she had learnt more from observing Montessori's interaction with the Casa dei bambini children, than from reading her books. As the daughter of two teachers, she seems to have been almost predisposed for the teaching profession. Since childhood, she had heard discussions about school matters at the dinner table (Maccheroni 1947: 1–2; 1956: 8–9, 17, 21; Alatri 2015: 97–98; Pironi 2022: 57–62).

Before attending the first Montessori teacher training course in August 1909, Maccheroni had already worked for almost a year as head of the Umanitaria Society's Casa dei bambini in Milan. Despite a chronic affliction which led to several outbreaks of illness, Maccheroni became the solid rock Montessori could lean on. Highly appreciated for her ability to master all the technicalities of the method, she was entrusted with important assignments, one after the other. In 1910 she was called back from Milan to Rome, in order to direct the Franciscan convent's Casa dei bambini, which served as demonstration class for the teacher training courses 1910–1911. In 1915, she started up the Spanish experiment with Montessori education. At a liturgical conference in Barcelona, that year, she presented the

Montessori method as an instrument for religious education (Maccheroni 1956: 37–48, 55–75, 97–113; Alatri 2015: 99–102; Pironi 2022: 62–67). To a younger colleague in the 1950s she described the Barcelona years as the happiest period of her long teaching career. It was in Barcelona that she further developed the musical education programme, in cooperation with the music teacher Señor Gibert, of the Barcelona Montessori school (Galeazzi Fresco 1966: 11–14).

While World War I raged, neutral Spain offered the Montessori movement a safe refuge. After the war, Montessori would reconnect with her many European followers, assuming control over a movement which for some years had developed rather freely. Maccheroni was now sent on an inspection tour, to prepare the ground for the forthcoming Montessori training course in London in 1919, and to determine which of the British Montessori schools held an acceptable standard. In 1922, she was sent to Amsterdam on a similar mission (Maccheroni 1956: 119–129, 132).

In addition to this supervising role Maccheroni also functioned as a movement intellectual, writing many articles about the method in the movement's journals. The NEF journal *The New Era*, to which she contributed an article in 1920, presented "Signora Maccheroni" in the following way: "She has the authority of one who has accompanied Dr. Montessori from obscurity to fame; and to her devoted co-operation is due in no little part the practical detail of the method, especially on the musical side, which has now been so fully developed" (Maccheroni 1920: 35).

The article described the process from disorder to order in a Montessori school, probably the one in Barcelona, with children between 2 1/2 to 11 years. Maccheroni had to start with a few older children, "who had no other «education of the movements» than that which children receive at home who have to «keep still» and who are helped in everything" (Maccheroni 1920: 35). It was only in the third year, when the class was wholly formed of children admitted at the age of three, that full results were obtained: "Discipline had become a thing entirely forgotten, so natural and obvious did it seem for movements of the body to be tranquil, and for work to be «ordered»" (Maccheroni 1920: 36).

Maccheroni was to write the first biography of Montessori. *A true Romance. Doctor Maria Montessori as I knew her*, published 1947, also appeared in a somewhat expanded Italian version, in 1956. The memoirs described some episodes in the Montessori movement's early development, from the faithful assistant's perspective. Although many names were mentioned, the main focus was on matters concerning curriculum, practical work, and child psychology. Above all, Maccheroni tried to convey the respect for children's capacity, as the true Montessorian spirit.

Maccheroni interpreted Montessori's message within the framework of her strong Christian faith. Adults should realize their shortcomings, see the beam in their own eye, instead of putting all the blame on the children. A central theme, especially in the Italian version of the memoirs, was Montessori's epochal discovery of the child. The child's true nature had revealed itself as rational and orderly, rather than capricious and messy, a result obtained by working diligently with the didactic materials. Through the musical exercises, the Casa

dei bambini children also acquired a graceful bearing. Short practical lessons given by
the teacher demonstrated the right way to open a door, or how to pour water from a bottle
into a glass without spilling a drop. Maccheroni recalled her experience as directress of
a demonstration class in Rome, during the 1913 International Montessori course: "How
well I remember the noise of the first days! It was not really disorder, it was only that the
children could not walk without making a noise, could not utter a word unless with a very
loud voice" (Maccheroni 1947: 41). Instead of making reproaches, Maccheroni acted as
a role model: "Every morning I did a few exercises, such as walking very quietly, talking
very softly, running on up toes" (Maccheroni 1947: 41). Maccheroni knew she had succeeded
when one of the girls, not only "walked noiselessly," but also made a drawing where "the
coloured pencil lines were so light that I could hardly see them" (Maccheroni 1947: 42).
Bodily control and self-discipline had been mastered.

Claremont (1890–1967)

The Montessori Society of the United Kingdom, founded in 1912, initially functioned
as a broad platform welcoming all reform-minded groups to join the fight for the child's
emancipation. *Times Educational Supplement* spread the word about the new approach to
child-rearing, fostering independence at an early age. "Individual work" became the catch-
word of the British Montessori debate (Brehony 2000: 118–119, 123–128; Cunningham
2000: 210, 218).

British sympathizers tended at first to focus on the message about the child's liberation,
while paying less attention to the specific methodological claims advanced by the move-
ment. In the spirit of classical liberalism, freedom of choice was considered essential, and
thus many concluded that methodological pluralism must be compatible with a Montessori
approach. Such eclecticism was however rejected by those who had attended Montessori's
training courses. As dedicated followers of the Montessori movement, they shared the con-
viction that liberty was not simply a precondition for an enlightened education. The child's
liberation could only be the end result of a process achieved through the correct application
of the Montessori method. If mixed with other educational programs, the Montessori method
would not yield the intended results. Claude Albert Claremont, who at the time of the first
London based Montessori course 1919, published *A Review of Montessori Literature*, ex-
pressed views of this kind. He was not merciful in his criticism of Montessori supporters who
embraced the freedom principle, while at the same time discarding the very method which
ensured the realization of this freedom. Although Claremont could appreciate all kinds of
pedagogical reform endeavours, he saw no reason why Montessorians should compromise
their own beliefs, for what could Montessori education offer the world, if the method was
diluted beyond recognition (Claremont 1919: 3–4, 8–9, 11–12, 16–17; Quarfood 2023: 12)?

As a participant of the 1913 International Montessori course in Rome, Claremont had
put his plans for an engineering career definitely on the shelf. He advanced to the position
of course assistant and translator at the following 1914 training course. Claremont was

deeply impressed by Montessori, whose importance for the field of education he deemed comparable with that of Darwin for the life sciences (Kramer 1976: 242). Montessori had assured him that "those who study most will always be in the forefront of this movement" (Claremont 1919: 3). To dedicate one's life to the Montessori movement was thus to serve science. In Rome, Claremont also attended the lectures of Sante de Sanctis, a prominent expert in the field of neuropsychiatry, who had been Montessori's colleague at the University. Back in England Claremont studied biometrical statistics under the famous eugenicist Karl Pearson and took courses in physiology and pathology for Ernest Starling and Edgar Kettle. Claremont registered as a member of the British Psychological Society (Claremont 1940: 5).

Claremont made several contributions to the NEF journal "The New Era," which presented him in its first number, in 1920, as a "writer who has endeavoured to obtain as profound an understanding as possible of Dr. Montessori's work" (Claremont 1920a: 11). In the article he addressed the problem of social reform. There was much talk during the war of "a new brotherhood" when "class distinctions would be obliterated," but it all came down to nothing with the peace. "The New Era" failed to appear. Mere words could not bring about social reforms, for if that was the case "one could reform the world with a telegram!" (Claremont 1920a: 11), as Montessori once wittily remarked. To change society, one had to change the mindset of the individual, through educational means. In Montessori's view both sides were right in the nature-nurture controversy. A social-environment perspective was fully compatible with a biological standpoint. "But although education can never transcend the limits set by heredity: it has as a matter of fact, never yet reached them," Claremont asserted. "We are all of us under-developed, all but partial realizations of our true selves" (Claremont 1920a: 13). Claremont went on to discuss Montessori's freedom principle, which he distinguished from the classical liberalism of Adam Smith and John Stuart Mill, as more up to date: "It has become apparent, and never more so than to-day, that the intervention of the Government is necessary at certain points of the economic system in order to enable the free forces of the individual to expend themselves usefully" (Claremont 1920a: 14). For Montessori, freedom was not merely a "removal of restrictions," the child must also be offered "the things which it needs for its development" (Claremont 1920a: 14) the best possible conditions of life.

Has Dr. Montessori made a true Contribution to Science? was the title of Claremont's next article, in the third and fourth 1920 issues of "The New Era." His answer was affirmative. Based on systematic observations in a controlled environment, Montessori's experiment was possible for others to repeat. But instead of conducting observations in ordinary school environments, she had "transformed the school itself into the laboratory" (Claremont 1920b: 84), the Montessori apparatus answered to the child's need "to co-ordinate his movements," and to "develop his senses and powers of perception by seeing, hearing and touching things" (Claremont 1920c: 117). Results were amazing. Preschool children worked "when we thought their sole wish was to play." They behaved in a dignified manner, "which we had thought was only possible for grown-ups." They took an interest in the real world "when we thought that a nightmare of vague and chaotic fantasy was the natural food for

their minds" (Claremont 1920c: 115). With the apparatus, Montessori believed herself to have extended hygiene "to the realm of the mind." Just as hygiene eliminated unnecessary or injurious food stuffs, the lessons in the Montessori schools, stripped of all superfluous adornment, brought "fresh air and light" into the mental world (Claremont 1920c: 117).

Claremont's next contribution to "The New Era" was less lyrical. In 1921, the schism within the British Montessori Society deepened, between the eclectic faction closely allied to the NEF movement, and the more orthodox faction to which Claremont belonged. In a vexed letter to the editor, Alexander S. Neill, Claremont complained about the exaggerated way in which psychological inhibitions were condemned as harmful complexes, in the NEF journal. A distinction should be made between repression and the constructive mechanism of normal inhibition, enabling us "to behave as harmonious wholes, and not as disjointed bundles of reflexes" (Claremont 1921: 140–141). With the eclectic faction finally out maneuvered from the Montessori Society, Claremont's leadership position was definitely consolidated. The British Montessori Society was in 1923 granted permission to establish a Montessori Teacher Training College, with Claremont as its principal. It was first situated in Letchworth and then moved to London. Students dedicated the last term of their two years of study to Montessori's London course. At a time when the European Montessori movement was expanding in all directions, the regularly recurring London courses provided stability and secured fidelity to the method (Quarfood 2023: 12).

Returning once more to the pages of "The New Era," Claremont in 1928 described the situation within the British Montessori movement. In spite of lack of support from the authorities, the movement was thriving, with branch societies in London, Edinburgh, Glasgow, Birmingham, and Nottingham. But this was not owing to the numerous professors who had written books about the Montessori method, without having "spent even a week in a Montessori school." No, "what has been achieved has come from below" from the teaching staff, Claremont declared. Elsewhere, in Holland and Italy, the University and the government had been the moving forces, but the British Montessori movement, was "almost entirely a teacher's movement" (Claremont 1928: 75–76).

The core-group of Montessorians led by Claremont, has not received much attention. Most educational historians, like Cohen, seem to assume they were just a bunch of "worshipful followers" unable to take interest in Montessori's "pioneer investigations in early cognitive learning" (Cohen 1973: 64). Nevertheless, it was thanks to this valiant group that Montessori's legacy was safeguarded in a time of general decline for progressive education. And Cohen's description of orthodox Montessorians as uninterested in cognitive learning issues, is utterly misleading as far as Claremont is concerned (Cohen 1973: 51, 61–64). In the highest degree a movement intellectual, Claremont was the author of several popular science psychology books with suggestive titles, such as *The Chemistry of Thought* (1935). Claremont also contributed articles to scientific journals, for instance "Acta Psychologica" and "Mental Health."

With the creed of Montessorism as his guiding light, Claremont ventured into the field of child psychology, questioning the connection between play and imagination, which for so long had been taken for granted. Fantasy-play had in the Montessori preschools been replaced by more adequate behaviour, furthering the development of intelligence. But it was in no way a question of behaviouristic conditioning. In his book *The Innumerable Instincts of Man*, 1940, Claremont rejected the Pavlovian view of instincts as mechanical reflexes, adhering instead to McDougall's theory of goal-directed psychological drives. McDougall had however tied the instincts too closely to the emotions, not taking into account the possibility of a knowledge instinct. Claremont's assumption of an interaction between intelligence and instinct, the first years of life, was clearly inspired by Montessori's hypothesis of sensitive periods (Claremont 1940: 20, 27–57, 65–84, 104–110, 181; Quarfood 2022: 114–120).

For all his praise of science, Claremont was a romantic at heart, with an unwavering faith in the child's potential. Like his wife Francesca, author of colourful historical novels, he was a practising Catholic. In his literature review of 1919, he mentions how a picture in the Vatican of the Madonna lifting the veil of the *Infant Messiah* could be interpreted as symbolizing the way in which Montessori had disclosed the advent of the "New Child," which perhaps one day would save the world (Claremont 1919: 21).

Much later, in an article 1957, commemorating the fiftieth anniversary of "the first Casa dei bambini from which the whole Montessori movement had descended" (Claremont 1957: 12) Claremont referred to Montessori's dictum "Vediamo che cosa fa (let us see what the child does)" (Claremont 1957: 13) in an attempt to define the "fact-finding outlook" (Claremont 1957: 14) of "the more scientifically minded Montessorians" (Claremont 1957: 15). Through her freedom from preconceptions, Montessori had discovered the child's normal tendencies. The crucial issue was now that of obtaining recognized status for Montessori teachers, who, otherwise, would risk being squeezed out of the school system, as uncertificated. Unfortunately, British colleges granting Teacher Certificates were still pledged to old-fashioned educational methods, for the simple reason that "the majority of schools are still using these" (Claremont 1957: 15).

Nancy McCormick Rambusch, who in 1960 revived the dormant American Montessori movement, founding AMS, had in 1954–1955 completed the AMI teacher training course in London. She was not particularly impressed with the training offered by Montessori's British disciples. Too much focus was on the didactic apparatus, which however, was not demonstrated with children present. "Students had to imagine what child responses to it would be. They also needed to ponder what all of it might mean in the context of their own culture-specific educational settings" (McCormick Rambusch 1983: 32–33). McCormick Rambusch's attempt to adapt the Montessori method to the American way of life led to increasing tension between AMS and AMI, and in 1963 there was a parting of ways (Povell 2010: 61–87, 112–137). At that time Claude and Francesca Claremont had settled down in the United States, starting up AMI-affiliated schools in Santa Monica and Atalanta.

Padellaro (1892–1980)

The Montessori movement gained momentum at a turbulent time, when educational methods became increasingly mobilized for various political purposes, from the left to the right. For a decade, between 1924 and 1934, the Italian fascist regime tried to install the Montessori method on a grand, national scale. Montessori and her son Mario willingly cooperated with the regime. The Italian Montessori Society, in 1924 reorganized as the Opera Nazionale Montessori, was from 1926 led by the right-wing philosopher Giovanni Gentile, with Mussolini as its honorary president. As minister of education from 1922 to 1924, Gentile included the Montessori primary school programme as part of the major school reform he undertook (Quarfood 2022: 129–144, 169–176).

The alliance between Montessori and Mussolini has been compared to a marriage of convenience, where both parties disregarded differences of opinion, while furthering their own aims. Montessori hoped that Mussolini would ensure the consolidation of her movement, and Mussolini was of course interested in a method known for its efficiency in instilling discipline at an early age. But there were also aspects of the cultural critique of the Montessori movement that could appeal to the regime. "It is the adult that must change, not the child," Montessori declared in her opening speech to the 1930 International Montessori training course in Rome. Some fascists seemed to have interpreted this refutation of adult power as fully in line with their own doctrine. Nazareno Padellaro, for instance, believed that parents and schoolteachers had far too much influence over future generations, and that youth organizations like the Balilla movement, created in 1926, had an important task as a counterweight to this influence (Quarfood 2022: 222–225).

When Padellaro became involved with the Montessori movement, his political career was on the rise. He had published two essay books on school matters, *Scuola Fascista*, in 1927, and *La Scuola Vivente*, 1930. In his capacity as superintendent of the elementary schools of Rome, Padellaro was appointed administrative head of the state-sponsored Scuola di Metodo Montessori, the Montessorian teacher training school inaugurated in 1928. During the 1930s and 1940s, he also edited schoolteacher journals – "Il Primato Educativo" and "Tempo di Scuola" – propagating Giuseppe Bottai's school reform, a reform which strengthened the fascist party's grip on Italian schools. In 1940, Padellaro was promoted to director general of the elementary schools of Italy (Meda 2013: 266–267; Quarfood 2022: 205, 223).

The regime's support of the Opera Nazionale Montessori intensified in 1926, the same year as dictatorship was definitely established, and the youth organization Opera Nazionale Balilla was created. Montessori, who was on friendly terms with Balilla's leader Renato Ricci, seems at first to have misjudged this organization as simply another scout movement, without realizing the underlying purpose of political indoctrination. She also got along well with Padellaro, who was honoured with the task of writing a new foreword to her *Manuale di pedagogia scientifica*, published in a revised edition in 1930 (Quarfood 2022: 176, 184–191).

Padellaro's foreword focused on Montessori's child-centred message, hardly mentioning the practical method described in the handbook. With Montessori's return to Mussolini's

Rome, the "cult of childhood" had returned to its place of origin. Padellaro reframed Montessori's message within the fascist myth of Imperial Rome. He interpreted the legend of Romulus and Remus as the first expression of this cult. Wildness, symbolized by the she-wolf nursing the twins, had now entered into an alliance with childish innocence. As Christianity became the state religion of the Roman Empire, with its worship of the infant Jesus, the powerful cult of childhood was reinforced, and finally reached its highest expression with Montessori's teachings (Padellaro 1930: 7–13; Quarfood 2022: 226–227).

Padellaro belonged to a subgroup within the fascist movement. The aim of the Scuola di mistica fascista, led by Nicolo Gianni, was to make the hero-worshipping Il Duce cult the main instrument for the fascistization of Italian society. Fascism was to be turned into something resembling a religion, a mystical creed that even children could embrace. Sacrificing oneself for the glory of the nation was a vital component of this faith. Most leaders of the mystical school lived as they learned when they died on the battle fields during World War II, but Padellaro survived. After the war he was soon rehabilitated, having many contacts among educationalists. In 1948 he obtained the post of director general of the department for the Combat against illiteracy at the Ministry of Education. The former fellow traveller of the Italian Montessori Society now became one of its post-war members (Gorla 2012: 25–67; Quarfood 2022: 224).

The multifaceted Montessori movement

There was a certain ambiguity to the Montessori movement's message about the child's liberation, a message which could be interpreted in very various ways. While in terms of methodology the movement gave clear instructions for the proper use of the didactic materials, the teacher's task and the organization of the school environment, its vision of the liberated child – the very heart of the method programme – was less clear. What exactly did the child have to be liberated from and what was the ultimate purpose of liberation?

The musically gifted and practical-minded Maccheroni seems to have valued the didactic apparatus as a most wonderful instrument for the child's liberation. Liberation understood, not primarily as the removal of external obstacles, but rather as a conversion, from an inner state of chaotic disorder to a state of harmony. The Montessorian child's exemplary self-discipline was, in its rhythmical bodily control, both morally and aesthetically pleasing.

Although Claremont shared Maccheroni's fascination with the apparatus, he evaluated it from a more scientific point of view. Having studied engineering and the life sciences, he believed he was in a better position than the average educationalist to judge the merits of Montessori's technical innovation. Against the liberal pedagogues' advocacy of methodological pluralism, he argued that liberation could only be achieved through the application of Montessori's field-tested method. The child had to be liberated from an outdated preschool education, which stimulated idle fantasies and play, instead of furthering the development of intelligence.

As Padellaro's example shows, Montessori's child-centred message could lend itself to political interpretations. In his capacity as school administrator, Padellaro had of course a pragmatic interest in the implementation of a method known for its disciplinary efficiency. But as a fascist ideologue, he also believed in the necessity of myths. Completely disregarding the rational aspects of the Montessori method, he reframed the Montessorian critique of authoritarian parental power as a cult of childhood rooted in Rome's glorious imperial past. The liberation of the child was thus conceived as a liberation from parental authority, in order to strengthen the bond between the state and the new generations.

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The theological language of Montessori education and its effects on educational processes in childhood

Summary

The article relates to what historical educational research has been calling a theological heritage in pedagogy for some years now (e.g. Osterwalder 2005). The historical relationship between pedagogy and religion raises the question of how much theology there is in pedagogical concepts and what effects this theological content has on pedagogical practice. The study on which this article is based (Neff 2016) takes up these research findings and concerns and analyses them using the example of Montessori pedagogy. In addition to this legacy, findings of the analysis of Maria Montessori's numerous writings reveal a further argument that makes her pedagogy relevant to the present day. Furthermore, the diverse reception history of Montessori's statements on religion and religious education was analysed.

Key words: Montessori education, theological language, religious education

Słowa kluczowe: pedagogika Montessori, język teologiczny, kształcenie religijne

The research question of the study, the theoretical framework as well as the individual analytical steps and research results are presented for two of the analysed areas of Montessori pedagogy: the criticism of the theological language of pedagogy and the reception of Montessori's approach in religious education.

Pedagogy from religion?

Research question

In his speeches on religion, Friedrich Schleiermacher (1995) claimed that everything could be done with religion, but never from religion. This view forms the background to the research question of whether and to what extent Montessori used religious arguments and theological metaphors to justify her pedagogy. Not only her writings, but also reports of an enthusiastic following give rise to this. To put it provocatively, the research question is: does Montessori propagate the belief in a certain view of the child, which can only be

followed with faith, or is there also a pedagogical argumentation in the sense of a scientific argument that Montessori uses? Does Montessori pedagogy proclaim and promise more than that it operates with pedagogical arguments? Is it a pedagogical worldview that can only be defended emotionally? The research points in two directions: on the one hand, it asks how the relationship between religion and pedagogy can be described in Montessori's writings and how much theological heritage there is in Montessori pedagogy. On the other hand, it examines if and how the reception of Montessori pedagogy in religious education continues or in forces the theological heritage.

Research design

The questions are based on research in historical pedagogy on theological language in pedagogy and take its critique as a critical foil for the study of Montessori's writings on religion and pedagogy, as well as the early and current reception of Montessori in religious pedagogy.

The pedagogical critique of the theological language of pedagogy (Osterwalder 2005), dogmas (Oelkers 2005) and sacralizations (Baader 2005) was first reconstructed as a component of the research methodology. The impact of theological language in pedagogy on childhood educational processes can thus be demonstrated.

With Dietrich Benner's (2005) proposal on the differentiation of rationalities of action, another perspective was adopted in order to see religion and education as two different approaches to the world, each with its own inherent dignity. The dialogue to clarify and differentiate between theological and pedagogical-sacralizing forms of argumentation can thus be opened up for Montessori pedagogy.

One subject of the study is Montessori's numerous pedagogical writings as well as all her available texts on religion and religious education. They are analysed with regard to the use of theological ideas and religious metaphors, her image of the child, and her attitude towards religion and religious learning paths in the sense of Montessori pedagogy. In order to reconstruct the relationship between religion and pedagogy, a step-by-step passage through Montessori's writings is undertaken to illustrate Montessori's views using original quotations. German translations of Montessori's writings are used; where already published, the historical-critical new edition by Harald Ludwig is used.

Montessori education has been received in very different ways in recent years. On the basis of publications, the second part of the study analyses how the religious dimension of Montessori education has been received in the pedagogical and religious-pedagogical reception of Montessori. The aim of this investigation into the history of reception is to show how Montessori's writings are interpreted and which aspects and reasons lead to Montessori pedagogy being understood as catechesis, theological anthropology, Catholic pedagogy, religious pedagogy, or as non-theological interpretation. The methodology of this study is a historical-systematic approach to reception.

A detailed analysis and evaluation of three contemporary concepts by Cavalletti, Berg, and Berryman on religious education and upbringing in the context of Montessori education

is carried out, considering their potential benefits for religious education. Montessori's explicit religious education concept is used for both: catechetical purposes, such as First Communion preparation, and for religious education in schools. Sophia Cavalletti (1979) uses in her "Catechesis of the Good Shepherd" the liturgically orientated approach to religious education of the early Montessori. Her approach focuses on the affective resonance in the child. Montessori's approach to religious education is broader by comparison, as it also aims at the imagination and thus goes beyond affective resonance. Jerome Berryman (1995) has developed the concept of "Godly Play" for the American Sunday school since the 1970s. It draws on Cavalletti's approach and is explicitly understood as religious education based on Montessori's principles. With the intention not to teach children who God is, but to enable them to discover this on their own, Berryman fulfils a genuine characteristic of Montessori education. "Godly Play" is essentially a variant of catechetical community work and can therefore not be used in its original form in school religious education lessons that are intended to be educational and reflective. The German Protestant religious educator Horst Klaus Berg (1999) takes Montessori's distinction between implicit and explicit religious education as his starting point and continues Montessori's approach to the changed situation of religious education in the school context. He transforms Montessori's well-known sentence into: "Help me to believe for myself." With it he supports Montessori's demand for the child's own right in religious education. That´s why his approach can be characterized as freedom of choice according to Montessori.

The three concepts refer to Montessori in very different ways. They can be characterized as catechesis (Cavalletti), children's church (Berryman) and religious education (Berg) according to Montessori. These concepts are analysed in terms of their views and takeovers of Montessori's approach (Neff 2016), but these results cannot be presented in detail within the scope of this article.

Analytical perspectives and theoretical framework

The process of emancipating pedagogy from theology is still ongoing. The context of the relationship definition refers to the self-image of educational science and the historically grown relationship between pedagogy and religion. Religious education has increasingly incorporated educational science and general pedagogical topics in its developmental history to provide a dual scientific foundation for the discipline. However, pedagogy has tended to break off the conversation. During the Enlightenment and modernity, pedagogy was emancipated from religion. Moral concepts and pedagogical anthropologies were formulated without theological presuppositions. However, historical pedagogy indicates a linguistic, thematic, and content-related continuity of a theological heritage, as well as sacralizations in views that are understood as pedagogical.

At the end of the 19th and beginning of the 20th centuries, educational reform activities aimed at changing schools began, particularly in Western Europe and the USA. Different hopes and aspirations, experiences and concepts were articulated, so that although the term

"reform pedagogy" is used for this era, it does not represent a unified movement. Efforts to change schools include pedagogically, politically, and ideologically heterogeneous reform approaches. Primarily, this is understood to mean a school pedagogy that is described as "pedagogy from the child." One aim of this movement was to transform receptive learning into active and self-directed learning (Link 2018: 18).

Argumentation: the pedagogical critique of the theological language of pedagogy

In his analysis of the history of pedagogy, pedagogy historian Fritz Osterwalder shows that an originally religious style of speech was secularized without losing its connection to theology. According to this, the school, the teacher, or a method are given power over the entire child. This is neither pedagogically nor theologically legitimate. Osterwalder's thesis identifies a theological language, which favours the perception as religion, but at the same time is peculiar to pedagogy. Osterwalder's reference to theological concepts in modern pedagogy offers religious pedagogy a yardstick for distinguishing theology and pedagogy from one another.

Rather than attributing the emergence of pedagogy to Rousseau alone, as is often assumed, Osterwalder traces its roots to the development of a pedagogical theology in the 17th century, formulated as a renaissance of Augustinianism. He shows that the pedagogical tradition of French Catholic Jansenism contains text types that exhibit the pedagogical paradigm used by Rousseau and recognized as "modern." The texts speak from a distance about what education is and how to educate, but remain in the context of theology. The authors of these devotional movements believe that education should be organized in a way that keeps people open or opens them up to the work of divine grace. According to their view, what happens inwardly in the individual is decisive for the educational process. Similar to Catholic Jansenism, numerous Protestant Pietist texts also describe how a special teacher-pupil relationship transforms the pupils' inner self and prepares them for salvation. Augustine's theological assumptions about the redemption of the soul and its transformation legitimize these educational writings. Therefore, they can be justified only in a theological context, according to Osterwalder's (1992; 1995; 2005) findings.

This dogma was the belief that there was something in man, fallen through original sin, that could be changed and led to salvation through pedagogy. An approach to inwardness that has been adopted for pedagogy since Rousseau: he claims redemption through pedagogy and understands pedagogy as redemption. The theology of this argument is obvious. Osterwalder criticizes it as religion in pedagogy, not in the sense of a critique of religion, but as a critique of the method of educational science. Since the Enlightenment, educational science has seen itself as secular, but in fact uses religious patterns and arguments to justify its aims and methods. Osterwalder's thesis is provocative because it criticizes also pedagogical concepts of the period of reform pedagogy as texts of promise that promise salvation through pedagogy. They elude argumentative criticism because they orientate

the educational process towards an absolute inwardness and an absolute end or goal. The criticized sacrality of pedagogy can be seen in the talk of the child, of the educator, who must profess and serve the child, as well as in the understanding of education as an activity that creates wholeness or perfection, which stands in contrast to the profane world.

Rhetoric and dogma: Myth of the child

Osterwalder's critical thesis is supplemented by the critiques of Jürgen Oelkers. In his publication Oelkers (2005) argues that the protagonists of the so-called "reform pedagogy" from 1890 to 1930 revisited, bundled, and rhetorically reinforced traditional criticisms of schools and teaching, as well as familiar motifs. He particularly analyses the language and contexts used in this era. A rhetorical relationship is established between the "old education" and the "new education," although a thematic continuity in the discourse can be assumed. The authors simultaneously handed down and renewed journalistic postulates and arguments of school criticism and reform. The pedagogical texts themselves have an "educational" effect and are communicated in such a way that they can withstand any criticism.

The "from the child" argument was commonly used as a pedagogical formula with broad approval and great success, without recognition of its religious foundation. The authors made theoretical progress with the distinction between child and adult learning, but this aspect was overshadowed by the romanticized image of the child and the cult of its nature. The pedagogical reform "from the child's point of view" was characterized by boundless expectations, wishes, and hopes for the child, often with religious undertones. In the early 20th century, school reformers placed great expectations on the child, but instead of focusing on the individual child, they created a mythical image of the child that dominated the pedagogical debate. This myth portrayed the child as both mentally pure and mentally oppressed. Even the emphasis on child psychology could not dispel this myth. Child-centred education is an approach that emphasizes the nature of the child over the projections of adults. The child should determine the goodness of their upbringing and adults should orientate themselves towards the child's innocent nature. The pedagogical emphasis on nature thus simultaneously criticizes the practiced education (Oelkers 2005).

Oelkers criticizes Montessori's view of the child as a myth, as something secularly sacred, as well as her rhetoric of human development towards perfection. Montessori's idea of a teleologically orientated inner blueprint of the child, which only reveals itself to the observer and can therefore only be discovered retrospectively, is pedagogically contradictory. Despite turning away from the classical theory of substance, Oelkers also characterizes Montessori's concept of development as mythical.

In her late work *The Absorbent Mind* (1949) (Montessori 2007), Montessori avoids the paradox of pedagogical influence on the inner building plan by using a biological metaphor: the child forms the future human being out of itself by absorbing its environment. Montessori considers this realization as the true innovation of her anthropology. Oelkers

highlights Montessori's pedagogical thinking based on biological individuality as a novelty in pedagogical literature. Montessori is considered the most important representative of modern pedagogy owing to her focus on the child as the starting point for pedagogical considerations. She overcame pre-empirical doctrines of the soul and believed that education should serve the biologically based nature of the child (Oelkers 2005: 121–122).

Furthermore, Oelkers sees Montessori education as a teaching model and thus as an inductive variant of school reform that has succeeded in changing current practice. Owing to the self-education of the child, it is less a typical teaching model and more a theory of child development. According to Montessori, the child's order-creating psychological processes of change, i.e. inner change through learning, are decisive for mental growth.

Religious metaphors

Meike Sophia Baader takes up Oelkers's thesis that religious expectations lie behind almost all reform pedagogical models. In her Habilitation thesis *Erziehungals Erlösung* (Education as Salvation) (Baader 2005), she shows that school reformers, in the context of modernization processes at the beginning of the 20th century, received decisive impulses from a preoccupation with religion that had previously been neglected in its reception. For Baader, religion and religiosity have not disappeared from pedagogy, but appear in pedagogical concepts in a transformed form. Education is conceived as a transformation of the path of redemption, i.e. it appears with the claim of wanting to redeem people.

Baader also critically questions whether Montessori's pedagogy is a transformation of the path of redemption for a Montessori reading (Baader 2005). She focuses on Montessori's portrayal in "The Secret of Childhood" and criticizes the ideas of self-redemption conveyed by the child and her stylization as a redeemer. Through a comparison with Ellen Key's *The Century of the Child* and an analysis of *The Secret of Childhood*, Baader arrives at an interpretation of Montessori that can be reduced to the following short formula: for Montessori, education is the fulfilment of a divine mission. She thus states that the child is sacred in Montessori's work. Her criticism is directed at the level of religious linguistic metaphor.

Analysis of pedagogy and religion

The initial analysis is concerned with Montessori's fundamental writings, as well as texts on religious education as liturgical education, cosmic education, and late religious writings. The second analysis concerns the reception history of Montessori's statements on religion and religious education. Each analysis examines the relationship between religion and pedagogy in Montessori's argumentation, the theological heritage in the sense of Osterwalder, dogma, rhetoric, and sacralization, Maria Montessori's personal faith, and forms of implicit or explicit religious education.

Analysis of Montessori's writings

When analysing Montessori's lectures and writings, it was taken into account that global political circumstances and biographical situations influenced the conceptual developments and that Montessori education cannot be read as a unified work. Relevant comments on the translation or context have been considered. Revisions by Montessori are marked with the year to indicate further developments in her thinking.

The analysis of the fundamental writings takes into account the *Dr. Montessori's Own Handbook* (1914/1930/1939) (Montessori 2011), *Il Metodo della Pedagogia Scientifica applicato all`educazione infantile nelle Case dei Bambini* (1909/1913/1926/1948) (Montessori 2012) and *L'auto educazione nelle scuole elementari* (1916) (Montessori 2008). As demonstrated by the years in brackets, Montessori revised and republished these works, showcasing both further development and consistency in her ideas. Montessori's lectures on anthropology are not included in this analysis. Other excluded texts increasingly describe psychological development, such as *The Absorbent Mind* (1949). Similarly, the texts on Peace and Education, mainly written in the 1930s, are also not included. The work "The Secret of Childhood" combines religious metaphors with the physiological and psychological development of the child and is closely linked to the debates of school reformers.

Before conducting the analysis, a bibliographical and chronological survey of Montessori's texts on explicit religious education was performed. The analysis includes only writings that are not exclusively oriented towards the liturgy. The selected texts demonstrate that an orientation towards the liturgy of the Catholic Church is one fundamental aspect of Montessori's religious thoughts. During the interpretation process, it was considered that some of the texts are transcripts of Montessori's oral lectures and translations.

Under the heading *Religious Education as Liturgical Education*, nine lectures and writings by Montessori have been compiled which explicitly focus on practical religious education according to the Montessori method, the life of children in the church, general principles of religious education and the relationship between God and the child. The focus of the contributions is on the 1930s, but the publication period extends from 1913 to 1946. There are only two lectures from 1935 and 1945 on the connection between religious education and cosmic education. Montessori emphasizes the position of humans in creation and the cosmic task of taking responsibility for creation, preserving the unity of humankind, and assisting the weak. Two other well-known texts that refer to religious education and the confession of faith are *La preghiera – The Prayer* (1944/1949) and *The Mirror of the World* (1950), a conversation between Montessori and E.M. Standing, published by Standing after Montessori's death in 1958 (Montessori 2023). The text presents statements that require critical evaluation owing to idealizations and a pre-conciliar understanding of the Catholic Church. Additionally, there are interesting reflections on the Catholic Church as a social organism and its focus on marginalized groups of people.

Analysis of reception: religion in Montessori's approach

A report of the reception of Montessori education as religious education can be found in Günter Schulz-Benesch (1962) for the period from 1920 to around 1960. Additional reviews of this Montessori interpretation can be found in Franz-Michael Konrad (1997), Andrea Kabus (2001), and Harald Ludwig (2008). Different phases of reception can be identified: prior to 1960, Montessori education had little impact on religious education. Since then, there have been observation reports and publications by Helene Helming. They were not utilized in religious education lessons in schools. But Helming influenced a Montessori reception that refers to her religious anthropology. Furthermore, since the early 1980s, Montessori pedagogy has also been incorporated into concepts of religious education owing to the resurgence of reform pedagogical concepts in school pedagogy. The late adoption of Montessori's approach in religious education can be attributed to several factors, including the negative attitude of some Catholic educators, delayed publication of explicit religious education writings in German, the need for a new beginning for Montessori education after the Second World War, and the lack of working materials.

For this part of analysis, only authors who refer to the entire Montessori pedagogy are selected. They interpreted the approach with consideration of Montessori's statements on religion and religious education. The selected authors or concepts are divided following their kind of interpretation.

As a catechetical and religious-pedagogy method, there are some examples: the Spanish priest of Barcelona who inspired Montessori to reflect on religious anthropology and to develop the explicitly religious concept. František Tomášek, a Czech cardinal and professor of religious education, published in 1940 a work titled *The Active School and Religious Instruction with Consideration of Maria Montessori's Method*. Helene Helming, a professor and founder of a German Montessori Association that emphasizes the Catholic background – she inspired many people with Montessori's approach. Helming sees the distancing from experimental psychology in favour of a Christian understanding of individuality and the soul's striving for independence as a change in Montessori's work. The French religious educator of Polish descent Hélène Lubienska de Lenval recognized in Montessori, education principles common to the monastic tradition, e.g. self-activity and silence. For her religious pedagogy, she also adopted the organization of the environment and free movement as well as: the naturally given disposition to observational contemplation, to which religious pedagogy should not remain indifferent (Lubienska de Lenval 1946). Lubienska de Lenval influenced the reception of Montessori's religious education in Germany. In the 1970s, methodological and didactic elements of Montessori education were adopted for a concept of Catholic independent schools in southern Germany, the so-called Marchtaler Plan. Both Christian anthropology (every child is a unique creature) and Montessori's anthropology (self-realization, becoming master of oneself in freedom) provided the impetus for the structure elements: freedom, work, silence, cosmic education, peace education, the "sensitive phases," prepared environment, and social learning.

As "propaganda" text in the sense of Osterwalder, there is one obvious example: it is the publication of Edwin Mortimer Standing's *Maria Montessori. Her Life and Work* (1959). Standing expresses his admiration for the personality and charisma of Montessori, although he wanted to fulfil Montessori's wish for a systematic presentation of her principles and practice with this publication.

The Dutchman Buytendijk has been highly regarded within German Catholic pedagogy, e.g. by Josef Schröteler (1929), and is one of the outstanding representatives of "Catholic educational science" on an international level. In philosophical-phenomenological analyses, he reflects on the problems of freedom and attachment as well as the pedagogical promotion of moral freedom. He interprets Montessori education as a successful contribution to solving these issues.

Representatives of an interpretation of Montessori as a theological anthropology can be found in Paul Oswald und Hildegard Holtstiege. Both had a major influence on the understanding of Montessori education in Germany. Ulrich Steenberg (1998) interprets Montessori's writings on religious education as an existential-symbolic approach, starting in the 1990s. Tanja Pütz (2005) compares the polarization of attention with meditation and regards Montessori's approach as religious pedagogy.

Three recent dissertations are used as examples for a non-theological interpretation: Martin Pranieß (2008) concerns the religious-ideological background of Montessori in the service of her pedagogy. Kyung Sun Koo (2008) offered a discussion about *The dignity of the child* and reflected the position of the child in the pedagogical and religious anthropology of Montessori. Mansoon Ahn (2008) compares the modern concept of the person with the dignity of the child in Montessori's pedagogical and religious anthropology.

Findings

The bibliographical record of Montessori's lectures and writings on religion already demonstrates that religion and religious education are integral parts of Montessori pedagogy.

The debate began in 1910, when Spanish priests discovered the Christian principles of Montessori's education, written down in *Il Metodo* (1909). They gave Maria Montessori the impetus to take up this idea, to consider it significant, and to develop it further. The priests turned to Montessori education out of a pedagogical interest. They interpreted the following principles of Montessori education as religious education: the attitude of the teacher, self-activity, sensory training, silence, concentration, freedom, dealing with mistakes, and loving respect for the child. Montessori subsequently developed and systematized a concept of explicit religious education. She put it into practice later at the *House of Children in the Church*, a atrium in Barcelona, in collaboration with the community of priests.

Findings from Montessori's writings

The text analysis shows that Montessori used the theological language of pedagogy, metaphors and sacralizations of the child in her writings. The theological language of Montessori's pedagogy is evident from the very first pages of her handbook. Montessori wants to explore the mystery of the child, discover its soul, or liberate the child's personality and bring it to development. According to Osterwalder, access to the child is through an absolute order that is presumed to exist within the child. Educational measures such as a prepared environment, freedom of choice, developmental materials and exercises are intended to bring out what is hidden in the soul. It can therefore be said that Montessori did not finally escape the absolutizing dynamics of pedagogical-theological language. She does not reduce an empirical-sensualist approach to human beings to the sum of their experiences gathered through sensory impressions and available to their consciousness, but at the same time refers to the needs of the human soul and the mystery of individuality.

In going through Montessori's writings on religion and religious education – from the lecture *On Moral and Religious Education* (1913) to *La preghiera* (1952) – three questions were addressed: how does Montessori organize and arrange the environment and materials for religious education? What concept of religious education does she develop, and what is its goal according to Montessori? Lastly, what pedagogical arguments and language does she use? (Neff 2016: 236).

The result shows: in her early phase, Montessori understands religious education as liturgical education. It opens up faith to the child through action and the playful re-enactment of the liturgy, e.g. in the atrium, in short: through the church into the church. It is denominational in character and thus stands in contrast to the view of many reform pedagogues, e.g. Ellen Key, who argued in favour of non-denominational religious education because the child would not understand the abstract teachings of the catechisms. Montessori also stood in contrast to the catechetical teaching common at the time and introduced a new approach to religious education that was based on respect for children and their freedom. In the concept of cosmic education, Montessori represents a more universalistic view of religious education.

Even in her later writings, she remains true to the idea that education should take place from the child and that the educator fulfils a religious service by serving the mystery of the child. A perfect upbringing can only succeed if God is recognized in the child. God reveals himself in the child. The aim of education should be to preserve the grace of God in the child. The child is purified through baptism. Through free action and self-activity, it perfects its inner laws, which open up access to God. The teacher should treat the child with humility and respect.

The analysis of religion in Montessori's writings has shown that the child's process of becoming a human being is of crucial importance to her. She does not leave the child's development into a human being to God's act of salvation, but argues for the right behaviour and the right way for the educator to treat the child based on the developmental

characteristics. Montessori describes the child's incarnation in pedagogical terms and uses the theological figure of argument inherent in pedagogy.

Montessori's texts on religious education contain a variety of practical suggestions. In accordance with the prepared environment and free choice of work, Montessori advocates for a development-oriented approach in methodical variance. This includes suggestions for sensory materials, exercises of practical life, exercises of silence, content-related development materials, stories, ideas for creating a personal prayer book or missal, theatre plays (cf. *The Mystical Drama*), and instructions and guidance on material development. When designing the prepared environment and developing materials, it is important to analyse difficulties in an age-appropriate manner according to sensitive periods and, if necessary, didactically reduce them. This approach is described in the texts about the analysis of difficulties in religious education (1939) and in analysis of difficulties in learning to pray (1956/1964) (Montessori 2023).

Montessori approach and its relationship to Religion

On the basis of numerous receptions of Montessori pedagogy, it is evident that Montessori's approach has been discussed in various ways regarding religious education. This ranges from the comprehension and misunderstanding of Montessori pedagogy as a catechetical method, prophetic proclamation, Christian educational theory, Christian anthropology, and indirect religious education, to the reversal in de-theologizing interpretations of Montessori's writings. Even if there are different understandings of religious education, the recipients employ Montessori's view of the child and her teaching principles, and utilize them in religious education up to the current time. The receptions show that Montessori is often interpreted as a witness to Catholic pedagogy.

Buytendijk (1990) views Montessori education as an education in humility. He develops this theological concept from the Christian doctrine of virtue (humility) not theologically, but pedagogically. Voluntary obedience does not come about through the imposition of external laws or foreign authorities, but only through relative freedom and an attitude of humility. In his work, pedagogical propaganda and theological language go hand in hand, a process that can also be found some years later in Schulz-Benesch (1962; 1990).

The Jesuit Schröteler (1929) searched for an educational method in line with the Catholic Church. His detailed analysis of numerous features of Montessori education served as the starting point for the adoption of Montessori education in Catholic education, particularly in the field of early childhood education. For him, education according to Montessori means an analogy to the natural religiosity of the human being, namely the development of the inner life forces in the child that are waiting for an impulse: the development of the will and the spirit with the aim that the will guides the actions. In practice, he emphasizes the principle of the child's freedom within the limits of obedience, the prepared environment, and the provision of objects through which the inner forces should come to light.

For example, one interpretation of Montessori pedagogy as a catechetical method is provided by František Tomášek (1940). His position shows the benefits that can be drawn for religious education from the principle of active schooling and religious instruction according to the Montessori method. The author's catechetical considerations take up the concerns of the papal encyclicals at the beginning of the 20th century and are therefore set in a contemporary context. The liturgical movement propagated an increased focus on children, which is what Tomášek searched for: a child-oriented method of catechesis. The author pleads for a lifelike teaching of the faith based on the letters of the apostles. He appreciates Montessori's approach to religious education as a means of original Christian catechesis because it honours the physical, emotional, and spiritual development of the child. Like Montessori, he is convinced: children need to be able to express their personal faith. The atrium provides a suitable environment for the spiritual growth of children.

The publication of Standing (1959) is proof that Montessori's speeches can be seen as prophetic proclamations: he writes that Montessori described the discovery of the powers in the child as a work of providence. He thus follows her self-portrayal and self-assessment, according to which her discovery of the child has the character of a revelation. He not only expresses his own religiosity in the text, but also Montessori's personal sense of vocation. Despite Montessori's sense of mission and the religious interpretation of Montessori education, Standing also refers to her objective scientific spirit of research: she was able to separate religion and metaphysics, was scientific and mystical. Standing regards Montessori education as a religious path for both: the child and the teacher. The child is described religiously through the assumption of an immortal soul and is reflected pedagogically in the light of this religious argument. The orientation towards the mysterious inwardness of the child serves as a point of reference for education, which is geared towards normalization as the absolute ultimate goal. The teacher's personal attitude and view of the child should be orientated towards something higher and based on the beliefs of "Montessorianism." The term "Montessorianism" characterizes the type of followers who have developed a cult of personality around Maria Montessori and her work and can be characterized as a religious community.

Before and after the Second World War, Helene Helming had a significant influence on the reception and practical realization of Montessori education in Germany. She and subsequently her students Günter Schulz-Benesch and Paul Oswald focused in particular on the religious content of Montessori education. Schulz-Benesch interprets Montessori as a pedagogical concept from a Catholic perspective and with an educational purpose, i.e. in a theological sense. Bollnow also describes Montessori education as a kind of "awakening" and Böhm dicusses it in the context of grace (Neff 2016: 484–494). Paul Oswald (1987) and Hildegard Holtstiege (1999) review Montessori's view of the child as determined by an anthropology orientated towards Catholic dogma. Oswald was not interested in the level of language, but in Montessori's core ideas about the child, from which the educational consequences are derived. Focusing on anthropology, he notes an overlap with Western Christian-Catholic anthropology.

The more recent works by Steenberg (1998; 2008) and Pütz (2005) understand Montessori education – in a nutshell – as indirect religious education. Montessori assumed that a religious dimension would emerge through the child as a subject for development support. According to Montessori, religious education requires self-activity, self-reflection about moral questions, self-reflection (thinking about oneself and the value of one's own life), the search for meaning and religious realization. According to Pütz (2005: 307), these terms characterize Montessori's concept of religion.

Non-theological readings can be found in relation to cosmic education in Pranieß (2008) and in relation to Montessori's anthropology in Mansoon Ahn (2008). The presentation of the history of the reception literature on religion in Montessori's approach has only been touched on here, but the insights nevertheless show that the reception has adopted Montessori's religious language and in places even reinforced it.

Gain in knowledge

The receptions, for instance of Standing and Buytendijk, make it apparent that the texts and lectures of Montessori served as a form of preaching or "pedagogical propaganda" as defined by Osterwalder. It is evident that Maria Montessori dedicated her life to advocating the rights of children and promoting their independence from adults. With this endeavour, Montessori argues in the pedagogical view of the child. She demands, for example, respect, humility, and observation, but not know-it-all mentality, for the teacher's attitude towards the child. She justifies this behaviour of the educator in different ways, i.e. not only in terms of developmental psychology or pedagogy, but also theologically: respect for the child is due to God in the child, because God reveals himself in every child. Respect for the child is then no longer based on pedagogical appreciation or consideration of the child's individuality and developmental psychological needs, but rather on the encounter with God in the child. The child is sacralized. The theological argumentation has a lasting effect on the way the child is treated.

The reception of Montessori pedagogy in religious education is often influenced by a theological interpretation of her work. Some aspects or the entirety of her concept are seen as having an affinity with the theological tradition. Montessori's writings and lectures are sometimes regarded as religious texts.

Today's Montessori pedagogy largely lacks a contemporary take on religion. It thus meets the criticism of the theological language of education. After analysing the theological heritage, impulses from Montessori pedagogy can be named for today's religious pedagogy, e.g. the orientation of religious pedagogy towards the child's access to the world; a more modest goal than the redemption of the child through pedagogy.

Clear differentiation between pedagogy and religion within Montessori education can prevent pedagogical dogmas and the sacralization of pedagogical practices, methods, teacher roles, and room design. Even today, the dissemination of innovative pedagogical

ideas, methods or concepts often leads to the belief that this is the "only correct" concept. The analysis illustrates how using theological language in pedagogy and transmitting sacralizing dogmas can affect perceptions of childhood as well as beliefs and convictions in educational practices. Its objective is to encourage self-critical reflection on personal notions of educational practice alongside childhood and education.

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Acting "out-of-the-box" in Montessori teachers' narratives – research report

Summary

In this article the author analyses the situations in which Montessori practitioners experience acting "outside-the-box". This includes specific "events" in everyday professional practices that are unique, unexpected, somehow special, and therefore do not have any previously prescribed solutions or scenarios. Based on semi-structured, qualitative individual interviews analysis the author outlines the occurrences (usually child initiated) that invite Montessori teachers to "leave" well--known routines, explicitly described procedures and perhaps even the zone of comfort. One of the main results of the research is quite paradoxical. A teacher wanting to act "out-of-the-box", needs to be consistent with one of the most important Montessori principles, which is following the child. In this sense, Montessori pedagogy can be seen as an open and educational system, inviting various interpretations, and promoting creativity, critical engagement, and innovation, rather than strict rules, clear and reliable methods, or precise techniques mastered during various teacher training courses.

Keywords: out-of-the-box, creative educational practices, Montessori, interview analysis, teachers' education

Słowa kluczowe: nieszablonowe, kreatywne praktyki edukacyjne, Montessori, analiza wywiadów, edukacja nauczycieli

Introduction

This article was written for the special issue on Maria Montessori's pedagogy. The research results presented here are a side thread of a larger project in which semi-structured qualitative interviews constituted one of the primary methods of data collection, in addition to observation, document analysis, and informal conversations, classic for ethnography. In embarking on the preparation of this article, being in a way provoked by the title category of this issue of the journal i.e. "thinking out of the box," I asked myself about the contexts and circumstances of such actions that could be identified in the narratives of Montessori practitioners. In other words, the research question I am interested in here is the issue of

acting outside the established pattern, a pattern possibly acquired through the training programmes and repeatable routines in which Montessori practitioners participate.

The article presented here is structured as follows. I begin by outlining the category of "thinking/acting-outside-the-box." At this stage I pay particular attention to the category of the **box** itself. Having established how it can be thematized, I then synthesize the methodology of the study. In the results section of the article, I cite, and briefly comment on, excerpts from the interview transcripts that refer to the out-of-box actions experienced by Montessori practitioners. The results of the study are the starting point for formulating an interpretation of the findings and recommendations for a specific mode of action that is called here the outside-the-box practice. I conclude the article with a discussion of the results, pointing out the limitations of the adopted research procedure, and suggesting further directions of possible future research.

Conceptualizing "the Box" in the context of Montessori Education

In the Montessori approach, the concept of "thinking outside the box" resonates deeply with the philosophy of fostering independence, creativity, and critical thinking in both teachers and children. It may emerge as a necessity when traditional methods turn out not to work. One could say that the Montessori approach is itself thinking and acting outside the box, the box of traditional education, the box of traditional childcare and upbringing (Woods, Rosenberg 2016).

Comprehending the "box" is thus essential for understanding the value and implications of transcending it, especially within the Montessori framework which can be treated as fixed convention (Weisberg 2009).

Thinking "inside the box" could signify the adherence to the established norms, routines, regulations, and practices treated as correct or/and effective. In a Montessori setting, this conformity can impede the natural curiosity and creativity of both educators and children. It leads to stagnation, where innovative approaches are stifled by rigid systems and by commonly accepted unquestionable norms. In-the-box thinking may mean viewing problems through a narrow lens, dismissing new ideas and experimental practices owing to risk aversion. This mentality might thus hamper innovation as well as lead to the inability to envision beyond conventional solutions. Such an attitude prevents long-term progress and potentially brings the risk of the Montessori approach becoming another close-ended technique (Lord, Emrich 2000; McLean 2007; Boge 2013).

In Montessori education, a paradigm crisis often serves as a catalyst for shifting from in-the-box to out-of-the-box thinking (Darn 2006). These crises may occur when one realizes that, for some reason, a presentation or other form of working with children does not work. This realization necessitates discarding old patterns, leading to personal chaos and insecurity. Resolving such crises involves developing new skills, including improvisation, balancing order with creative disorganization, and fostering careful (auto)observation (Darn 2006).

Creativity in the Montessori context might be therefore perceived as emerging through the rejection of old ideas and embracing new ones. The "box" represents the constraints formed by past experiences, which limit our thinking. Psychologists who study creativity, recognize that breaking free from these constraints is essential for fostering innovation and serving children (Abernathy 1999; Darn 2006; Dingli 2008).

Several methods are designed to facilitate out-of-the-box thinking, with brainstorming being one of the most well-known. In Montessori education, similar methods could encourage the generation of numerous new ideas by discarding constraints that typically inhibit creative thinking. This approach aligns with the Montessori principle of allowing children the freedom to explore and innovate within a prepared environment. Idea factories, or collaborative creative sessions, are assumed to produce novel ideas even without deep domain expertise, suggesting that creativity can flourish when conventional knowledge is minimal so as to avoid constraints (Atkinson 2004).

Thinking outside the box remains a valuable metaphor for encouraging innovation (necessary for serving the children) in Montessori education. It involves a fundamental shift in perspective and approach. This shift emphasizes the need to step outside psychological comfort zones and explore new ways of perceiving the world, requiring the acceptance of emotional and cognitive discomfort. The transition to out-of-the-box thinking is closely linked with emotional intelligence (Darn 2006). Self-awareness, mood management, self-motivation, empathy, and relationship management are essential in navigating the shift from conventional Montessori to innovative thinking. These skills facilitate the balance between order and chaos, enabling the development of new cognitive and perceptual frameworks vital for educational innovation in Montessori environments. The concept of thinking outside the box is particularly relevant in Montessori education, as educators form whom the idea of following the child is close must be willing to step outside their comfort zones, challenge existing norms, and embrace new methodologies (Darn 2006).

This involves continuous self-development and openness to alternative approaches, drawing from fields such as theory of education, philosophy, and psychology. Montessori educators must be – in this perspective – perpetual students (Lewis 2013; Zhao et al. 2020), continuously evolving both professionally and personally to foster environments that encourage creativity and ultimately help children to be out-of-the-box thinkers and doers themselves. To effectively think and act outside the box, Montessori educators thus must adopt specific strategies, including questioning the *status quo*, breaking free of routine, searching for alternative solutions by asking reframed questions, or seeing educational challenges as opportunities (Boge 2013). Having shed some light on the idea of the box acting out-side-the-box, let us now turn to the methodological aspect of the research presented in this paper.

Method

Between 2019 and 2024, I conducted thirty-seven in-depth, individual, semi-structured interviews, which were subsequently analysed using phenomenography (Martön 1986; Richardson 1999) and the seven steps of analysis and interpretation. These steps include: a) thematizing; b) designing; c) interviewing; d) transcribing; e) analysing; f) verifying, and g) reporting (Kvale 1996; Kvale, Brinkmann 2009). The time frame of this research is significant as it encompasses the COVID-19 lockdown period, which many scholars have reported as having influenced Montessori education (Murray et al. 2021a, b). This context impacted both the research findings and educational practices. During this period, teachers faced numerous challenges related to student engagement, the limitations of the prepared environment, and setting boundaries with early childhood education (ECE) students. The sample comprised thirty-seven female Montessori teachers (aged 23–59) working in 15 institutions (10 kindergartens, 5 elementary schools). The primary research question guiding this project was: How do Montessori teachers experience their professional reality? This issue, or closely related themes, has been extensively researched in ECE contexts globally under various social conditions, using both quantitative and qualitative methods (Malm 2004; Beatty 2011; Christensen 2016, 2019; Aziz, Quraishi 2017; Ender, Ozcan 2019; Andrisano Ruggieri et al. 2020; Siswanto, Kuswandono 2020; Efe, Ulutas 2022).

It is undoubtedly a significant issue, as it has the potential to frame experiences and practices (Damore, Rieckhof 2021, Bavli, Uslu Kocabaş 2022) not only in ECE, but also in relation to teacher trainees (Slovacek, Minova 2021), high school Montessori education (Rathunde, Csikszentmihalyi 2005), and other alternative pedagogies (Dodd-Nufrio 2011). Some reports indicate that teachers possess unique personal theories that may affect their practices (Bell 1991; Wood, Bennett 2000; Tsangaridou, O'Sullivan 2003; Takahashi 2011).

For this article, which focuses on the category of thinking/acting outside the box, I have narrowed the analysis to those parts of the narratives identified as relevant to the problem category. An open coding process was implemented using QSR NVivo and MaxQDA software, as suggested by (Feng, Behar-Horenstein 2019) to formulate analytical categories. The analysis procedure involved the following steps: a) examining the natural sense units (verbatim interview transcripts) for specific parts of the narratives; b) open coding the extracts (Jacques 2021); c) condensing and comparing the codes; d) identifying, labelling, and describing analytical categories; e) illustrating the categories with representative quotes, and f) providing evidence-based interpretations (Kvale, Brinkmann 2009).

Results

In the research procedure adopted in this project, the results of the study are treated as an outcome space that emerged in the course of analysing the empirical material. In the case of

the study presented here, the aforementioned outcome space is constituted by five categories of description. In the following part of the article, I will briefly present each category, illustrating them with a "representative" fragment of transcripts of the interviews.

Category one: beyond the classic (use of) Montessori material

The first category described here concerns practices related to the lack of possession of classical Montessori material and/or the use of this material by children in creative, unexpected ways. In other words, both the school's lack of possession of the complete material and allowing the children to working unconventional ways can initiate an "out of the box" practice (cf. Palmer 1912; Lillard 2012, 2013; Lillard, Heise 2016).

> I left the public system, the traditional school system and I decided to become a Montessori guide. So first I took the AMI course to be a children's house guide, and then I also did the course to become assistant to infancy, so between zero and three years of age. […] And now you come into the classroom, and you think OK I want to do the Montessori, but I have no clue how to do it without materials. So, this was important moment as I started to think […] do I use everyday objects? Do I go to the forest and collect some sticks, stones and use it. **Is it still Montessori?** I wonder what my trainer would say if they saw it. But I did it, and I think it is actually still Montessori. [I4]

> So, I was working with a group of seventeen children, between one year and a half and three years. So… that was brilliant, I loved every moment of it. I just, I was doing my, my course, I was just finishing my course… my AMI course, and… I was the leading guide, let's say. I was speaking Spanish with the children, and I had two very kind and qualified assistants. They were talking in English with the children. It was a bilingual school… and it was beautiful. The first thing you would think when you entered this place was, wow, this place is really beautiful. Everything was well prepared and well arranged. So, everything was settled and prepared and **then the kids came and you could throw all your plan into the bin it hardly ever happened that we followed the scenario that we had really planned before**. **They didn't care about the albums, and yet they seemed to benefit a lot**. At the beginning it was really difficult for me. You never know really what is going to happen at your work. [I8]

Category two: free work/play in safe environment

This descriptive category concerns a specific approach to understanding "free work" in Montessori pedagogy. The interviewees pointed out that the basis of free work is not only the non-directive presence of the teacher, but also the creation of a space in which there is emotional security. Appreciating acceptance of the child's freedom to act freely contributes to the emergence of phenomena that cannot be predicted before they happen. In other words, it is the space for free work/play that triggers out-of-the-box action, but only when

it is really **free work** and not just the part of the day that is devoted to working with the material. In this context, the notion of **free work** is expanded, the importance of **free play** is appreciated and the boundary between the two is blurred. The distinction between work and play, traditional to Montessori discourse, is questioned here (cf. Brehony 2000). The play that is child-initiated and, at the same time, has pro-developmental potential, becomes **work** in the Montessorian sense of the word.

> Well, it all depends, what kind of child you have in front of you, but you can let the child decide how to spend the time during free work period, because, some of them, they arrive, and they are very clear about what they want… So, some of them, they need to be comforted, so you spend time with them being very warm, and, and, and kind with them, and then, then maybe they will be open to an activity. **So, emotions first, reading the emotions, and your emotions, and then they seem to have mere play, but it is not mere [stress] play**. Perhaps it is the work that Montessori wrote so much about? **So where is play and where is work?** I don't know exactly but I know freedom in free work means also accepting free play. [I27]

> Okay, so… the teacher is the one, who takes care of the, takes care of the progress, you know? So, we have those… we have the curriculum, the AMI curriculum, and we decide what kind of progress we want to have with children. There is one exception though, there is one exception though… and this is the work of the child. If this is good for them, isn't it what we all want? […] **but are we ready for such a chaos? Sometimes I think that this freedom in Montessori is just an empty cliché**. [I34]

Category three: boredom of the child

The third category identified during the analysis of the empirical material points to the potential of boredom as a trigger for acting out-side-the-box, which is a phenomena investigated by various researchers (Elpidorou 2014; Raffaelli et al. 2018; McDonald 2019). As mentioned above, this article is primarily concerned with teachers' actions, however, also in this category – as was to some extent the case in category two – the specific approach of the teacher to his/her practice and to the children can be an inhibitor of out-of-the-box action in a prepared Montessori setting. In this context, the discourse of using time **productively**, so popular now also in the context of education, becomes questionable (cf. Korsgaard, Zamojski 2023; Zamojski 2023). The time of boredom experienced by children is described here as a moment in which the child experiences a dilemma about how to manage his time, what activities to engage in, what to work on a particular day. The recognition by the teacher that the child's experience of boredom is an important aspect of development allows the child to act outside the box.

> It's difficult, because I, I think some of them, it **can be overwhelming, you know, the, the amount of freedom we guarantee in the Montessori classroom**, some of them, they… until then they were not allowed to think about what they like or to do something just for

the sake of doing it, because, because you enjoy doing it, because… some of them, some of them they, they, they stay there in the middle in the classroom, and they don't know what to do and that's fine too. [I6]

[…] on Monday morning the children arrived and I do remember… the, the first thing that, I mean the biggest thing that came out was, "What shall we do here? So that, that was nice, because they were…, some of them didn't say anything, they didn't say much, they were puzzled the moment they came in. […] I noticed then how important it is to decide what to do for the children and in order for this to happen they **need to experience boredom** and decision making space. [I11]

Category four: encountering the Other(ness)

During the analysis of the empirical material, there were some excerpts from the narratives identified which referred to the challenges presented by the teacher's encounters with a child who, for various reasons, does not undertake the work in a traditional way. Such situations range from children with specific learning needs to those who are reluctant to work with classic Montessori material. Interviewees described such children as "different" or "other" but it is these encounters with this otherness that trigger or force a creative approach to the teacher's work. Let us present sample excerpts from the interviews:

And there are children who are totally different. […] We also have a visually impaired boy who has more problems with his graphomotor skills, so... we had consultations with a typhlopedagogue who gave us some advice on how to organize his environment in order to encourage him to work. All this usual Montessori practice that we were trained in didn't work. We simply had to find ways how to be consistent with Montessori and work with this boy. [I22]

There are other children who don't give a damn about the Daily Diary, which also, let's say, reassures me that it's not like that, they are not I don't know, mechanical robots who just fill in the blanks one by one. There are some people who are, let's put it this way, completely unusual. But, as I say, we don't get too worried and look for solutions. […] We constantly remind ourselves sometimes not to act like a Montessori policemen. [I2]

Some educational researchers point to the distinction between "individualized" and "personalized" education (Bray, McClaskey 2012; Tetzlaff et al. 2021). In this context, the individualization of the teacher's work with the child could mean, for example, the selection of appropriate Montessori materials for a particular child based on prior observation.

In contrast, the activity which we refer to here as acting outside the Montessori box would be closer to a 'personalized' education approach. In this mode the teacher not only adapts the didactic material to the needs of the child, but also creatively generates different pedagogical forms to address the subjectivity of the pupil.

Category five: the silent ones demand a voice

The last category discussed here concerns "going out of the Montessori box" as a result of children's verbally expressed demands. This category was inspired by two teachers who drew attention to the specificity of the behaviours and functioning of children and adolescents between the ages of six and eighteen, which corresponds to the second and third developmental planes in Maria Montessori's pedagogy (Baker 2001; Grazzini 2004; Green 2022; Kahn n.d.). Formerly "obedient" children, following the adult (first plane of development) (Grazzini 2004; Haines n.d.), with their significant social, emotional, and moral development demand the organization of a prepared environment according to their openly expressed needs. The resistance to the activities proposed by the adult causes the teachers who listen respectfully to the voices of the children and adolescents to modify, extend, and reorganize the prepared environment as well as invent strategies for pedagogical interventions they had not thought of before.

> Six to twelve children, well they're different. They are debating a lot, talking a lot… putting, you know, their arguments on the table and then finding an arrangement, then negotiating all the time, and they are so… they are so obsessed with justice. I have no option but to follow them. Sometimes I come to the classroom with a plan and within minutes it is upside down and we go to the museum. They are not… anymore… calm Casa [3–6] kids. [I17]

> Well, I usually know what to do. In a sense it's "albumed" [shows inverted commas]. It's just the way we learn on the course, the way we have it written out in the album as well, well that's, that's the way we try to do itbut I found out that – if you don't ignore what your children say – you constantly need to change the ideas of spending time together. Sometimes they just refuse to cooperate. Some simply say – my way or no way [laughter]. I think some training organizations should just change, and start to say that the pink tower is not the answer to all question, that children can knock it down in a metaphorical way, and they really don't have to construct it block by block, cube by cube… if you know what I mean. [I29]

Discussion and conclusion

The study conducted aimed to identify contexts in which Montessori practitioners act outside the box. The analysis of the empirical material made it possible to present five categories of description. The outcome space sheds light on the circumstances in which out-of-the-box practices emerge, as well as on specific teachers' ways of understanding educational practice that make out-of-the-box action possible. Maria Montessori's pedagogy is particularly interesting when it comes to the issue of creative, non-schematic action.

On the one hand, there is a tried and tested way of doing things, a fairly clearly defined convention of teacher behaviour, which can make it difficult to act outside the box. This is

what we often call the Montessori method. On the other hand, on the level of values and general philosophical assumptions, Montessori pedagogy means a deep respect for the other, following the needs of children, respecting the right to individual construction of one's own interests and passions. Taking into account the results of the conducted research we can speak about the tension between the technical approach to Montessori work, gained through many hours of training in procedures of working with the child offered by numerous teacher education centres, and being inspired by Maria Montessori's pedagogy at the level of assumptions concerning relations between people, the general aim of education, the essence of harmonious coexistence of all people.

As mentioned in the introduction to this article, the theme of acting outside the box was not the main research problem of the project, which should be seen as an obvious limitation of the analyses presented here. The issue of acting outside the box was addressed *ex post*. For the analyses, only those fragments of the research were selected that were relevant to the theme of the article. The results obtained in the course of the analyses can be treated as directions for further research in this area. Arguably, systematic empirical research focused on the issue of the creative interactions of Montessori guides would deepen the knowledge of teachers' understandings of educational practice.

Research conducted in a qualitative paradigm does not allow the results to be generalized beyond the study sample, and – in this sense – it is not possible to speak of objective research results here. Definitely, the use of quantitative research carried out on large, randomly selected, controlled samples would make it possible to identify the contexts and the intensity of the occurrence of teacher practices outside-the-box.

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An investigation into the extent of, and reason for, the theory-to-practice disparity in Montessori early childhood settings in South Africa

Summary

This mixed methods study investigates the factors that affect the implementation of what is perceived to be "authentic" Montessori practice in South African Montessori preschools through the lived experience of eight teachers trained by Montessori Centre South Africa (MCSA). Previous Montessori research in Europe and North America has addressed the results of, but not the reasons for, modification to Montessori best practice. No research of this kind has to date been conducted in South Africa, which has a substantial Montessori following. This phenomenological study was conducted over a two-month period with eight purposefully selected MCSA graduates from diverse Montessori preschools in Cape Town, Durban, Johannesburg, and Pretoria to explore their lived experiences and to probe for constraints that affect implementation fidelity. Participants completed an online questionnaire which was followed up by extensive individual interviews. Data analysis showed that the majority of the participants experienced situational constraints from school management, parent pressure, and statutory requirements, while some instances of personal bias and reservation towards the Montessori method were also noted. The study's conclusions highlight the necessity for Montessori teacher training colleges in South Africa to collaborate with the South African Montessori Association and the Montessori preschool owners to uphold the fundamental principles of Montessori best practice to preserve the educational ethos of the Montessori method for the ultimate benefit of the child.

Keywords: implementation fidelity, theory-to-practice disparity, Montessori best practice, lived experience

Słowa kluczowe: wierność implementacji, rozbieżność teoria-praktyka, zasady najlepszych praktyk Montessori, doświadczenie życiowe

Introduction

Decades of research into school and educational reform have agreed that the indication of a nation's schools is entirely dependent on the efficacy of the nation's teachers who determine their students' learning outcomes (Feiman-Nemser 2001; Gravett 2012). The process of learning to teach however, is an intricate and multi-faceted process that is shaped by

numerous factors including teachers' personal beliefs about teaching and learning, contemporary educational theory and the implementation thereof presented in teacher training colleges, and situational factors that are faced by teachers in their first years of teaching (Feiman-Nemser 2001; Anderson, Freebody 2012). What the novice teacher does in the classroom is further influenced by relational elements such as pedagogy, curriculum, context, and the children's response to the teaching (Korthagen 2011). The first years of teaching are an intense and formative time. Filling the gaps between teacher education and the reality of the teaching experience is an ongoing challenge for teacher training programmes. It is therefore of great importance that the educational theory and pedagogy presented in teacher training programmes relates sufficiently and meaningfully to the applied knowledge and work required of today's teachers (OECD 2008; Anderson, Freebody 2012).

Montessori Centre South Africa (MCSA), one of South Africa's largest private Montessori teacher training colleges, offers an accredited National Diploma in Early Childhood Development specializing in the Montessori Method. Since its inception in 2011, MCSA has graduated over 1000 qualified Montessori practitioners into the South African early childhood teaching sector.

The author's role as an MCSA director and senior faculty member at the MCSA Cape Town campus allowed a first-hand opportunity of involvement with both the pre- and in-service teachers within the organization. MCSA students are required to complete a 420-hour professional placement as part of their qualification requirement. Finding appropriate placements and mentors for training student-teachers for mainstream schools is a widespread challenge for teacher-training colleges across South Africa (Gravett 2012). This dilemma is aggravated for training Montessori teachers when the criteria for selection as a placement also requires that the school adheres to Montessori best practice standards. It has become increasingly apparent that the pedagogy that is being practiced by MCSA's graduates (who are often the mentors of the new students) is significantly different from the content that they have been taught.

The term "authentic" itself, however, begs scrutiny with regard to Montessori practice. When applied to Montessori practice, "authentic" implies that the method is being applied in the "original" way as taught by Montessori (Lillard, McHugh 2019). There appears, however, to be a divide between the formal principles as enshrined by Montessori education bodies such as the Association Montessori Internationale, the American Montessori Society, Montessori Australia Foundation and the South African Montessori Association, and the actual day-to-day practice within classrooms. The concept of authenticity also becomes problematic when applied to educational practice, which is inherently dynamic and responsive to individual learner needs, teacher interpretations, and socio-cultural influences. From an academic standpoint, this paper grapples with the premise that an "authentic Montessori" experience exists as a quantifiable entity. Can we really measure the authenticity of Montessori practice, or are we confining our inquiry to the tangible aspects that can be empirically investigated and documented, possibly overlooking the intangible qualities that give life to Montessori's philosophy? In exploring what constitutes authenticity, this study

therefore acknowledges the fluid nature of educational practice, recognizing that while an environment may be "prepared" according to Montessori standards, it may not necessarily be conducive to the foundational Montessori ethos, which would have a definite effect on the children it serves.

The aim of this study was to explore the lived experience of eight practising MCSA graduates working in Montessori preschools across South Africa by means of a phenomeno-logical study. The objective was to allow the collection of rich and textured data to provide insight into participants' understandings, accounts, perceptions, and interpretations of their practice in order to formulate and construct an improved teacher training strategy that would support the upliftment of "authentic" Montessori practice in South Africa.

This objective guided and framed the initial primary research question: **How do South African Montessori preschool educators perceive and interpret the factors influencing the implementation of authentic Montessori practice?** Against this backdrop, this study critically investigated and explored the factors that are perceived by each participant as supporting or hindering their implementation fidelity to Montessori practice. These factors play a pivotal role in shaping the actualization of the Montessori philosophy and, thus, merit thorough examination.

Methods

This investigation adopted a pragmatic interpretivist framework, which prioritized an in-depth exploration of specific issues over the formulation of broad generalizations (Maree (ed.) 2016; Mukherji, Albon 2018). Interpretivism's ontological stance was applied here through the lens of phenomenology, examining the diverse realities and experiences of Montessori preschool teachers across South Africa by acknowledging the importance of the participants' lifeworld (context) and the interpretive role of the researcher during the process.

Study design

The prevalence of mixed methods research has grown as scholars recognize that singular quantitative or qualitative approaches may not comprehensively address research questions or specifically fulfil the objectives of social studies (McMillan, Schumacher 2010; Maree (ed.) 2016; Schoonenboom, Burke Johnson 2017). The use of multiple methods in this study allowed for the development of depth of understanding of the multi-faceted and complex character of the participants' lived experience which is not always possible with a single method approach (Denscombe 2010).

This study was designed as an exploratory sequential investigation in which detailed qual-itative data were used to illustrate and explore the initial quantitative findings (Denscombe 2010; Maree (ed.) 2016). Quantitative data were gathered by using unbiased standardized procedures through structured, closed-ended questions intended to yield reliable and valid

scores (Maree (ed.) 2016). These data were treated as the introductory phase to the research, providing an overview of the research phenomenon. The ensuing exploratory qualitative research yielded deeper detail of how the participants perceive and make sense of themselves within their social constructs through the use of open-ended questions that allowed for a rich description of their lived experiences (McMillan, Schumacher 2010; Maree (ed.) 2016).

The research process concluded with an integration phase, where insights from the qualitative analysis were combined with the initial quantitative findings, to create a cohesive understanding.

Population and Sampling Strategy

While the true sample population for this study would have been all Montessori preschool teachers in the country, practical considerations and time limitations constrained and prohibited such a wide-scale study. As the subject matter of this research is not objective data, but rather the personal accounts of the participants' lived experience, a smaller exploratory population sample of ten practising Montessori Centre South Africa (MCSA) graduates was purposively selected from the MCSA graduate pool of approximately 800 students in the hope that a diverse selection of participants would allow differing experiences as a result of their unique contextual situations. Written permission to contact the participants was granted by Heidi van Staden, MCSA Director, after the study was approved by the Roehampton University Ethics Committee. Eight invitees elected to participate in the study.

Description of Research Methods

Quantitative data were sourced through online surveys administered via Google Forms. The survey integrated dichotomous and rating scale questions to respectively gather nominal and ordinal data, facilitating comparison of various metrics and participant opinions (Cohen et al. 2007). While questionnaires are user-friendly and produce standardized responses, they may lack nuanced data and limit the researcher's ability to verify the authenticity of the responses (Denscombe 2010; O'Leary 2017). To complement this, semi-structured interviews were conducted to elicit detailed, unrestricted responses, allowing a deeper dive into the motivations and perspectives of participants, thereby generating a wealth of qualitative data (Kvale 1996).

Data collection instruments and procedures

The questions on both the data collection tools were based on the six principles of Montessori best practice as upheld by the South African Montessori Association (SAMA 2018) (Table 1).

Table 1. South African Montessori Association (SAMA) Montessori Fundamental Principles

Principle	Description
1	Classes in Montessori Schools are mixed-age and non-graded
2	Montessori schools accommodate an extended period of uninterrupted self-chosen activity – a period during which children can choose their own activity and work undisturbed for a minimum of three hours
3	Rewards and punishments are not used in a Montessori environment
4	A prepared environment is a critical component of Montessori pedagogy
5	The adults in the prepared environment exhibit and apply the principles of Montessori pedagogy
6	Montessori schools implement the SAMA Montessori curriculum for ages 0–12 years

Source: SAMA (2018).

All data was collected between 23 November and 2 December 2019. Participants initially completed the 20-minute Google Form online questionnaire and subsequently participated in a 60-minute online semi-structured interview that was conducted in a private Zoom chat room and audio-recorded for transcription.

Outline of analysis method

The analytical process of this investigation was inductive, building from specific instances to broader generalizations; and it was shaped by the researcher's own epistemological perspective, acknowledging the influence of personal beliefs on the interpretation of complex, phenomenological data (Denscombe 2010; Quotshi 2018).

Quantitative Data Analysis

A questionnaire was used to obtain the nominal biographical data of both the participant and the school to determine the situational context of the sample group (Denscombe 2010; Maree (ed.) 2016). Montessori Best Practice principles and the participants' perception of challenges thereto were recorded on Likert scales to produce ordinal data that was used to inform individual interview questions to further explore and analyse these findings (Cohen et al. 2007; Maree (ed.) 2016). Frequency distributions were entered and calculated manually on an Excel spreadsheet.

Qualitative Data Analysis

Qualitative data analysis recognizes the varying interpretations that people attribute to different situations and phenomena (Mukherji, Albon 2018). All interviews were transcribed verbatim by the researcher to allow maximum familiarity of data. This resulted in 123 pages of transcribed data. The data were first colour-coded to identify the six SAMA Best Practice Principles (coded BP1–BP6). Sub-codes were allocated to specific explanatory criteria aligned with BP4 and BP5 (Table 2).

Table 2. Montessori Best Practice Coding Key

Code and Sub-code	Description
BP1	**SAMA Principle 1:** Classes are mixed-age and non-graded (3–6 years)
BP2	**SAMA Principle 2:** Offer an uninterrupted 3-hour work cycle
BP3	**SAMA Principle 3:** No rewards or punishments
BP4	**SAMA Principle 4:** Offers a fully prepared environment
4.1	Serves the developmental and pedagogical needs of the child
4.2	Supports the freedom of movement, speech and association
4.3	Supports free choice of activity
4.4	Facilitates normalisation
4.5	Has a full complement of Montessori materials
BP5	**SAMA Principle 5:** Adults exhibit and apply Montessori principles
5.1	Display respect and patience
5.2	Balance non-intervention with non-abandonment
5.3	Show trust in Montessori principles
5.4	Understand role as an observer and interpreter rather than teacher
5.5	Guide the child to normalisation
BP6	**SAMA Principle 6:** Implementation of the SAMA 3-6 Curriculum

SAMA– South African Montessori Association

Source: own research.

The first transcript was read again to identify perceived challenges to best practice. These challenges (sub-themes) were grouped to develop overall themes (Table 3). As each additional transcript was read, new sub-themes were added and the previously read transcripts were read again to determine whether they contained any relevant data which were coded accordingly. Kvale (1996) suggests that coding in this manner allows the data from qualitative studies to come together in a conceptualized "web of meaning".

Table 3. Perceived Challenge Coding Key

Theme and Sub-theme	Description
C1	**Perception of Impact of School Management**
1.1	No school training or focus on MBP
1.2	Onus on individual teacher to uphold her/his understanding of MBP
1.3	Management not Montessori-trained, therefore lack understanding of MBP
1.4	No Montessori-based continued professional development offered by school
1.5	Management does not seem to value the teachers' Montessori expertise
1.6	Teachers need to compromise MBP to accommodate management decisions
1.7	Non-Montessori-trained staff not upholding MBP
1.8	Space restricts MBP
1.9	Pressure to get children to a certain "level"
1.10	School policies negatively impact MBP
1.11	Adults' roles in environment not clearly defined
1.12	Limited cohesion between adults in the environment
1.13	Extra-murals planned during work cycle
1.14	Limited funding for resources affects MBP
1.15	Number of children in the class affects MBP
1.16	Lack of communication from management

MBP – Montessori Best Practice

Source: own research.

An inductive reasoning approach was used to interpret the data against the research question (Maree (ed.) 2016; Mukherji, Albon 2018)(Table 4).

Table 4. Example of Coding and Annotation

Transcript Snippet	Annotation	Challenge Coding Sub-theme
Interviewee: <u>OK, it's been a bit tricky to be very honest with you. I do find that in today's time there's very little discipline.</u> I don't know if that's worldwide, or just in South Africa, but I <u>did find that the children are so much harder to communicate with,</u> and just as we were taught to go down to the child's level, be calm and speak with kind and positive words, <u>I feel like the children just have very little respect for the adults, which this term specifically has been extremely challenging for myself and my co-worker.</u>	Finds general disciple 'tricky'. Children hard to communicate with. Children have little respect for adults and environment.	3.2 3.12 3.4

Source: own research.

A strength of mixed methods research is the methodological triangulation which gives the research validity by checking the standardized questionnaire responses with the detail from the interviews. This enabled the researcher to engage with differing perspectives and thus enhanced the completeness of the findings whilst simultaneously reducing the chances of inappropriate generalizations (Denscombe 2010). This was particularly useful when integrating the participants' responses from the questionnaire and the interview where both correlations and discrepancies were noted.

Constraints and limitations of the Data Collection Process

This research, while limited in size, has attempted to understand the teachers' lived experiences and their implementation fidelity of Montessori best practice. The methodologists identify the implicit limitation in the results of such a small-scale study not being generalizable except where other parties see value in their application (Maree (ed.) 2016). Alase (2017) however posits that data do not necessarily need to be statistically generalizable for inferences to be drawn that are unique to a particular phenomenon. This is supported by Kvale (1994) who suggested that exploring the lived experience rather requires a shift from generalization to contextualization. Despite the small sample size, it was evident that the themes that emerged from the data collected were sufficient for this exploratory investigation as similar information was being received. Full saturation may not yet have been reached, and it is likely that a larger sample may have identified further key themes.

Despite its limitations, this research is compelling as it aims not to prescribe or judge, but to understand and reflect upon the lived experiences of those at the forefront of Montessori education in South Africa. In doing so, it illuminates the ways in which Montessori educators navigate the intricacies of authenticity, fidelity, and adaptation in their daily professional lives.

Results and Discussion

There is increasing interest in Montessori education as an alternative to the mainstream. A key tenet of Montessori education is that as children are motivated to self-construct by innate and intrinsic developmental forces, all learning must be child- and not adult-driven (Culclasure et al. 2019; Lillard 2019). To accommodate this development, the Montessori method is centred on the goal of creating a context for deep and uninterrupted concentration that Montessori calls normalization; "the most important single result of our whole work" (Montessori 2012: 153). These insights about motivation and concentration are consistent with similar contemporary perspectives, most specifically the theoretical and practical implications of optimal experience or flow theory (Rathunde, Csikszentmihalyi 2005). Csikszentmihalyi (2000) himself stated that "the whole notion of normalization is almost eerily similar to the flow experience."

The central challenge to both Csikszentmihalyi and Montessori's concentration-based vision of education is the creation and maintenance of a learning environment that facilitates deep concentration and flow by supporting and extending the child's interest with an appropriate balance between existing skills and challenges without interfering with their choices (Rathunde 2001, 2015; Rathunde, Csikszentmihalyi 2005; Lillard 2019).

An investigation of the fundamental Montessori best practice principles of AMI/USA (2009), AMS (2019), SAMA (2018), Montessori Australia Foundation (MAF n.d.) and Culclasure et al.'s (2019) Logic Model shows an overlap with some modification in three main principles: multi-age/mixed-age groupings, uninterrupted work periods, and the provision of a full set of Montessori materials. Each of these principles has a direct effect on the development of concentration, normalization and flow:

Multi-age grouping

There is agreement that authentic Montessori preschool classrooms must consist of a mixed three-year age group of children of 2.5 to 6 years for peer-learning.

Uninterrupted work periods

AMI, AMS, SAMA, and the Logic Model require Montessori schools to provide an uninterrupted prolonged work cycle of no less than three hours daily, five days a week. No enrichment programmes, group snacks, or whole group lessons may be scheduled during this period. MAF, whilst also advocating a three-hour work cycle, allows the integration of speciality programmes as long as these are consistent with Montessori key principles.

Montessori materials

AMI is the most prescriptive body, requiring a complete set of Montessori materials purchased from an AMI-approved manufacturer. MAF requires a full complement of developmentally appropriate Montessori materials, resources, and activities without a purchasing specification. Both AMS and SAMA require their member schools to be equipped with fundamental Montessori materials, but allow the incorporation of curriculum support (i.e. supplementary) materials provided that these do not replace the primary use of the Montessori materials. The Logic Model does not provide a description for the "full set of Montessori materials."

The central theme of this discussion is the underpinning foundation of the three previously highlighted principles of Montessori best practice, with a view to identifying if and how South African Montessori teachers show fidelity to their implementation. A fourth principle of the role of the adult (as included in SAMA's Fundamental Principles) has also been included.

Research Question 1: How do South African Montessori preschool educators perceive and interpret the factors influencing the implementation of authentic Montessori practice?

This question sought to understand the daily lived experience of the teacher, taking into account the teacher's own commitment to, and perceptions of, Montessori implementation fidelity.

Individual Commitment to Montessori Best Practice

Individual SAMA membership is a pertinent consideration as members commit to the Code of Conduct in upholding authentic Montessori practice (SAMA 2020). Of the eight participants, only three are individual SAMA members employed in a SAMA-member school. Two are non-members working in a SAMA-member school, and three are neither individual nor school members. This lack of commitment indicates that the participants did not seem to perceive value in SAMA membership, which could also affect their commitment to upholding the best practice principles.

School Management Support for Montessori Best Practice Principles

Despite only five of the participants being employed in SAMA-member schools, all participants acknowledged awareness of the SAMA Fundamental Principles. Five teachers indicated that their school has regular training meetings to revisit and discuss Montessori principles and their application. Deeper questioning during the interviews however revealed the participants' concern that most of these meetings were general staff meetings aimed at discussing planning and children, rather than focusing on revisiting and supporting the teachers in implementing best practice.

> We should be running that throughout the whole school. There should be a certain level that we should all be meeting up to. So, I personally think that is something that really bothers me a little bit because each teacher or each class runs their classes as individuals.

> We don't really have these meetings. We have our staff meeting where we discuss everything, but we haven't really ever discussed anything like that across-the-board.

Lillard (2019) posits that implementation fidelity problems are likely to occur when school management have no Montessori training. This is evident in the following comment:

> If we don't do anything then Montessori doesn't get really spoken about even though we are a Montessori school. I've had to advocate a lot for Montessori because none of the people above me are Montessori trained at all. So, they actually don't know what we're supposed to be doing.

Individual Agreement with Montessori Best Practice Principles

Daoust's (2004) research on the examination of implementation practices in Montessori early education suggests five areas of inconsistent application of Montessori practice in American Montessori preschools. These are the three-hour uninterrupted work cycle, multi-age classrooms, presenting materials to children individually rather than collectively, providing opportunities for children's choice, and fidelity to Montessori materials (Fig. 1). A five-point Likert Scale was used in the South African study to determine the teachers' degree of agreement with these principles on a scale of 1 (total disagreement) to 5 (total agreement) to obtain a baseline assessment of individual perceptions.
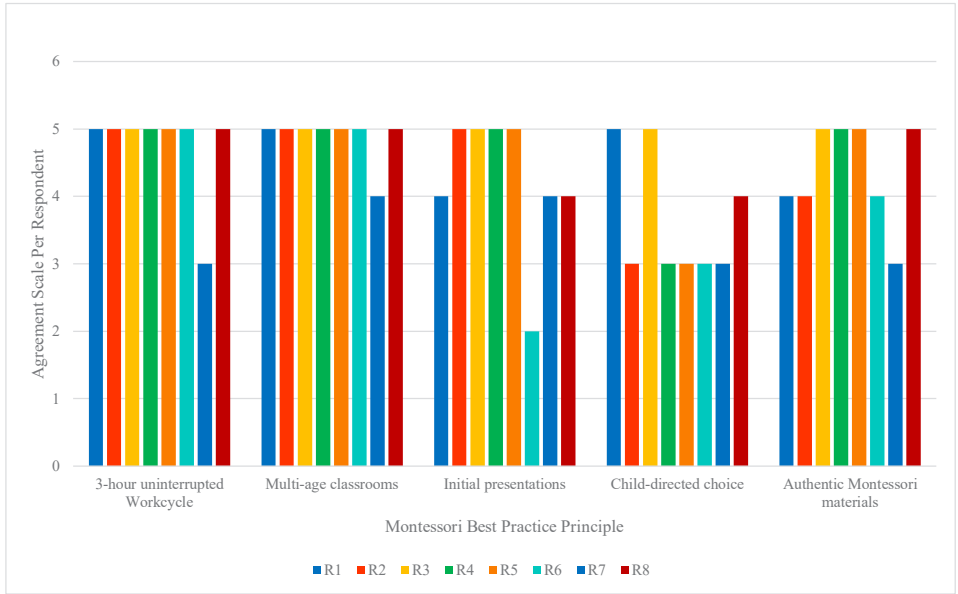
Figure 1. Level of Agreement with Montessori Best Practice Principles per principle

Source: own research.

The participants mostly agreed with the principles of the multi-age groupings and the three-hour uninterrupted work cycle. Child-directed choice, Montessori materials, and initial presentations, which are all core tenets of the philosophy which lead children to a state of normalization or flow, were not as highly regarded. These findings indicate that the teachers' individual conceptual frameworks differ in various degrees from the Montessori ideal, which could further compromise the implementation fidelity of their delivery.

Classes in Montessori schools are mixed-age and non-graded

Authentic Montessori classrooms encourage three-year age groupings per class: 3–6, 6–9, 9–12, 12–15 and 15–18 years. Children should ideally remain in each classroom for a full three-year cycle in order to complete the full complement of materials relevant to that phase, and to fully benefit from the exposure to both peer-learning and peer-teaching (Lillard 2007). Montessori spoke about the "vertical categorizations" of the mixed-age classrooms in many of her writings.

> The main thing is that the groups should contain different ages, because that has a great in-fluence on the cultural development of the child. … You cannot imagine how well a young child learns from an older child; how patient the older child is with the difficulties of the younger. It almost seems as if the younger child is material for the older child to work upon (Montessori 2008: 68).

Montessori's views are corroborated by research conducted by Bailey et al. (1993) and Gray (2011) who measured the overall development of children in mixed-age classrooms. These children were found to show quadratic improvement in all developmental areas whereas children in single-age classrooms only showed linear gains.

The split of the South African early childhood curricula into Birth to 4 years followed by single-year outcomes from Grades R to 12 (DBE 2011, 2015) makes the provision of this principle of Montessori best practice challenging for South African Montessori schools. SAMA's (2018) Best Practice Guidelines state that Montessori schools may not offer a sep-arate Grade R class. This investigation however revealed that two of the eight schools (one of whom is a SAMA member school) do offer a separate Grade R class. One participant stated that this is "just to keep the parents happy" and another that it "was a decision that we took, I think largely because that's what parents were looking for." This indicates a lack of understanding from the parents and the school management about the benefits of the keeping the children in a multi-aged environment.

Montessori schools accommodate an uninterrupted three-hour work cycle

High-fidelity Montessori environments are designed to facilitate the development of concentration through self-chosen, individual, and purposeful engagement with specially-designed, developmentally appropriate learning materials within an uninterrupted three-hour work cycle (Lillard 2007; Lillard, McHugh 2019). This is in direct opposition to the South African Grade R Curriculum Assessment Policy Statements (CAPS) programme (DBE 2015) that details a macro-level of daily schedules in prescribed blocks of time for small and large group activities. The uninterrupted three-hour work period during which the children are free to work without interruption or group snack, circle (ring) time, or any specialist enrichment activities (SAMA 2018) is an essential principle as it facilitates the development of normalization (or flow) (Rathunde 2001, 2015; Montessori 2012). It is

proposed that every adult-imposed scheduled event or interruption during the work cycle is may/will diminish the children's concentration by producing 'certain inner conditions in the mind of the child which deprive him of self-confidence and neutralize his ability to finish what he has started' (Montessori 2007: 53). This would result in the child becoming deviated from the path of natural development and displaying characteristics that are no longer conducive to optimal learning.

It was evident in the research that not all participants were clear on what an **uninterrupted** work cycle should be. Whilst six of the participants reported a full three-hour uninterrupted work cycle on the questionnaire, it emerged that four scheduled enrichment activities occurred during the work cycle, four interrupted the work cycle for a group snack, and four required a compulsory circle time. This suggests that only two of the participants support this principle correctly.

Commentary on this topic alluded to the consequences of this modification which indicate that concentration and flow are definitely being affected by the interruptions.

> So, three times a week we do have a 3-hour work cycle but it's not true Montessori uninterrupted because of that half an hour where we are actually doing improvized work with either music or PE.

> We had to now have a snack time so that's sort of interrupted them because if a child is busy working and they hear 'ooh snack' they immediately leave their work and they go to the snack.

> When [the extra-mural teacher] arrives, it's like chaos even for the ones that are in the classroom. They have to pack away quietly and we still reinforce that, but because they are working, they get interrupted. This is disruptive for the ones who are not going because the others get so excited.

> Yes, so we have our morning work cycle and then we'll break at about 9h 45 and have a circle time and have like a theme.

One participant's comment in particular sums up the effect of the **interrupted** work cycle: "It's typically not a day where a lot of productive stuff happens".

The prepared environment as a critical component of Montessori Pedagogy

Montessori emphasized the preparation of a favourable environment which serves the developmental and psychological needs of the children. She suggested that the "purpose of education must be to elevate the individual" (Montessori 2012: 10) and that it is our duty to "give the child a *help to life*, to develop and to adapt to the environment in which he must live" (Montessori 2012: 186). Montessori observed that three to six-year-old children need movement, most specifically movement of the hand, in order to develop the mind in adapting to their environment, calling the hand "the instrument of the intelligence" (Montessori 2012: 16). The materials that provide the organizing structures for each area of the curriculum (Lillard 2007) were designed as "keys to the universe" (Standing 1998: 242)

which serve to deeply engage the child's hands and mind in a spiral curriculum of learning through manipulation, repetition, and the application of the knowledge gained into the outside world. Montessori suggested that the adult should be the custodian of the environment who individually sets up points of contact between the child and carefully selected manipulative materials that feed the child's interest at that given time (Montessori 2016, 2017). These materials incorporate what Montessori (2016) termed a "control of error" – a didactic quality that provides feedback to the child if an error is made, that the child can work on correcting without the assistance or interference of the adult (Montessori 2008).

During this study only two of the participants reported that they are true to the Montessori materials, five reported a 10% supplementation and one a 30% supplementation. The reasons for the supplementation were explained as follows:

> So for me to put something on the shelf … it would be something where either the children would need more practice with the same concept but are bored of the materials.

> So, we do use 'Letterland'. We switched to Letterland because of when they get to Grade 1 or Grade R in a mainstream school.

> We would like to have plenty of Montessori materials and we would like the children to work predominantly with Montessori materials, but we feel that they are not drawn to those Montessori materials and that they are naturally inclined or more drawn to the supplementary materials.

Similarly, two participants stated that they did not use worksheets at all in their daily practice, whereas five stated only some use, and one reported that worksheets were fully part of the programme. The manner in which worksheets are used seemed to depend on the teachers' individual degree of agreement with, and understanding of, the Montessori approach relevant to this developmental plane as is evidenced in the comments below.

> For my older children I get in bound workbooks, which is not really Montessori, but the lady who makes them makes only Montessori material. […] I just feel like it prepares them a little bit better for the 6–9 environment because they are then a little bit more used to working in a book.

> If children are struggling with the "b" and "d" then I also go to "Teachers pay Teachers" and see what other teachers do or what worksheets I can do to help them with the b and d and not confuse them. […] It's to supplement, because with Montessori we don't have a lot of worksheets.

The adults in Montessori environments trust in the Montessori principles, methodology, and pedagogical aims

Huxel (2013) posits that whilst the elements of Montessori best practice as detailed above are essential, the pivotal piece of preparedness remains with the Montessori teacher whose spiritual and reflective nature will determine how the method unfolds for the children; either rendering it authentic or inauthentic Montessori. Malm (2004) further suggests that this

requires a commitment not only to being a teacher, but to being a "Montessori teacher", characterized by deep identification, awareness, and adherence to the Montessori educational principles. Critical self-reflection and detailed observations of children are necessary to assist teachers in identifying children's unique developmental needs so as to better serve the child (Christensen 2016).

Research Question 2: How do South African Montessori educators perceive and interpret the impact of external factors such as government rulings, parent expectations, and school leadership on Montessori Best Practice?

The second research question sought to explore how external factors such as government rulings, parent expectations, and school leadership directly affect the teachers' ability to implement authentic practice. The questionnaire included seven 5-point Likert Scale questions (1 = little impact, 5 = great impact) to determine the perceived impact of limited funding, children with behavioural or special needs, school policies and procedures, parental concerns and demands, time constraints, government policies and requirements, and other adults in the environment on their implementation fidelity (Fig. 2). Calculations of the mode provided an overall situational impact overview that indicated impact severity from parent pressure at 5 (greatest impact), lack of funding (multiple modes – 2, 3, 5), children with behavioural or special needs account (4), government policies (3), to school management at 1 (least impact).
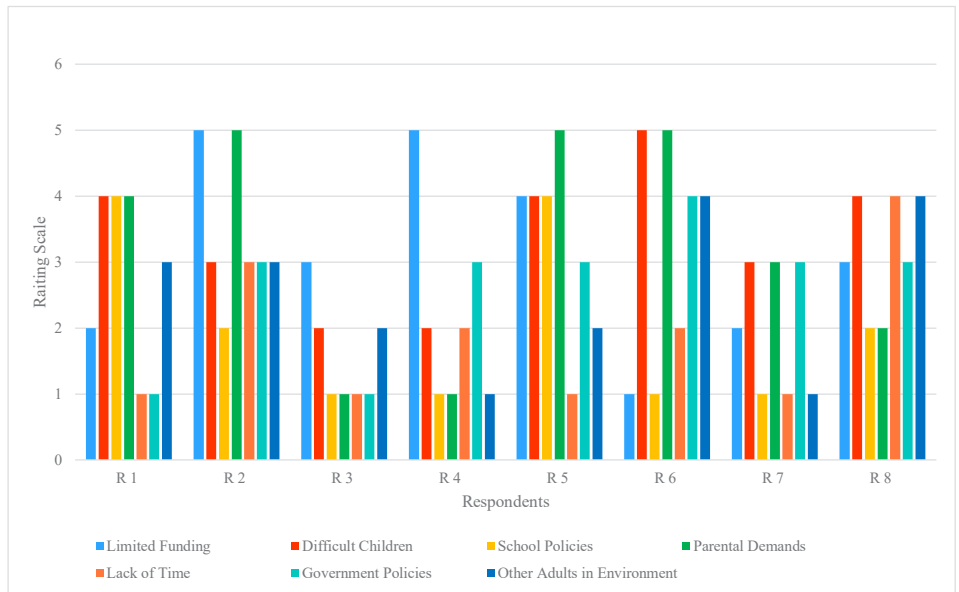
Figure 2. Perceived Situational Constraints on Montessori Best Practice

Source: own research.

Whilst these five criteria were expressly questioned further in the interview, scrutiny of the interview transcript highlighted comments made by the participants that indicated additional situational constraints. These were initially annotated as sub-themes and later clustered into the five overall emerging themes. Interestingly, these themes mostly replicated the themes on the questionnaire with one new emergent theme of "Self Perception" (Fig. 3).
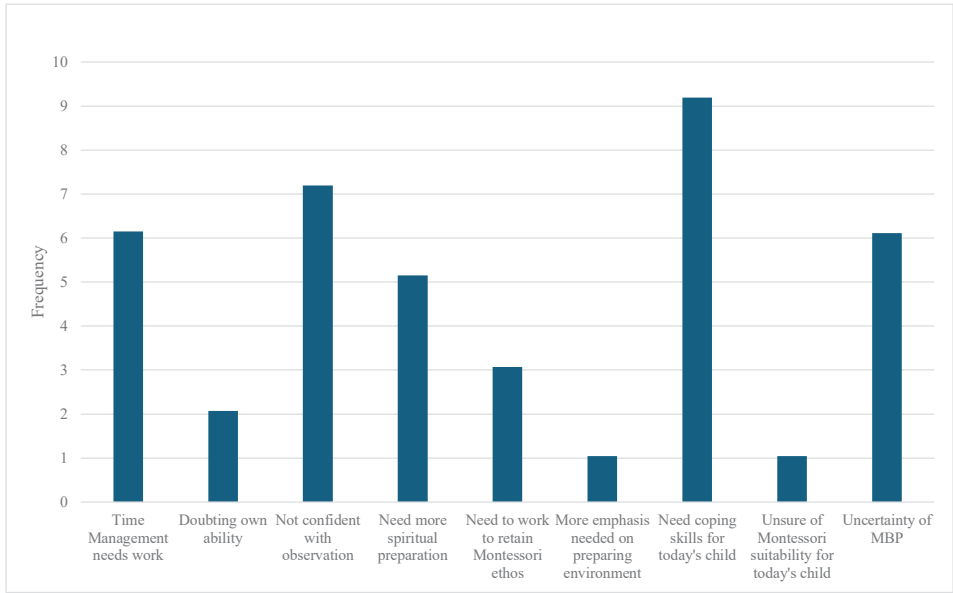
Figure 3. Self-Perception: Frequency of Perceived Factors Impacting Montessori Best Practice (MBP)

Source: own research.

Theme 1: School Management

Seventeen sub-themes were identified in the interview data that pertain to the impact of School Management on the teachers' ability to implement authentic practice. The main constraints hinged on the teachers' perceptions that school management does not actively support authentic Montessori practice and that the onus thus falls onto the teachers as individuals to uphold the practice as best as they can under the school circumstances and according to their own understanding.

> I've been told by management that I'm there to make sure that they stick to proper Montessori principles and I've had to advocate a lot for Montessori because none of the people above me are Montessori trained at all. So, they actually don't know what we're supposed to be doing.

Examples of school management 'interference' with authentic practice happens through management not upholding the three-year moved-age groupings, nor the three-hour uninterrupted work cycle, nor maintaining Montessori material fidelity (Table 5).

Participants also expressed dissatisfaction with the class numbers ("I feel like once I have a certain amount of children in my class, they do not get my individual time"), and on how their Montessori opinions were valued by school management:

> I find it very challenging that when there is a problem, we aren't really able to give some feedback as a teacher on how we see things. It's never really taken positively at all. It's generally taken as complaining and more often than not, brushed off.

Table 5. Perception of Impact of School Management Challenge Coding Key

Theme and Sub-theme	Description
C1	**Perception of Impact of School Management**
1.1	No school training or focus on MBP
1.2	Onus on individual teacher to uphold her/his understanding of MBP
1.3	Management not Montessori-trained, therefore lack understanding of MBP
1.4	No Montessori-based continued professional development by school
1.5	Management does not seem to value the teachers' Montessori expertise
1.6	Teachers need to compromise MBP to accommodate management decisions
1.7	Non-Montessori-trained staff not upholding MBP
1.8	Space restricts MBP
1.9	Pressure to get children to a certain "level"
1.10	School policies negatively impact MBP
1.11	Adults' roles in environment not clearly defined
1.12	Limited cohesion between adults in the environment
1.13	Extra-murals planned during the work cycle
1.14	Limited funding for resources affected MBP
1.15	Number of children in class affects MBP
1.16	Lack of communication from management
1.17	Lack of management support in respect of parent demands

MBP – Montessori Best Practice

Source: own research.

Theme 2: Children with Behavioural Problems or Special Needs

This theme is a cluster of fifteen sub-themes. The main perceptions of difficulty were the children's seeming lack of engagement with the materials, their dependency on the adults, little ability to self-regulate, and presenting with behavioural challenges (Table 6). With regard to the children's connection to the materials, participants felt that "they are just not connecting to the materials," and "I've had to change the way that I teach with the Montessori materials to actually get their children more intrigued and interested in what I'm trying to teach them." These statements indicate that the sustained concentration and purposeful engagement with the materials is not occurring, resulting in behavioural traits such as "lack(ing) concentration" and "los(ing) interest so quickly in activities." These behavioural traits are described by Montessori as "deviated behaviour" displayed by children who are not developing according to the laws of nature (Montessori 2017). This is further supported by the comments made around concentration: "the children are tricky at the moment […] they can't like organize themselves […] it makes working with them really hard," and "the past two years have been quite tricky with regards to concentration. They lack initiative […] I find that it's very difficult to keep them engaged," which also indicate an absence of flow.

Table 6. Perception of Impact of Children Challenge Coding Key

Theme and Sub-theme	Description
C3	**Perception of Impact of Children**
3.1	Children seem to be bored of the materials
3.2	Children exhibit behavioural challenges
3.3	Children require instant gratification
3.4	Children show little or no respect for the materials
3.5	No connection to or purposeful engagement with the materials
3.6	Aggression towards others
3.7	Children need more opportunity for imaginative exploration
3.8	Children dependent on the adults
3.9	Children requiring therapy
3.10	Children presenting with sensory sensitivity
3.11	Children showing an inability to self-regulate
3.12	Difficulty in communicating effectively with children
3.13	Children not taking adults seriously
3.14	Children displaying a lower skill set compared to previous years
3.15	Children coming in mid 3-year cycle from other schools

Source: own research.

It could be assumed that the modifications to the core principles of Montessori practice evident in the schools as previously discussed could potentially be adding to these challenges. This would warrant further research.

Interestingly, one participant (who follows most Montessori best practice principles) stated: "what I found is that it is not the child, but more the adult's ability to cope with the child in their environment."

Theme 3: Parent Pressure

The main challenges perceived by the participants appeared to emanate from the parents' lack of understanding of the core Montessori principles. Parents need to understand the reasons for the principles and why these need to be upheld so that the pressure on the schools can change from being disruptive (i.e. insisting on enrichment activities during the work cycle, academic pressure) to being more constructive and supportive (Rathunde 2015) (Table 7). Common areas of difficulty include the parents' pressure on the children: "Some parents just expect so much out of the four-year-old child; that child is completely pressured into doing multiplication where they just learnt their numbers," and "Parents are just hectic. Every year they get worse and this year has been my worst year; they are so competitive. They're making their poor children do all of these extra Math and Literacy things after school." This pressure often results in school management negating Montessori principles, and puts pressure on the teachers to also defer to the parents' wishes:

> So, I find it actually extremely difficult with regards to being spoken to every morning or chased in my classroom by parents with asking "why is my child not doing this yet, why is my child not doing that yet"?

Table 7. Perception of Impact of Parents Challenge Coding Key

Theme and Sub-theme	Description
C2	**Perception of Impact of Parents**
2.1	Lack of parental support in terms of discipline
2.2	Parent pressure to be too involved with children (affects independence)
2.3	Parental pressure for academics affects MBP
2.4	Parents comparing their children puts pressure on MBP
2.5	Parents questioning the Montessori method and standards affects MBP
2.6	Parent demands impacting MBP
2.7	Parent demands for extra-murals impacting MBP

MBP – Montessori Best Practice

Source: own research.

Theme 4: External and Statutory Regulations

The greatest impact being experienced with regards external and statutory regulations seemed to be the perceived pressure from the parents on the school to implement the Continuous Assessment Policy Statement (CAPS) curriculum to Grade R-aged children. Many Montessori pre-school children feed into mainstream schools for formal schooling owing to the shortage of Montessori primary schools in South Africa, and in most of the cases where Montessori materials are being supplemented and worksheets used, the reasons given by the teachers were CAPS and primary-school readiness related. The participants whose schools offer a separate Grade R class substantiated this as follows: "This is where we introduce the CAPS themes into the system to make sure that each week, we keep up with that because in Grade R we need to have those things," and "Obviously we've got CAPS with regards to government, because most of our children go back into government schools around the area." Only one participant acknowledged that parent education could positively impact this constraint to Montessori implementation fidelity: "I find more pressure from my community that doesn't understand Montessori, than the government itself."

Theme 5: Self-Perception

This theme emerged from the data spontaneously, as it was not the study's intention to focus on the individual's internal factors. Nine sub-themes came to light that showed evidence of self-reflection, or what Montessori (2012, 2017) calls, "spiritual preparation." The challenge points identified by the participants point to underpinning facets of Montessori practice. Participants expressed doubt in their observation abilities ("My only challenge, and something I still don't feel very confident about, is observations"), time management ("the day runs out too quickly! I don't find like there's enough time in the day to get everything done") and in the application of the Montessori method ("keeping with the true Montessori ethos has also been difficult"). This opens the door for further research to be conducted on the need for continued professional development. A further need was identified as "skills to cope with today's child," which could also be linked back to the preparation of a favourable, authentic Montessori environment that allows the child to adapt to her/his time, place, and culture in a developmentally appropriate manner as advocated by Montessori (2012) and Csikszentmihalyi (cf. Rathunde 2001). A profoundly reflective statement by one Montessorian sums this up perfectly: "The biggest challenge I found in my school with implementation of Montessori practices is very much myself."

Concluding Remarks

The adoption of a Montessori educational pre-school curriculum requires more than just a trained teacher and a core complement of Montessori materials. This study has indicated that there are some considerable gaps in the application of the Montessori core philosophy

by the participants as a result of both individual and school management perceptions and misunderstandings of the method, driven by external pressures from the parent body and statutory requirements.

If the normalization is indeed "the most important single result of our whole work" (Montessori 2012: 153), then it is imperative that Montessori teachers prepare an environment that works with the child's innate capacities to facilitate the required depth of concentration and flow (Rathunde 2001). It is evident from the research conducted within this study that some of the teachers' underpinning understanding of, or subscription to, the fundamental principles of Montessori Best Practice is compromised. Further research on the reasons for this disparity would be of benefit to the South African Montessori community.

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Writing and reading in Montessori preschools in the digital age – A valid teaching approach?

Summary

Writing and reading instruction in Montessori preschools remains consistent despite digital tools. In this article, the validity of Montessori's reading and writing instruction is reviewed and discussed in relation to both previous research and societal changes influenced by technology. In conclusion, initial writing and reading instruction in Montessori preschools receives support from existing research, as it emphasizes sensory-motor experiences, including paper-and-pen activities. However, preschool children's perspectives on the tools used for writing and reading instruction and the work they carry out in Montessori preschools have not yet been considered in research. Therefore, we suggest a need for further studies in order to better grasp the validity of her theory. Such studies could constitute an important contribution to the discussion about when and how writing by hand should be introduced within, as well as outside the Montessori community.

Keywords: digital tools, Montessori, phonics, sensorimotor experiences, writing instruction

Słowa kluczowe: narzędzia cyfrowe, Montessori, fonetyka, doświadczenia sensomotoryczne, nauka pisania

Introduction

Instruction in writing and reading in Montessori preschools has a longstanding tradition and has remained largely unchanged for over a century, despite the development of computers and other digital tools. In Montessori education, the significance of the motor component of writing is underscored, as cognitive processing is viewed as intricately connected with the body (Montessori 1989). Handwriting and the preparation of the hand for handwriting

are therefore emphasized (Montessori 1972). According to Mangen and Balsvik (2016), this contrasts with many traditional preschools and schools in Europe and the US, where children often have their initial writing experiences using digital tools.

The aim of this article is to review and discuss the validity of Montessori's writing and reading instruction based on both previous research and societal changes resulting from technological advancements, among other factors. The research questions this article seeks to answer is the extent to which Montessori's teaching approach to initial writing and reading instruction is supported by existing research, as well as areas where such support may be lacking. Thus, the article also underscores the need for further exploration of this approach.

Montessori's theoretical approach to writing and reading

The preparation for learning to write and read begins in Montessori education during the early preschool years, typically around the age of three to four. Montessori asserted that even at this young age, children display an inclination to express their thoughts in writing (Montessori 1972). Notably, Montessori advocated reversing the traditional sequence of learning to read and write, arguing that the ability to write precedes that of reading a text (Montessori 1972). Therefore, in the Montessori environment, didactic materials are provided with the aim of developing various aspects of fine motor skills necessary for handwriting. These materials are incorporated into exercises designed to engage and coordinate the children's motor skills in diverse ways (Montessori 1914). The exercises systematically increase in complexity over time. For instance, one such activity involves working with cylinder blocks, a sensorial material comprising four blocks containing ten cylinders of differing diameter and length. Children are tasked with lifting, arranging, and replacing the cylinders in their respective cavities. Montessori (1914) asserts that the primary objective of such activities is not for children to learn to place the cylinders correctly but, akin to other sensorial materials, to hone their skills in observation, comparison, assessment, reasoning, and decision-making. Montessori stated that:

> The didactic material, in fact, does not offer to the child the "content" of the mind, but the *order* for that "content." It causes him to distinguish identities from differences, extreme difference from fine gradations, and to classify, under conception of quality and quantity, the most varying sensations appertaining surfaces, colours, dimensions, forms and sounds (Montessori 1914: 136–137).

It concerns an internal goal of attention, which prepares the child to notice differences, such as the shape of letters. Simultaneously, the child is taught to use the correct pen grip, a skill not only trained with the cylinders, but also in various other Montessori materials. This is achieved by gripping the cylinders with the thumb, index, and middle finger. Additionally, the child engages in exercises with other sensorial materials aimed at identifying and recognizing pitch and loudness, which contribute to recognizing phonetic sounds. Practical

exercises for motor skills are also provided, preparing the hand for writing. These include structured materials for pouring exercises (to steady the hand) and whisking exercises (to mobilize the wrist).

Montessori emphasizes other exercises as essential precursors to formal writing. These involve tracing the outlines of wooden geometric shapes using the index and middle fingers. Following this, children progress to using geometric shapes in metal, known as the "Exercises for the Management of the Instrument of Writing" (Montessori 1965: 140). Subsequently, they trace these shapes with a pencil on paper. Finally, children are encouraged to fill in these shapes freehand, incorporating vertical lines, horizontal lines, diagonals (in triangles), and eventually circular shapes (in circles and ovals). This teaching approach ensures that children not only practice vertical lines, which Montessori considers easiest for young learners, but also gradually progress to drawing circular shapes with a pencil.

Once the children have completed this variety of motor and practical exercises, they are introduced to tracing the shapes of letters using didactic materials. These materials consist of letters punched out of sandpaper, each attached to a wooden plate. Also, in this activity Montessori underscores the significance of preparing the child's hand for writing.

> Without the previous practice, however, the child's hand does not follow the letter with accuracy, and it is most interesting to make close observations of the children in order to understand the importance of a *remote motor preparation* for writing, and also to realize the *immense* strain which we impose upon the children when we set them to write directly without a previous motor education of the hand (Montessori 1914: 151).

Using the index and middle finger, the child traces the shape of the letter while simultaneously vocalizing the phonetic sound associated with it. Montessori explains the theoretical rationale behind this procedure, stating, "when a letter is given to a child and its sound pronounced, the child fixes an image of it in his mind with the help of his visual and his tactile-muscular senses" (Montessori 1972: 215). This teaching approach embodies a didactic principle whereby the initial letters presented to children are contrasted with each other. According to Ahlquist Tebano, and Gynther (2019), this principle aligns with variation theory, which assumes that in order to be able to discern something, a varied experience of the aspect in question is thus required.

Once children are acquainted with the shape and sound of all the letters, they progress to using the movable alphabet. This alphabet comprises wooden letters, with vowels coloured pink and consonants blue, allowing for the construction of words. With this material, children identify letters corresponding to individual sounds in different words. Montessori describes how, through this activity children will:

> succeed[s] in breaking them up into their component sounds, and in translating them into a row of signs. When the child has composed the words in this way, he knows how to read them. In this method, therefore, all the processes leading to writing include reading as well (Montessori 1914: 154).

According to Montessori (1914), it is only through working with the movable alphabet that children acquire the skills necessary to write by hand. Simultaneously, as described earlier, they learn to read the words they have written.

Evaluating the Montessori educational framework through recent research

In this section, we will examine what previously has been described in relation to existing research in the field. It is worth noting that research on Montessori's teaching approach to writing and reading in Montessori preschools is relatively limited in scope. Nonetheless, several studies suggest that children in Montessori preschools demonstrate superior performance compared to control groups in terms of letter-word identification and phonological decoding abilities (e.g., Lillard 2012; Lillard, Else-Quest 2016; Lillard, Heise 2016). However, as Marshall (2017) emphasizes, there is still a lack of studies elucidating the underlying reasons for this phenomenon,

> if children in the Montessori group do score higher than those in the non-Montessori group on a particular outcome measure, then assuming that that effect can be attributed to being in a Montessori classroom, what exactly is it about Montessori education that has caused the effect? (Marshall 2017: 3).

What Marshall underscores is that isolating specific elements within the Montessori pedagogic theory inevitably presents methodological challenges for any researcher undertaking such a study. It is reasonable to assume that these challenges, to some extent, contribute to the scarcity of such studies. Therefore, in the following section, we will examine key elements in Montessori's teaching approach to early writing and reading instruction, focusing on what has been identified as effective in general research. Given the extensive body of research in this field, we will prioritize systematic reviews and meta-analyses.

Phonics and systematics

As emphasized earlier, Montessori advocates the ideal timing of early writing and reading instruction during preschool, typically around the age of three to four. However, while considerable research has focused on reading and writing acquisition in school-aged children, there has been relatively limited investigation into these processes during the preschool years. Consequently, in a research overview conducted for the Swedish Research Council, the authors underscore the necessity for studies demonstrating the practices employed and potential strategies available in preschool settings to prepare children for formal reading and writing instruction (Taube et al. 2015).

Nevertheless, the available research suggests that early reading and writing acquisition, particularly with an emphasis on phonetic awareness during the preschool years, generally yields positive outcomes (Wolff, Gustafsson 2022). Indeed, there is evidence supporting its effectiveness (e.g., Torgerson et al. 2006; Hattie 2009; Taube et al. 2015). Consequently, in their conclusion, Taube et al. assert that initial instruction should "incorporate activities where children hear, identify, and blend language sounds in words" (Taube et al. 2015: 111), while integrating these activities with systematic instruction on the correspondence between letters and their sounds.

In Montessori's writing and reading instruction, phonemic awareness holds a central role and is systematically taught. For instance, as demonstrated earlier, the progression of teaching letter-sound associations begins with letter-sound associations which contrast. Montessori's phonics approach, as observed by Marshall (2017), is also characterized as synthetic rather than analytic. This means that children "are taught the sound-letter code before using it to encode words (in spelling) and decode them (in reading)" (Marshall 2017: 6). However, this synthetic approach is embedded within a linguistically rich spoken and written language environment, which, as Marshall (2017) emphasizes, aligns with recommendations from previous research.

Motor skills

Motor skills have consistently been identified as crucial for later academic performance (Dinehart, Manfra 2013). In the realm of reading and writing, numerous studies have indicated that children with motor deficiencies, such as balance and coordination difficulties upon starting school, often encounter challenges with reading and writing later on (e.g. Cantell 1998; Kadesjö, Gillberg 1999; McPhillips, Sheehy 2004). Lodalf and Bond (2016) suggest that one contributing factor may be the clear link between children with motor difficulties and low self-esteem, although this relationship is intricate and appears to vary depending on age and gender.

In line with the aforementioned findings, other studies have demonstrated a general positive correlation between motor exercises and learning (e.g., Ericsson 2003; Denervaud et al. 2021; Thibault et al. 2021). For instance, Ericsson's study (2003) revealed that seven classes in grades 1–3, which received additional motor training, achieved superior results in reading and writing, among other areas, compared to the five classes forming the control group that did not receive similar additional motor training.

The research outlined above unequivocally underscores the importance of preparing the child's hand for writing, a principle emphasized in Montessori's approach to writing instruction and its practical application.

Sensory-motor experiences: Paper and pen versus digital tools

Aligned with Montessori's teaching approach to early instruction in writing and reading, sensory-motor experiences have consistently been highlighted as crucial for learning (Shams, Seitz 2008; Bornstein et al. 2013; Ahlquist, Gynther 2020). Specifically, regarding reading and writing acquisition, research indicates that when children engage in simultaneous handwriting and reading of their written work, the brain forms representations of letters owing to the incorporation of sensory information, which is fundamental for long-term memory storage. Strong evidence suggests that writing movements play a role in letter memorization and contribute to visual letter recognition (Longcamp et al. 2003; James, Gautier 2006; Naka 2006; James 2010; James, Engelhardt 2012; Velay, Longcamp 2013).

Unlike typing on a keyboard, handwriting provides continuous feedback to the brain regarding the shape of the letters being written. Multiple studies have demonstrated the significant importance of this feedback (Longcamp et al. 2005, 2006, 2008, 2011; James 2010; James, Engelhardt 2012). A letter written by hand on paper is, in contrast to keyboard typing, essentially an "imprint of action" (Longcamp et al. 2006). Research involving pre-school children (Longcamp et al. 2005) and adults (Longcamp et al. 2006) both indicated that letters and characters learned through computer methods were less well-remembered than those learned through handwritten methods. Additionally, studies revealed that brain functions supporting visual letter categorization responded only to letters that preliterate children had handwritten, compared to machine-written or visually and auditorily experienced letters (James 2010; James, Engelhardt 2012; Kersey, James 2013). Handwriting training, according to these studies, resulted in better letter recognition compared to computer typing training.

Similarly, research has shown that when children explore the shape of letters with their fingertips, they demonstrate greater letter recognition, consequently facilitating decoding (Bara et al. 2004, 2007; Bara, Gentaz 2011). The effectiveness of finger tracing is further supported by Fernald (1998), who observed that children could typically recognize printed words after tracing them with their fingers while vocalizing the word aloud.

In addition to what has been highlighted earlier, researchers have also explored the significance of tactile experiences facilitated by various writing tools. For instance, a study conducted by Alamargot and Morin (2015) revealed that second-grade children encountered "more difficulty calculating segment trajectories when they handwrote on the screen tablet surface with a plastic tip" (Alamargot, Morin 2015: 38) compared to writing with a ballpoint pen on paper. Furthermore, as noted by Mangen and Balsvik (2016), it is essential not only to acknowledge "differences in sensorimotor contingencies of ergonomic affordances of writing implements but that even tactile affordances of the substrate texture may significantly impact central processes and mechanisms of writing" (Mangen, Balsvik 2016: 5).

Discussion

This article is not about whether preschool children should use digital tools or not. We live in a digital world, and children inevitably encounter it. Instead, it addresses when digital tools can interfere with the development of certain essential skills.

The initial writing and reading instruction developed by Montessori over a century ago is strongly supported, as outlined above. The importance of fostering phonemic awareness, preparing the hand for writing, and integrating sensorimotor experiences into initial writing and reading instruction is undeniable when considering the research presented here. Montessori's strong emphasis on sensorimotor experiences in initial writing and reading instruction can be understood in light of her theory of the interconnectedness of the body and mind (Ahlquist 2012). However, it is crucial to acknowledge that the educational landscape has evolved since Montessori's time, with new literacy contexts emerging. Nowadays, many young children have their first writing experiences through digital resources rather than traditional pen and paper. Mangen and Balsvik (2016) highlight a trend in the USA and Europe towards the decline, and sometimes complete abandonment, of paper-and-pencil writing and reading instruction. Advocates of digitalization in education argue for the potential of tablets and keyboards to motivate students, particularly those with underdeveloped fine motor skills (e.g. Trageton 2012). Studies, such as that by Genlott and Grönlund (2013), indicate a preference among young children for writing on computers or tablets over traditional paper methods. However, this trend towards digitalization has raised concerns, as noted by Mangen and Balsvik (2016). There is a growing scientific interest in understanding the role of our bodies and fine motor skills in learning, including reading and writing. From both a theoretical perspective and in alignment with Montessori's principles, the questioning of traditional writing methods may have detrimental effects on children's reading and writing development.

However, research regarding writing and reading has also shown that reading and writing are closely related to engagement and attitudes, which is why reading and writing instruction aimed at developing internal motivation, perceived independence, and self-confidence has been successful. This can be related to the concept of the Matthew effect (Stanovich 1986), which suggests that students who find it easy to learn to read and write tend to enjoy it and, consequently, read and write more and will improve their skills over time. From this perspective, there is reason to pay attention to students' feelings, experiences, and thoughts about the tools that are used for writing and how they are implemented. Even if Montessori's teaching approach to writing and reading is supported by research which clearly shows the value of incorporating sensorimotor experiences in initial writing and reading instruction, we know less about how this approach is received by children. For example, as shown in this article, Montessori stressed that the hand must be prepared for writing, as a couple of studies indicate (e.g. Rule, Stewart 2002; Stewart et al. 2007; Bhatia et. al. 2015). If this is the case, it may have significance for the child's feelings and thoughts about writing in particular. However, this is, as far as we have found out, something that has not been

acknowledged in previous research. Therefore, we argue that there is a need for studies which also pay attention to children's perspectives on the work they carry out in Montessori pre-schools to better grasp the benefits of this approach. Such studies could constitute an important knowledge contribution to the discussion about when and how writing by hand should be introduced within, as well as outside the Montessori community.

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Additional Language Learning in Montessori settings: insights from the implementation process of a Second Language Programme in a Scottish Montessori school

Summary

Very little has been published academically on language learning within Montessori education. This is a field that has grown and evolved from the ground as schools face the need to include additional language learning and develop bilingual programmes as part of their curricula. This article reports on the research findings of an action research exploratory study in a Montessori school in Scotland, which was a follow-up to a three-year action research inquiry in Mexico into the development of a second language programme in a Montessori setting. It shows how another target language in a different national context influences how an implementation process is shaped and some of the factors that come into play. Results are presented considering four phases spread in four school years with the experimentation and strategies used and trialled during this time across school levels. It shows different ways to integrate additional languages into the Montessori learning environment that correspond to strong and weak bilingual programmes (Baker 2001) and some of the factors that influence an effective implementation such as continuity, consistency, and alignment with a school's needs and priorities among others. Language Learning programmes in Montessori settings need to be considered from the perspective of the child, the teachers, the parents and the school as they all integrate to create tailor made bilingual programmes that respond to the context, characteristic and resources of the school.

Keywords: Montessori, second language acquisition (SLA), second language (L2), bilingualism, action-research

Słowa kluczowe: Montessori, nabywanie drugiego języka, drugi język, dwujęzyczność, badania w działaniu

Introduction

Many Montessori schools have now included additional language learning into the education programmes they offer, ranging from limited scope approaches, second language acquisition programmes, immersion programmes, to bilingual or multilingual initiatives. However, accounts of empirical studies of the implementation of such programmes are scarce.

Knowledge in this area is produced by people on the ground working directly in the classroom and addressing the need to provide second or additional languages to pupils, whether they are mainly Montessori teachers coming into second language, or language practitioners becoming acquainted with the Montessori method. Often, the knowledge generated from their experience comes from individual experimentation and is disseminated to others by word of mouth and more recently through specialist webinars and courses.

Practical knowledge and effective practices with regard to teaching languages in Montessori schools are disseminated through colleagues who share similar experiences and reach out to one another and common spaces, such as work placements and training and professional development opportunities. However, these professional discussions rarely go beyond an exchange of practical knowledge that can be generalized to cover the diversity of contexts in which Montessori schools operate. In turn, a diversity of ways to approach language learning that may share common features prevails (Winnefeld 2012; Consalvo, Tomazolli 2019; Rosales-Chavarría 2019) which can change over time (Rosales-Chavarría 2021). This demonstrates that there is no set model or one-way-fits-all for this area of the curricula in Montessori settings. One way to better understand the complexity of the implementation of such language learning programmes is to study cases that respond to the characteristics of the school and the context in which it is situated.

This article reports on the research findings of an action research exploratory study in a Montessori school in Scotland, which was a follow-up to a three-year action research inquiry in Mexico into the development of a second language programme in a Montessori setting. It shows how another target language in a different national context influences how an implementation process is shaped and some of the factors that come into play.

Additional Languages in Montessori Education

Although a Language area which includes oral language, writing, and reading was included in the core Montessori curriculum for Children's House, it was, however, for monolingual classrooms and supported by materials designed for L1 or the majority language of the school community. Dr. Montessori was aware of the existence of English and other languages immersion schools in certain countries and was believed to be in favour of young children learning a foreign language, with her own grandchildren having had immersion experiences as they travelled. However, in her work, she did not explicitly discuss a specific approach to second or additional language acquisition. The need to design bilingual Montessori programmes and include additional languages grew in time partly as a result of the contemporary needs of our globalized society.

The way in which bilingual programmes have expanded and developed in different regions responds to the needs of the communities that Montessori schools serve, with growing trends of English immersion emerging in International Montessori schools, as well as local government policies that impact what schools ought to deliver in terms of foreign

languages provision as is the case in countries like Germany, where elementary schools are required to teach a foreign language beginning at least in year three, with a few states starting earlier (Winnefeld 2012).

Despite the fact that second and additional language learning in Montessori is not new and there is a growing implementation of bilingual Montessori programmes, there are only a handful of studies into this aspect of the Montessori curriculum (Rosanova 1997; Wysmulek 2009; Winnefeld 2012; Jendza 2016; Consalvo, Tomazzoli 2019; Rosales-Chavarría 2021), a few Montessori publications (Campbell 1998; Rosanova 1998; Fafalios 2007; Berger, Eßwein 2016), some Montessori-based experiences reported in TESOL publications (Berger 2019a, b; Winter 2020), other self-published books (Berger 2019c; Bronsil 2020) and, recently, the compilation of Community Conversations through the Erasmus funded Bilingual Montessori project, hosted by Montessori Institute Prague, which shares practical knowledge and experiences from seasoned Montessori language practitioners, guides, and administrators on the topic in an attempt to provide some form of guidance; this will soon be accompanied by the Bilingual Montessori Field Guide (currently in progress).

Bilingual education: weak and strong programmes

Bilingual education refers both to education for bilingual children, present in a classroom where bilingualism is not fostered in the curriculum, as well as education that fosters the use and promotion of two languages. Baker (2001) distinguishes ten types of bilingual education programmes, which he classifies as "weak," in which bilingualism is not fostered by the school, although it involves the minority language bilingual children's assimilation of the majority language through schooling and "strong" for which the use of the term bilingual education considers bilingualism as an intended outcome.

In Montessori schools expressions of weak and strong bilingual education can be found. Following Baker's (2001) taxonomy, weak forms of bilingual education use Submersion and Transitional approaches for which the minority language child will eventually become proficient in a monolingual context, either with assistance or sufficient exposure and involvement in strong forms of bilingual education in terms of Immersion and two-way immersion programmes. Immersion bilingual programmes use the target language as the language of instruction, as happens in many English immersion International Montessori schools, while less opt for a two-way immersion in which both languages have the same status and result in biliteracy.

Rosales-Chavarría (2021) gives an account of different language learning implementation models that can be found in Montessori schools across the globe (Table 1).

Table 1. Language learning implementation models by Rosales-Chavarría

Model	Main characteristics
Dual teacher language	One language per adult, so the child associates each language with one person
Times for L1 and L2	Allocation of times and/or routines for each language
Immersion	Instruction takes place in the target language, which is usually not the dominant language of the community
Target language classroom	Children come to a language classroom in set groups and/or allocated times or freely as they please
L2 corner	Set within the classroom either with specific materials and shelving or using the classroom as it is
L2 lessons	Designated or flexible times for either small or whole group times in the classroom or elsewhere
Blended	Involves the use of technology for the provision and or practice of the target language

L1 – first language used for instruction; L2 – second language. For some students their first language might be a home language, in which case the language of instruction at schools constitutes their L2 and the additional language can in turn be a third language

Source: Rosales-Chavarría (2021).

These models correlate to Baker's (2001) typology of "strong" bilingual programmes as they have the aim to teach a language, but also, they share the limitations of any typology owing to being dynamic; they observe numerous variations within each model, not addressing the classroom process and failing to explain the success or failure or the relative effectiveness of bilingual education. However, they provide a general landscape of what are presumably the most common models adopted by Montessori schools.

Dual, Times for L1, L2+and Immersion models, correspond to Baker's (2001) Immersion programmes where bilingualism is aimed at "prestigious" majority languages and parents choose to send their children to those schools where teachers are competent bilinguals, and children will eventually learn the other language, if they do not know it already, similarly to the way their first language was acquired. However, they do not necessarily aim for a Dual language (or two-way) bilingual education which results in producing bilingual, biliterate, and bicultural children in both languages, which would require both languages having the same status.

Target language classroom, L2 Corner, L2 Lessons and Blended models, tend to be sheltered strategies that will hardly result in bilingual education outcomes on their own,

unless sustained in time and with other factors intervening. Nevertheless, they can also be used as transitional phases for Submersion and Transitional forms for bilingualism or provide a preamble for Immersion programmes, or simply stand alone as the way a school provides exposure to a second language.

Methods

This study is an action research project that was intended to further develop the second language programme of a Montessori school in Scotland. Over a two-and-a-half year period, this author came in as a practitioner-researcher, both as a Spanish language specialist and coordinator of the language learning programme of the whole school and across levels. The research used the (re)planning, acting and observing, fact-finding, and evaluating cycle that is appropriate for this kind of scientific enquiry.

An initial cycle was carried out in the first semester to become acquainted with the school, the students in the Children's House and Elementary classes, and the teachers and other members of staff. After this period, a decision was made for the following school year to focus on developing the Children's House second language programme where this author was the Spanish language specialist and assisting the work of the Erasmus intern in the Elementary (6–12) classroom and later supporting a Spanish-English language exchange with a Spanish school for the Elementary level and a Dual model for Infants Community for the last term of the school year. The following year, the work was expanded to the Infants Community and the Teens class, with the result that teachers in these two groups implemented additional language in these levels, whilst the author continued with the implementation in the Children's House classes, and a new Spanish intern took over the Elementary class with the support of the author. Finally, a saturation of data was reached to determine what was possible with the resources available and what was needed for the Language Learning programme to move forward. However, the school's priorities changed and the circumstances following the COVID pandemic affected the certainty needed for the decision-making process at leadership level. The author's personal circumstances were also affected to carry on the work in situ. In each of the stages different strategies were used to adapt to the changing needs and the circumstances that arose. The Results section expands on this.

Results

A variety of experiences for additional language input in the target language were explored across the different levels, not only within the classroom setting. Several initiatives were trialled to integrate Spanish into the general learning experience of the children in the school. The main aims and focus of the language learning programme were identified for

each level of schooling, considering the developmental characteristics of each plane and the resources of each class.

The results are presented in chronological order and reflect distinctive phases throughout the implementation process. Table 2 summarises the time periods, this author's role, the implementation strategies and focus, and the outcomes of each phase.

Table 2. Implementation phases of the Language Learning Programme across levels

Phase	Role and aims	Implementation strategies	Focus and outcomes
1. Jan–Jun 2019	General exploration	Spanish Breakfast Club (CH & E) Spanish Circle Time (CH) Spanish Morning (E)	Past experiences recovery (2015–2018) Scottish 1+2 Approach
2. Aug 2019–Jun 2020*	CH Spanish specialist & Language Learning Programme development	Spanish Morning (CH): SPA Corner, cooking, high frequency vocabulary Spanish Club (E) No SPA specialist Spanish assistant (IC)	SPA focus for each level Home languages survey LLP Scope and Assessment Criteria Data saturation
3. Aug 2020–Jun 2021		Spanish team across levels (CH, E, T) and Multilingual Circle time (IC) Spanish Events Joint Projects (Spa-Music)	
4. Aug 2021–Jun 2022	Consultant	Spanish intern (E) Multilingual Circle time (IC)	Mentoring and external support

* This phase included face-to-face and online learning periods; CH – Children's House classroom (3–6 years); E – Elementary classroom (6–12 years); IC – Infants Community classroom; T – Teens programme

Source: own study.

Following the presentation of the research findings of a prior three-year action study into the implementation of an L2 Corner for Children's House in Mexico, an opportunity arose to continue the work that the Scottish Montessori school had started with the Spanish language a few years earlier. This happened in the context of the Scottish Language Learning policy 1+2 Approach (Scottish Government 2012) aimed at ensuring that all children had the opportunity to learn a modern language from Primary 1 (5 years of age) onwards and an additional one from P5 (9 years of age) onwards by August 2021.

Phase 1

An initial cycle was carried out in the first semester to become acquainted with the school, the students and teachers in the different classes, and with other members of staff. The implementation strategies included a Spanish Breakfast Club for Children's House and

Elementary students hosted two days a week, a Spanish Circle time for the Children's House classes which met once a week and a Spanish morning for the Elementary class.

The Spanish Breakfast Club was offered as an additional activity, and families could sign up for it prior to the start of the school's regular activities. It was set up to provide a Spanish immersion experience by sharing breakfast together. It proved to be a highly contextualized activity around the sharing of food and meals that provided plenty of opportunities to practise the use of the Spanish language and the associated vocabulary with which all children, and even the school's cook, became familiar. Having Children's House and Elementary students also helped to give relevance to the Spanish language across levels. The children that attended developed a greater interest in learning Spanish and showed an increased confidence compared to students exposed only to the Spanish activities available in their class.

The Spanish Circle time was intended for all classes to provide L2 language input through songs, reading stories, and activities and games with the whole group. However, it could be effectively implemented only in the Children's House classrooms mostly owing to time scheduling difficulties moving between classes in the two mornings when the Spanish specialist was at school, and providing support to cover for staff absences. Some of the activities and materials, like the songs and memory cards, were recovered from the previous language specialist, so allowing for some continuity.

The Spanish morning with Elementary students was organized in small groups using some of the Spanish corner materials available in the classroom. Some of these resources had been left by previous Spanish specialists. An inventory was made and a storage space was secured for them. The initial focus was to assess students' prior knowledge of the Spanish language and organize a curriculum for this level that could be turned into presentations uploaded to Transparent Classroom to keep a record of the students' progress.

This initial phase gave an opportunity to enquire about the experiences in previous years, gather information, review policy documents, get a feel of the level of priority Spanish had for each class team and the leadership team, as well as the receptiveness children had for it. This made possible identification of the best course of action with the available resources in the current circumstances of the school.

After this period, a decision was made for the following school year for this author to focus on developing the Children's House Spanish programme and assisting the work the Erasmus intern did with Spanish with the Elementary class.

Phase 2

According to the 1+2 Approach, the current Scottish Language Learning policy at the time, it was the Primary teachers themselves who were responsible for implementing the teaching of modern languages to young children by introducing, practising, and embedding the modern languages in the usual children's learning experiences. Having a language specialist in the school released teachers from taking a more active role in delivering the modern language provision. However, with that policy in mind, and being the Spanish specialist, my

time was restricted to one morning per week in each Children's House classroom and one hour per week for the Spanish club in the Elementary class. There was, therefore, a clear intention to devise strategies that could be taken on throughout the week by the class staff and through children's independent work during the work cycle.

Cooking in Spanish with small groups was another activity sometimes done during the Spanish morning and at circle time it was shared with the rest of the group, whereas SLA Spanish supplementary materials, such as memory games, songs, and books were used during the Spanish morning and made available for children to work with them the rest of the week. High frequency words and phrases linked to routines such as "lunch time," "getting ready for paddock" and grace and courtesy were identified with the intention of using them on a regular basis in a highly contextualized situation to provide children with more opportunities of exposure to the target language.

For the Elementary classroom, the school had previously relied on Spanish Erasmus interns who came to do their teaching practices for a period of time during the school year taking on a Spanish specialist role. However, that had to be reconciled with their own interests and purposes and the class team needs. Most recently, a German intern with some knowledge of Spanish came, but this person had interests in other aspects of the work done in Elementary. This led to the work in Spanish being limited. When the intern left, this author became involved in a Spanish club with the Elementary class offering support to run a language exchange with a Spanish school for the rest of the school year with the children who chose to take part.

Throughout the lockdown time online home learning was made available to families. Spanish lessons were offered one hour a week to Children's House and Elementary. Support materials such as recorded videos of the songs and activities children could access to practise their Spanish were designed and produced.

During the Spring term an opportunity arose for a Spanish day in the Infants Community classroom and it was agreed with the lead teacher to follow a Dual (OPOL) model where the researcher in an assistant role would speak Spanish in the classroom, while the lead teacher would continue to use English. It helped that the lead teacher had a personal interest and basic knowledge of the Spanish language.

This phase made it clear that there had to be a cohesive whole school approach, embraced by all the teams, for the Spanish programme to consolidate in a sustained way. This would look different at each level. The regularity of the target language needed to be provided through a constant array of opportunities to use the Spanish language in a meaningful way which could work with what each class was already doing and the resources they had.

Given the linguistic diversity that characterized the school community, a survey of home languages was carried out that resulted in 20 different languages spoken among the families and members of staff with 53% of the children having exposure to at least an additional language at home. This finding was communicated to families in an attempt to raise the awareness of the school community's linguistic diversity and support home languages.

The following year the work was expanded to the Infants Community and the Teens class, which meant that the Infants Community and the Teens class teachers implemented additional language at those levels, whilst the author continued with the implementation in the Children's House classes and a new Spanish intern took over Spanish language facilitation in the Elementary class.

Phase 3

During this phase a Spanish team was formed with a Spanish specialist in Children's House, the intern supporting the work in Elementary, as well as a member of staff in Teens willing to implement some additional language provision in these levels. An induction course that included an Introduction to Montessori for people with no Montessori background and an Observation workshop were designed to have a common ground and provide tools for action research. This was followed up by study meetings that took place outside working hours.

The main objectives and focus of the language learning programme were discussed and identified for each level bearing in mind the different stages of development.

Table 3. Language Learning Programme Objectives and Focus across levels

Level class	Developmental characteristics that support SLA	Main objective of the language programme	Focus of the language programme
Infants Community	Children are open to any language. They are acquiring their L1 and can become simultaneous bilinguals	Sensitize children to different languages and encourage parents to speak their own languages at home (if any)	Regular exposure to languages, particularly Spanish and those that children know from home through songs and teachers own L1
Children's House	Children have acquired their L1, but the sensitive period of language is still active and their absorbent mind facilitates the learning of other languages available in their environment	Expose children to the target language as much as possible. Make Spanish available in their usual learning environment and foster interest in languages	Develop oral and listening skills in the target language through songs, books, and general interaction in Spanish. Use of SLA supplementary materials
Elementary	Children's reasoning mind and knowledge of L1 can facilitate transferability of knowledge to other languages	Consolidate knowledge of L2 in all areas (listening, speaking, reading and writing) and introduce a further language	Develop reading and writing skills in L2 and foster autonomous learning. Exchange experiences such as a pen-pal for upper elementary

Table 3. cont.

Teens	Young people's interests in the wider world and need to relate to others as they develop a social embryo	Use language to communicate in the wider world. See and experience other cultures	Purpose oriented learning experiences that show the benefits of language learning. Exchange experiences that may involve traveling for immersion purposes. Language lab, use of apps

Source: own study.

Termly meetings were scheduled with each level team to discuss and evaluate the degree of implementation of the strategies agreed upon, as well as to discuss further courses of action periodically. An initial meeting with each class team was scheduled in preparation for the school year. It was agreed that the language programme would be an overarching element of the school curricula that would continue to be consolidated with the aid of a language specialist at each level and the collaboration of each class team. This author, in her role of language coordinator, would support both the Spanish team and the work done in each level, as well as oversee the process as a whole.

It was acknowledged that the Spanish programme was at different levels of implementation in each level. The characteristics, needs, and possibilities of each class and class team varied, as did the way in which the target language was approached.

Guiding questions were used for the initial team meetings:
– What is relevant for this level (age group)?
– What can the environment provide for this child in relation to Spanish?
– How can the adult (teachers, specialist, parents) support this aspect (in school and at home)?
– What would you need or want from the programme coordinator to support the Spanish programme in your class?
– What is the starting point? i.e. Where and how will you start?
– What do you expect from this school year?
– What else can we explore?

Infants Community chose to expose children to other languages through songs and books. Spanish and the home languages of the teachers and children in the class would be present. They were able to implement an International Circle Time once a week. A couple of bilingual books were used and they looked into making one word books bilingual using stick-on labels with the word in Spanish and relevant phonetics.

Children's House decided to continue with the Spanish corner and found suitable times and routines to integrate and recall Spanish words and phrases throughout the week. During the morning, routine greeting in Spanish was done on the day the specialist came and teachers were encouraged to do it at least one other day of the week. The songs in Spanish were sung

on paddock with both CH classes together. Material for listening to songs in Spanish using a CD-player, headphones, and song posters was trialled for the Spanish corner. This was then changed for a YOTO player. It was agreed to expand the language specialist's work to Grace and courtesy lessons in Spanish. Seasonal related events such as Piñata making and breaking in December, which had been done in previous years, were done again, and a Day of the Dead celebration was added to the Spanish special events calendar for November.

Elementary relied on the Spanish intern to deliver lessons using the resources available in the Spanish corner from previous years, and create new materials. Specially for this class, the support given to the language specialist was crucial as interns usually first need to become acquainted with the Montessori method and then need to figure out how to deliver Spanish within this pedagogy without much guidance. It was helpful that information about what had been done in previous years was passed on and that the most recent intern was able to stay for a longer period. The language specialist in Elementary had a dual role serving also as a classroom assistant.

Teens introduced Spanish as a second language one hour a week. No students at this level had any prior knowledge of the Spanish language, but it was well received by the students. It was oral and game oriented. A language exchange project is to be considered for the future. Spanish time was not always secured and resources for independent learning were found such as series the students could watch, as well as online resources.

The survey of home languages was carried out again this year, including the Infants community and Teens classes, with the result that 24 different languages are now represented in the school community. Inviting families to contribute their home languages was done through simple gestures like writing Christmas messages to go into the Children's House piñata.

New events such as setting up a Day of the Dead altar with Children's House classes and a Spanish Easter Treasure Hunt with Children's House and Teens classes were trialled, as well as a joint project between Spanish and Music for the Elementary class. For this, songs in Spanish were recorded and posters with chords printed out for the children in Elementary, who wanted to play songs in Spanish that were familiar to some of them from their time in Children's House. It also created new opportunities across levels and the possibility to expand this initiative to other languages, especially those present in the school.

The work during this period showed that one day of Spanish exposure in each of the Children's House classrooms was not enough for children to pick up the target language if other strategies could not be sustained to make it available as part of the usual learning environment, which required either more involvement from the class teachers or assistants, or meant having a language specialist available for longer. Similarly, the constant rotation of interns that could deliver the Spanish language in Elementary without a solid programme and with limited materials and resources or time to prepare them, made it difficult to monitor the progress of students and the consolidation of a methodology that could continue to be implemented by someone new. The additional uncertainty of how Brexit would affect the intake of Spanish Erasmus interns and other Spanish speaking members of staff also affected the possibility of having some continuity.

Phase 4

Other school priorities superseded the Spanish programme and although its development came to a halt, the researcher was able to mentor and provide external support to the new Spanish intern that came to the Elementary class the following school year. An initial face-to-face induction and monthly online meetings were organized. The Spanish resources that had been created remained in the school, but were not necessarily used. This showed the fragility of an implementation process when it has not still been consolidated and the continuity is lost.

Discussion

The implementation of language learning programmes in Montessori schools has meant moving away from what initial Montessori teacher training provides to guide this process, as well as bringing knowledge from the specific subject area of bilingual education into the Montessori practice. This getting out of the Montessori box and welcoming supplementary SLA materials and other strategies and resources to support the implementation of bilingual programmes has created opportunities to innovate and adapt while still trying to remain faithful to the Montessori pedagogy.

Moving from limited-scope approaches for language learning into wide-scope approaches requires a joint effort. It requires commitment from the school to invest time and resources to develop a bespoke model for language learning that adapts to the school's circumstance and priorities, which tend to be variable. It also requires a refined observant attitude and a flexible methodological disposition to analyse one's own practice in the light of the Montessori pedagogical principles for each plane of development and for language learning theories that are consistently intertwined, to become coherently connected over time.

It requires from the teachers, first, to welcome the idea of a bilingual or multilingual environment in their classroom and then to turn that desire into concrete experiences embedded in their children's usual learning environment in ways they feel comfortable with and confident enough to carry out and expand. This process takes time to consolidate into the school culture and requires stability. Having clear roles, staff retention that can allow for continuity and development, and even strong class teams consolidation, are all part of the equation.

Having a language specialist team across levels proved effective, as it started building a community of practice. However, it relied on people's own time outside school hours and the need to discuss different aspects of teachers' practices and increase the knowledge of the subject area, while the design, trialling and refinement of materials was greater than the time allowed.

Conclusion

The research shows that different ways to integrate additional languages into the Montessori learning environment are possible. Some responses use limited-scope strategies, which provide a familiarization with the target language and some regular input, whereas others can become wide-scope strategies and enhance the relevance and opportunities for the target language to become consistently present in the learning experience of students.

Also, it is important to sustain some consistency in the implementation in the frequency, chosen modality, and the practitioners who are involved. This allows those involved to build on previous experience and develop ways to consolidate and forward a bespoke model that responds to the characteristics, needs, and priorities of the school.

Language Learning programmes in Montessori settings need to be considered from the perspective of the child, the teachers, the parents, and the school. Priorities need to be aligned, resources allocated, and efforts directed to the aims of the implementation process. External factors such as education policies and parents' expectations of second language provision may influence the decision making of the leadership teams.

Limitations of the research

This implementation process of the study was carried out without additional support. The resources were limited and relied on the practitioners' motivation and commitment to document the process. They lack a detailed description and data about the approach to teaching and the learning outcomes achieved for which more research is needed.

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Bringing the words out of the Montessori box: Towards a Montessori system for enhancing language development from birth to six years

Summary

Anecdotal evidence from early years practitioners in the UK reflects a perception of gradual, but persistent, decline in the extent of native English-speaking children's vocabulary and oral communication skills when they start nursery aged 2–3 years. This paper will examine the scope and reasons for the perceived decline as background, before surveying and evaluating national programmes implemented in the UK to remedy it. Then, building on how the Montessori approach supports and enhances children's language development during the early years, a proposal for a Montessori-based remedial system to develop and extend the range of individual children's vocabulary, grammatical forms, and syntactic structures, in the order in which native speakers of English acquire them, will be outlined.

Keywords: early speech enhancement scheme, Montessori approach, language development, early education

Słowa kluczowe: program wczesnego wsparcia rozwoju mowy, podejście Montessori, rozwój językowy, wczesna edukacja

Introduction

Evidence from early years practitioners in the UK reflects a gradual, but persistent, decline in the extent of native English-speaking children's vocabulary and oral communication skills when they start nursery aged 2–3 years. This paper examines the scope and reasons for the perceived decline as background, before briefly surveying programmes implemented in the UK to mitigate it. Then, building on how the Montessori approach supports and enhances children's language development during the early years, a proposal for a Montessori-based enhancement scheme to develop and extend the range of individual children's vocabulary, pronunciation, grammatical forms, and syntactic structures, in the order native speakers of English acquire them, is outlined. Since philology underpinned Montessori's own presentation of language, and because Montessori practitioners continue to be trained in this discipline rather than linguistics, a philological approach to language acquisition has been adopted for this project.

Robust early language foundations are essential for, and predictors of, children's subsequent effective learning and education, Finnegan et al. (2015), but this study concentrates on just one of these key foundations. While recognizing social context, eye contact, body language, and gesture are crucial for effective communication, the focus here is specifically on children's "productive", or "expressive" language, their speech, rather than on communication more generally. Note should be taken of the point made by O'Grady and Cho (2011) that acquiring a grammar is essential for developing linguistic skills.

Parameters of the study

The objective is to devise a scheme to help Montessori-trained practitioners working in Montessori settings in the UK to support the speech development of individual children with observable speech delay from the time they enter their setting. The work is based on Montessori's theories about children's language acquisition, many of which are now confirmed by neuro-scientific research, and on subsequent, more recent research into first language acquisition. The parameters of the study are lexical, phonetic, grammatical, and syntactic, and organized to follow Montessori's (2007) timeline for language development.

Language acquisition is a large field of investigation, but relatively few researchers have attempted to develop a systematic approach to studying individual differences among early years children (Bates et al. 1988). An individualized, holistic approach based on observation and on meeting every child at the point of development he or she has reached is a key Montessori principle (Mavrič 2020). This means that the proposed scheme needs to be individualized to meet the developmental stage and the unique interests of each child with whom it might be used.

Initially, as an active research project, the focus is on children whose first home language is English. This is not to say that activities planned and implemented will not be of benefit to children for whom English is a second or additional language, nor that these should not be offered to them, but in terms of evaluating the effectiveness of the project, limiting the scope in this way will reduce the number of variables affecting the overall picture.

The early years situation in the UK

In the UK, limited devolution to the four "nations," England, Scotland, Northern Ireland, and Wales, has resulted in a fractured and complex early years landscape. However, children generally enter early years settings between the ages of 2 and 3, supported by some level of government funding disbursed to settings by local authorities. Legally they can remain in their early years setting, with funding, until they are of compulsory school age, the start of the term after their fifth birthday. In practice however parents are pressured by mainstream schools to have their children start in the reception class if they have turned 4 by the beginning

of the academic year (1 September). This means that some children may only be in nursery education for one year before starting formal schooling.

The term "setting" covers (state-) maintained nursery schools, child-minders working from domestic premises, day nurseries, pre-school playgroups, Montessori children's houses and infant communities, home-educating co-operatives, and nursery schools. Providers receiving funding for children must follow a prescribed early years curriculum, in England the Early Years Foundation Stage (EYFS) (Department of Education 2023) and in Scotland the Curriculum for Excellence (CfE) (Education Scotland 2019). Montessori practitioners find it advantageous to be able to articulate clearly the correspondences between the Montessori early years curriculum and the national curriculum in force where they are working.

Clinically diagnosed language and communication delay

What is proposed is not a replacement for clinical diagnosis of significant developmental delay, which must be referred to relevant professionals and speech and language services. Often, though, these services are stretched, with long waiting lists for appointments and constraints on the support they can offer. So, given the knowledge and understanding of language development that fully trained Montessori practitioners bring to their work with the children, and their routine observations of all aspects of the children's development, they are well placed to plan and implement activities geared specifically to match an individual child's observed level of language development, and to support progression, rather than just waiting for intervention from dedicated professionals. In supporting children's language development, time is of the essence (Hart, Risley 1995).

The perceived decline in children's language development in the UK

A short questionnaire sent to a limited sample of Montessori practitioners with around 25 years' experience in the field largely confirmed anecdotal evidence that the language skills of children starting in their settings at around age 2 are lower now than in previous years (Prochazka 2024).

The quality and extent of children's language acquisition and the potential effects of language delay on their subsequent learning and prospects for educational attainment had already been the subject of debate before the pandemic (Scottish Government 2019), but documentation of the effects of COVID lockdown restrictions on the cohort of early years children who entered formal school as the pandemic ended, having missed out on nursery education, has intensified concerns about language delay (Weinstein 2021).

There are two caveats to bear in mind when considering possible reasons for the identified decline in language acquisition and communication skills. The first is that although socio-economic factors, such as household income and level of educational attainment, and

situations, such as family break-up, substance abuse, or domestic violence, all have significant implications for children's holistic development (Law et al. 2017), they are beyond the scope of this study, which limits itself to consideration of factors and situations which are deemed specifically to impact the development of children's speech in the early years.

The second caveat, when looking back over 25 years or so, is that the baseline for more recent research may itself reflect the decline it is seeking to characterize. This, or possibly the relative affluence of the demographic of some Montessori settings, may have resulted in higher than expected assessments of current language skills in some of the responses to the author's questionnaire.

Earlier warnings

A quarter of a century ago warnings were already being sounded about the effects of digital technology on children's acquisition and use of language.

Too much screen time

Healy (1998) was an early exponent of the potentially detrimental effects on small children of too much screen time, noting that solitary computer use limits a child's verbalization and stressing that children do not develop their spoken language as effectively from watching it spoken on screen as in face-to-face conversation with a real person. Then the concern was TV and computer screens; now phones, tablets, and other mobile devices are a part of many children's normal, everyday life.

Shortened attention

Consequent upon more time spent in front of the TV or computer screen, compounded by the nature of what is being viewed - quickly changing, brightly coloured images set in noisy soundscapes of impactful music, shouting, strident on-screen interjections, bangs, crashes, and thuds – children's attention spans have noticeably shortened. A contemporary contributing factor is parents having recourse to phones and tablets as passive entertainment to keep them quiet and occupied. Use of mobile media devices has been shown to be associated with expressive language delay in 18-month-old children (van den Heuvel et al. 2019).

Background noise

The aural environment of many modern children is full of background "white noise" surround-sound, competing with or drowning out the human talk they need to hear to perfect their own speech. Time spent with the TV on is associated with lower language levels at 24 months (Roulstone et al. 2010). That today's adult social gatherings seem to

have become much louder and less inhibited than a quarter of a century ago may also be a contributory factor.

Lack of sleep

The effect of the blue light from screens viewed before going to sleep for the night on a person's circadian rhythms is known, but research by Cheung et al. (2017) into the impact of touchscreen use by small children has correlated additional hours of touchscreen use to measurable loss of sleep.

The impact of the COVID pandemic

Language deprivation

The two total lockdowns in the UK had a major impact on the language development of pre-school children because of the social distancing they experienced, just as they were entering their sensitive period for social development (Phillips 2022). By being physically prevented from having social contact with extended family members, the children were deprived of exposure to the richness of different accents, dialects, intonations, and language registers.

During lockdown children were also deprived of total immersion in a wider societal soundscape, such as that experienced, for example, when going to the supermarket, on the bus, or to the hairdresser. In the normal course of child upbringing in western society, such opportunities for small children to be immersed in the adult "speechscape" of their time and place are becoming ever more rare, but Montessori (2012) was convinced of the benefits of the parent taking the baby everywhere.

Also important to remember is that during lockdown children were unable to mix with children other than their own siblings, so losing out on all the peer-to-peer language practice and learning that takes place in any group of children, regardless of their ages and stages of development.

Effects on the children's immediate environment

The lockdowns affected children's learning environments in two significant ways. The first was to cause a shrinkage, rather than a gradual expansion of the opportunities for physical and sensorial exploration of all aspects of their immediate locality, beyond their home and garden. This meant that the motivations to talk about what they were seeing and experiencing, to build their vocabulary and develop their ability to communicate new thoughts and ideas were weaker than they would have been if they were interacting normally in an ever-extending environment (Routley 2017).

The second effect presents as a dichotomy. For some children, being at home with their parents 24/7 was an enriching experience both for them, and for their parents too. But for other families it proved a very challenging situation, where parents were working from home, without the time, or possibly the knowledge of how important it is (Hart, Risley 1995) to talk as much as possible directly to their children.

Modern changes affecting children's language development

Changes in parenting styles

In addition to the factors identified above, consideration needs to be given to how parenting generally has changed over the last quarter of a century and how this too affects the development of children's speech and their ability to communicate.

In ways that could not have been conceived of 25 years ago, external, digital forces are at play in UK parenting. Parents are influenced by, and measure their skills against, the parenting styles adopted by celebrity and popular culture and disseminated on social media and influencers' websites, rather than against modelled behaviour of earlier generations.

One manifestation of this is the idealization of childhood as being completely child--centred, making many parents reluctant to say "no" or deny children what they want. This makes boundaries unclear and inconsistent, often putting the child, rather than the parents, in charge. There are several consequences to a child's upbringing being determined by his or her wants rather than needs. One is that parents may strive to keep children constantly entertained, with a full timetable of activities leaving them little or no down-time to process what they have learned during the day. Unstructured time spent alone is important for a child to become independent, to learn to concentrate and to begin to self-regulate (Healy1998). A full social calendar also means that a child may lack freedom independently to discover how to make and be friends.

If small children learn to expect that they can do anything they like, situations will often arise where they are left until they overstep the mark before their behaviour or activity is checked, rather than having been positively negotiated in advance in ways that are developmentally appropriate. Language for behaviour management is used, but either it involves lengthy explanations that are beyond the child's level of verbal understanding or ability to comply, because parents seek to justify their instructions to the child and gain the child's compliance, or else the parents resort to short dictatorial prohibitions, characterized by "negative feedback tone" (Hart, Risley 1995: 151). Neither response is a positive support to language development.

Parents' own screen time has increased considerably, and digital devices are a key feature of almost every adult's life. Ready recourse to these devices when parents are with small children impacts the amount of face-to-face verbal interaction they have with them. Likewise, the desocialization of children's meals, where children eat separately or alone,

rather than as part of the family around the table, undermines their language development because they are deprived of hearing adults and older siblings talking and exchanging news. They may not even be expected to sit at a table to eat their meal, which is detrimental to digestion, and the trend of asking children what they would like to eat may have the effect of restricting their diet, because children given choice in the supermarket choose what they know, with their diet becoming increasingly limited, often leading to poor health and obesity.

Less movement

Small children growing up in the UK are less physically active than in previous generations. Their lives are time-constrained, so they are driven or pushed to their destinations rather than being given the time to walk. And walking is not just about the physical exercise, but about the connection with the wider environment, seeing and hearing things to talk about, and having conversations on the way. A frequent sight on UK streets is a child in a pushchair, facing forwards, well supplied with drink and treats, the parent pushing the child along with one hand and controlling his or her phone with the other, unaware of, or choosing to ignore the child's attempts to communicate.

Commercialization of play

One final societal change which is having a significant impact on children's overall development, but particularly on their language development, is the commercialization of play. In addition to digital entertainment, leading quickly on to gaming, the market is flooded with manufactured toys that are very specific in their purpose, for example, plastic food items to use with a fanciful plastic kitchen, or "programmable" toys that the child can get to move or make noises by pushing buttons. Another of Healy's (1998) early warnings was of the effects of over-stimulation on children's play. Where the purpose and function of the toy is very specific there is less scope for children being prompted to use their imaginations to create their own narratives and play scripts, and there is strong and worrying evidence that children's creative imagination is being curtailed and diminished (Kim 2011).

The report by Law et al. (2017) clearly lays out the causal relationship between strong and effective early language learning and significantly better life chances, so the implications for children with observable language delay owing to the issues identified above are serious, particularly when support services are overstretched.

Programmes implemented in the UK to address both general and COVID-caused decline

Pre-COVID

Already prior to the COVID pandemic various initiatives had been launched in the UK to raise children's educational attainment in areas of social deprivation, for example the Sure Start Initiative in England, directed at the early years (Bate, Foster 2017), or the adoption of GIRFEC (Getting it Right for Every Child) in 2006 in Scotland (Scottish Government 2022). In 2009 Bookstart (2024) had begun outreach work to deliver books to all households with small children in England, Wales, and Northern Ireland, and similarly Bookbug (2024) in Scotland, while data from fact-finding surveys and longitudinal studies informing policy underpinned new initiatives such as Every Child a Talker (EcaT) in England (Department for Children, Families and Schools 2009) and PlayTalkRead in Scotland, also launched in 2009 (Scottish Government 2016).

Post-COVID

Examples of recent government-funded interventions to address the post-COVID concerns about children's language development are Nuffield Early Language Intervention (NELI) (Nuffield Education Foundation 2021), Talking Time (Dockrell et al. 2023), and Early Talk Boost (ICAN 2015).

   These schemes share a holistic, communication-focused approach, where teachers who have been trained as facilitators run short group sessions, typically of about 15 minutes twice or three times a week, following a set plan and actively involving parents and carers, with positive results to date. NELI may be delivered to individual children.

How an authentic Montessori approach resonates with these national initiatives

There are no barriers to these schemes being implemented in Montessori settings, and indeed they have been welcomed, but as they do not fit seamlessly into the work cycle of an authentic Montessori learning environment, since their focus is on developing group-based communication skills rather than individual language expression skills, there is scope for a Montessori intervention scheme also.

   At this juncture it is worth briefly itemizing and reflecting on certain key elements, integral to the set-up and organization of authentic Montessori learning environments both indoors and out, that together form a network of continuous holistic support for children's language development. While some of these elements might be individually identified in non-Montessori settings, to find a synchronized network with all of them as its components would be rare.

In the present context, the most important of these elements is the fact that individual-ized learning is the norm in Montessori early years settings and each child's development is supported holistically, with regular and detailed observations as an indispensable tool. Generally though, Montessori early years environments are noticeably quieter than those of other settings, so children can hear what is being said much more clearly, and most of the time the children are able and encouraged to talk to each other whenever they like. Dockrell et al. (2023) noted that it was sometimes difficult for schools implementing Talking Time to find a quiet location.

Authentic Montessori provision focuses strongly on language development with consistent emphasis on strengthening listening skills, and very early introduction of oral phonic and grammar games and activities prepares the children for later work with letters and sounds. Unlike Talking Time, where vocabulary was embedded and staff were not made specifically aware of the target words (Dockrell et al. 2023), in Montessori classrooms new vocabulary is deliberately taught, usually three words at a time, by a "three-period lesson", where the practitioner isolates each word in succession by placing either an object or a picture repre-senting the word in front of the child to look at and handle, thereby significantly reducing the child's referent selection problem (Samuelson, McMurray 2017). The practitioner clearly enunciates the words several times (period 1); then the items are laid out together and the child is invited to indicate the one named by the practitioner. This identification process is repeated quite a number of times, with challenges presented by the practitioner varying the order, speed and tone of the prompts or changing the position of the items on the table (period 2); and finally, with each item isolated again, the child is invited to name it (period 3). This process is multisensory and carefully structured, with reinforcement in the second period of the child's passive knowledge of the word, and testing his or her ability actively to express the word in the third period.

In a Montessori setting children acquire vocabulary describing size and dimension from Montessori three-period lessons given to teach dimensional adjectives. Three sets of solid objects, each containing 10 identical pieces differing only in size, are used to teach visual discrimination of dimension by grading the items in each set, at intervals of several weeks or months, in order of both increasing and decreasing size. Typically, variation in three dimensions (the cubes of the pink tower) is presented first, followed by the square-based rectangular prisms of the broad (or brown) stair, which vary in two dimensions, height and width, followed by the long (or red) rods, which vary only in length. The vocabulary taught with each set respectively, but only after the child has worked on several occasions with that set, is "big" and "small," "wide" and "narrow," and "long" and "short," with the first and the tenth piece of each set used as the concrete models for the three-period lesson. Here the three-period lesson teaches two rather than three words. Experience with these materials confirms that this order of presentation aligns with the children's ability physically to discriminate between the dimensions, so it would be interesting to discover whether children were already using the language in the order given by O'Grady and Cho (2011) for their steps 2 and 3, before having mastered the physical materials.

Movement is deliberately designed to be integral to as many language-learning opportunities as possible so neural connections are formed and strengthened. This is a particularly important aspect of the little dramatizations, referred to as "exercises of grace and courtesy" by Montessori practitioners, which model and practise the conventions of speech and actions needed in everyday social situations.

As in other early years settings, in Montessori settings, movement features in action songs and rhymes, helping to embed and reinforce new vocabulary. Poetry, as distinct from rhyme, should be actively encouraged because of the richness of the cadence, rhythm, and intonation of language that it offers children.

Finally, as in any early years setting, reading stories features prominently, but rather than whole-group activities at set times, in Montessori settings these are mostly impromptu, involving one or two children or a very small, spontaneously formed group, allowing for open-ended comment, discussion, and appreciation of all aspects of the story. Sometimes stories are told, rather than read, and there is scope to develop the rich art of story-telling much more extensively among all early years practitioners.

Proposing a Montessori system of enhanced support for language development

Underpinning theoretical considerations

Other aspects of Montessori theory are particularly relevant to the planned project. Montessori training is based on child development, and practitioners holding full Montessori diplomas are equipped with a comprehensive theoretical knowledge of the timeline of language acquisition developed by Montessori (2017). The infant's progression from the articulation of sounds to syllables to words, and then on to grammatical inflection and syntactic organization of words into phrases, then sentences, is well understood by practitioners and is facilitated by the specially devised materials in the language curriculum area of Montessori settings. Similar orderly sequential development has been noted by O'Grady and Cho (2011) specifically in children's acquisition and use of bound morphemes and certain functional categories of speech, such as articles and auxiliary verbs.

The "explosion of writing" witnessed by Montessori (2017: 237) in children at around age 4 is significant. She interpreted this phenomenon as "something which arose from the formative energy of the children," an outward sign of the correlation between the inner sensibility or "sensitive period" for language, experienced by children from birth to around 6, and an unconscious need to develop their language however possible, driven by the ideas they wanted to express (Montessori 2012: 17).

Unlike today's children, those Montessori worked with must have had very little exposure to either printed materials or tools for writing, so the "explosion" of writing was more striking then than now. However, reflecting on how the physical movements involved in learning to write later parallel the progression of physical movements practised by babies as they learn to articulate the sounds of the language being spoken around them, led Montessori to see

a definite correlation between learning to write letters and development of oral language: "writing helps in teaching speech" (Montessori 2017: 271), so developing writing skills is an essential part of the proposed scheme.

Unlike other early years curricula the Montessori curriculum builds the acquisition of skills for writing in a gradual, systematic and progressive way, firstly strengthening children's fingers and hands in a variety of ways in preparation for holding their pencils correctly, then introducing the "insets for design", 10 square metal frames or stencils, each containing a different knobbed geometric inset, and as a set, presenting progressive challenges to the children, and supporting them to gain full pencil control before embarking on forming the letters of the alphabet, which they do first by feeling and recognizing the sandpaper letters and then by starting to write them (Montessori 2017).

What form should the proposed scheme take?

As individualized work is the norm in a Montessori classroom there should be no need for special sessions, just the usual Montessori one-to-one specifically planned lessons, giving no sign that a supported child is being singled out for special attention.

Repetition and reinforcement are key. Some children learn a new word instantly. Others may have to hear it up to 20 times before it becomes part of their word stock (Uchihara et al. 2019). This means the proposed scheme should include observational evidence on how quickly a child assimilates new vocabulary, so that enough prompts, reminders, and ideas are planned to effect an appropriate number of repetitions.

Appealing to the child's interests ensures greater engagement. New vocabulary presented to children should give them the tools to express their thoughts about what is important, exciting, and fascinating in their world. Practitioners need to make a determined effort to ensure new words learnt keep cropping up, in conversations, songs, stories, and rhymes so that they become permanently embedded in the child's lexicon.

The proposed starting point for working to support a child are three 30-minute naturalistic observations, focusing on the child's speech. The named practitioner with responsibility for carrying out the dedicated support for the child undertakes the observations, making both contemporaneous notes and a digital recording of the whole observation. These initial observations, and similar ones conducted later at set intervals, give a record of the time and length of each separate utterance or connected sequence of utterances, the social or occupational context, and a verbatim record of the sounds and words expressed by the child.

The data from the initial observations are then collated, written up, and analysed, forming a "Baseline Assessment" establishing the point the individual child's language development has reached at the date of observation and forming the basis of a unique profile of the child's language enhancement journey, which will continue to be recorded. Based on the collated data from each observation, targets will be set to be worked on with the child in each of the four main language areas and individualized work plans created, always

keeping in mind the need to engage the child's interests to give a meaningful context to the work being prepared, and to build on and extend from what the child already knows and is confident in expressing.

At regular intervals, possibly every two weeks, a review is carried out of how the targets set have been met, and what new ones will be set going forwards. After an agreed interval, possibly 6 weeks, the practitioner carries out another series of observations and again collates the data, noting the difference between the original points and the new points of attainment.

Evaluation

The scheme enables the child's progressive acquisition and mastery of various elements of spoken language with reference to the original baseline assessment at pre-determined points to be recorded and quantified. The recording supports planned re-visiting and extension of use. Focused enrichment of vocabulary related to the child's interests, and emphasis on grammar and syntax build a strong framework which supports extended comprehension and facilitates communication generally. A final report is compiled for a supported child upon leaving the setting.

Next steps

A small pilot study will be set up to enable development of training materials for the facilitators and to monitor how the scheme works, noting changes and adjustments needed before a general launch. Contact the author for more information and templates to use for baseline assessment and on-going recording of progress, guided observation, and individual planning.

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Aid to life – Montessori pedagogy in the service of autism spectrum children

Summary

This article explores the feasibility of implementing Montessori principles outside traditional Montessori environments, focusing on children with autism whose families cannot afford Montessori schooling. It examines whether Montessori education can effectively address the needs of autistic children in non-Montessori settings. The author, a Montessori educator, describes her efforts to adapt Montessori methods in diverse environments, including public kindergartens, schools, therapeutic centres, and extracurricular activities. The research refers to the growing prevalence of autism, as noted by the World Health Organization, and the necessity of inclusive educational approaches. The author presents practical examples of children's interactions with Montessori materials and innovative adaptations of Montessori philosophy to suit various settings. Special attention is given to activities inspired by Montessori's Great Stories, demonstrating their potential in engaging children from different backgrounds. The paper argues that Montessori education should extend beyond specialized institutions to benefit a broader range of children, particularly those on the autism spectrum. It highlights the importance of preserving the core tenets of Montessori pedagogy – individual, spontaneous activity, and holistic human development – while adapting to external conditions. The article provides valuable insights into integrating Montessori principles in non-traditional settings, advocating for more inclusive educational practices.

Keywords: Maria Montessori method, autism spectrum, developmental material

Słowa kluczowe: metoda Marii Montessori, spektrum autyzmu, materiał rozwojowy

Introduction

A few years ago, I was offered the opportunity to work with two foundations that support the development of children on the autism spectrum. These are the therapeutic centres that support children between the ages of 2 and 8, who have more profound developmental dysfunctions, rare genetic defects, and children who have autism along with other dysfunctions of various origins. I was faced with the dilemma of whether Montessori pedagogy, which I had specialized in for many years working in schools, could be applied to the education of children with special developmental and educational needs, but outside the

typical Montessori environment. Because of the depth of the disorder and the numerous co-occurring dysfunctions with ASD, the chance of these children being able to attend a Montessori preschool or school is slim. Their everyday life is determined by the rhythm of numerous therapies and developmental activities that take place at the foundation, but also outside it, such as rehabilitation, physiotherapy, dog therapy, hippotherapy, and auditory training. In the space acquired thanks to the foundation, I was able to organize a small workshop, equipping it with the most basic Montessori materials. I would like to mention that I am not a therapist by training. I was hired as a Montessori teacher, in a school that focuses mainly on complex therapies, and since a large group of children attending this school show signs of "standard" intellectual development and there are even some children with outstanding talents, in order to provide them with the right stimulation, to broaden their experiences, and to support their cognitive development, there was the need to hire a teacher with extensive experience in personalized work with children.

It cost me a lot to convince myself of the advisability of such work. I found it hard to believe that it was possible outside a Montessori environment, where my little pupils would not be able to experience all the benefits of a diverse group of children in a properly prepared environment, so characteristic of Montessori pre-school and school settings. I had to go back to the roots of Maria Montessori's pedagogy, and her concept of "aid to life" as the goal of the pedagogical method she created, in order to come to an understanding of my new function, to redefine my role, to adapt the forms of working with children that I had learnt about, and to accept this "otherness" in order to be able to enter the field of education, which until now – at least for me – has been an enigma and a constant experimentation in the field of pedagogy and therefore has been my personal "getting out of Montessori box." I had to accept that in some ways I would be alone in my work and reflections on the direction of my interactions, because I am the only Montessori teacher in this environment. And finally, I also had to agree internally to abandon many Montessorian illusions in my work with children with autism and learn to accept that much of my efforts would fail.

Accompanying instead of teaching

The first aspect that succeeds brilliantly in transferring from the Montessorian philosophyto the more conventional education is the understanding of the role of the teacher as a guide, a companion in the journey, where this accompaniment, taken directly from the function of the pedagogue of ancient times, is essential. In Athens, a child of about 7 years of age was assigned a special supervisor, usually a trusted slave, who was entrusted with his care and who was responsible for the education of the boy's manners until he reached the age of majority.

In the case of working with children with various dysfunctions, this understanding of the role of the educator seems to be the most natural and at the same time optimal form of coexistence in the educational space. It allows close observation of all the children's

actions, the way in which the child moves, both in the motor and intellectual sense, in relation to working with developmental material from different fields. Careful observation of the children's reactions to working with the material makes it possible to identify their interests and leads them not only to new discoveries.

Enabling the childto try to acquire knowledge and new skills independently, accompanying them "acceptingly" in the choice of materials, supporting their will, their desire to discover and act, any spontaneous activity, in the case of children with autism is, in my opinion, the most important component of this work.

When considering how I could best help these children, I drew on the main tenets of Maria Montessori's concept. Here, the teacher does not focus on finding deficits and areas to fix in the child, but on bringing out the potential that every human being has and guiding the child towards autonomy. Children who fall into the autism spectrum experience a variety of developmental difficulties including communication, social development, thinking, cognitive skills, forms of activity relating to their interests, and motor skills (Goldstein, Ozonoff 2017: 24). In the contemporary scientific understanding of autism as a complex disorder – "a biologically determined set of behaviours that occurs in a variety of clinical forms and severity"(Goldstein, Ozonoff 2017: 24) – there are different approaches.

One that is particularly intertwined with Maria Montessori's conception takes into account the diversity, individuality, and dignity of dysfunctional people. It is a humanistic strand that does not involve merely treating and teaching autistic people behaviours that are socially accepted as the norm, but broadens the understanding of the nature of autism as a particular form of existence in the world. It has led me to turn towards the children as they are, precisely at the moment in which I meet them, in all their fullness, and who, as people, gradually allow themselves to be discovered, and only then to set the directions for pedagogical interventions.

Furthermore, the literature contains publications by autistic adults or parents of autistic children recalling the unwarranted therapies forced upon them, the blocking of self-stimulating behaviour, the painful exercises, the controversial increased intake of vitamin doses (Beytien 2018: 100). Montessori pedagogy does not fit into either of these approaches.

As children with severe dysfunctions who are in therapy are most often directed by an adult, guided by cues to the tasks they have to do, it became important for me to look for opportunities for them to experience autonomy and freedom of choice. "People with autism need teachers who are more flexible and creative than they are" (Beytien2018: 119). Maria Montessori argued that by skilfully accompanying the child, one has the opportunity to recognize the so-called "sensitive phases/periods," that is, special moments in development that allow the assimilation of new content or skills and can herald real developmental leaps. If I want to accompany the child according to the Montessori pedagogy, I don't treat the child as a problem. Directive instructions are replaced by encouragement, friendly accompaniment, whispering, which is very often new for autistic children. One child, even before it enters the studio with me already lowers its voice, and clearly enjoys this atmosphere

of mystery. For others, it takes several reminders, support, guiding the movement of their hands, waiting for them to return to working with the material after a momentary "switch--off." "Developing also means being able to recognize small, inconspicuous changes as part of development" (Berg 2007: 45). When childrencome into contact with a material, manipulate it, even if they do it in a non-specific way, e.g. turn the material up and down, try to make it move, I remain silent and observe. I have noticed that children with autism or Down's Syndrome, who have issues with movement easily fall over. They wander around objects close to them, they stumble and bump into furniture – they transfer the desire to move to objects.

Self-regulation, self-discipline, self-esteem

In the children I work with, regardless of their age, I have discovered a strong need to work with the practical life material, and even in the case of children with severe gross and fine motor skills disorders, there was a great desire to practise pouring, spooning, sifting, sorting, threading, and using tongs.

These activities were particularly popular with the children and involved pouring water from one jug to another, filling different vessels to a certain height, and transferring water with a sponge, spoon, or pipette from one bowl to another. Since the autistic children and those with Down's Syndrome are mostly characterized by a significant delay in the development of the kinaesthetic sense, I modified Montessori practical life exercises by using deep trays from which the child's spilled water does not spill and which are easier to clean up - different types of heavy-bottomed bottles suitable for a child with reduced dexterity.

I reduced the number of items to be transferred from dish to dish or increased their size. Quite a few of the people I work with react with great anxiety when something is spilled or scattered during an exercise, which – of course – happens all the time. The reaction of the teacher is significant here. The words: "it's okay, it's just spilled water, we'll clean it up, let me show you how…," allow the child to reduce the tension, although there are times when the child gets so upset that they start crying and stop the exercise. There are also children who, in the initial phase, do not tolerate getting their hands wet or dirty at all. Any kind of activity involving practical life exercises builds up the child's belief that they can do the task by themselves. The children with Down's Syndrome manifest this very expressively when they have completed a task by joy, self-satisfaction, or… hugging me.

The eye-hand coordination, the self-regulation, and the gradual increase in the children's attentiveness during the tasks, regardless of the length of their concentration, are for me a very important indication that this very set of exercises leads the children to independence and freedom.

Role of repetition, concentration exercises, value of sensory aids

In early childhood education – I have been aware of the role that senses play in human development. One of the most common characteristics of children on the autism spectrum is deficits in sensory processing. Researchers hypothesize over-arousal and attention-related abnormalities (Corbett et al. 2017: 322). In Montessori pedagogy, sensory training materials are referred to as "keys to the world" (Montessori 2019: 112). For children with special educational needs, the importance of sensory exercises seems doubly important. Children with autism are often distinguished by an almost obsessive need for order. The sensory materials offered to the child in Montessori settings are series of logically ordered elements differentiated according to only one characteristic. It seems to be an added value for the autistic to work with this group of materials.

When observing the children's work with cylindrical blocks involving the placing of ten wooden cylinders of different diameters or heights in the corresponding holes, I see thatthey are often unable to "carry over" the experience once gained. The change involving a different arrangement of the cylindrical blocks is a great challenge to children, and often they do not know how to do such an exercise again. They have to go through the whole working process over again. The mother of Zachary – an autistic boy – describes it this way: "Generalizing information is difficult for people with autism. Zachary swims in the local pool, but on holiday in the Atlantic he has no idea what to do because it is not the same water" (Beytien 2018: 119). A person with autism is able to differentiate elements, perceives details perfectly, is characterized by visual thinking, but has problems with combining details into categories and therefore with forming concepts at a more general stage.

Nonetheless, my impression is that Montessori pedagogy, which is based on a holistic vision of reality (which also manifests itself in all materials) is in this sense a therapeutic pedagogy for children with ASD. The starting point here is not the details, but the logical whole. This gives the child the opportunity to repeatedly practise seeing the object as an ordered structure before dealing with its details.

As children with ASD are characterized by disharmonious development and the lack of sensory experience, which has its consequences in delayed development of thinking, sensory training materials can be a good tool to support the development of different mental operations for many dysfunctional pupils. It is also interesting to see the experience of working with materials to train the sense of touch, differentiating textures, feeling weight and temperature, and overcoming some children's reluctance to touch different objects. The tactile materials are enclosed in wooden boxes. When I offer a child such a box to work with, I do not open it. It is placed in front of the child, and it is up to the child to decide which items to take out. I do not impose this, being aware of the occurrence of hyper-reactivity, sub-reactivity, or sensory seeking that characterize children with ASD. I do, however, consistently offer the child the same material again to work with at different times.

Sensory materials not only "teach" the senses, but also refer to specific concepts and thus can enrich the child's language. This stage of working with Montessori materials is called the three-period lesson.

In the first stage, the teacher's task is to provoke an association of the name with an object or feature of the material. In the second stage, the teacher checks whether the child has associated the name with the object or feature. The teacher, while saying the name, asks the child to move or otherwise manipulate the indicated object. The third step is to verify whether the child has memorized the name corresponding to the object. The teacher, pointing to a particular object, asks: "What is it?" or in the case of a feature: "What is it like?" and the child answers (Montessori 2014: 138). A certain group using the Montessori studio are non-verbal children, so I introduce only the first two stages of the three-period lesson to them. Although it also happens that children with echolalia try to mimic the words I say or give some sound of their own language in response, which in a way can be seen as the closure of the third stage of the naming lesson.

Other developmental materials – learning with the head, heart, and hand

In children with ASD who have reached school age, working with mathematical and linguistic material is also of considerable benefit. Owing to the attention limitations in autism spectrum children, the construction of Montessori material that contains only one specific problem, isolating the chosen issue from others, can foster the understanding of the essence of the material.

The representations of mathematical or grammatical concepts are highly pictorial and, in the initial phase, learning about them is linked to manipulation. This makes it easier for the child to get an idea of the subject matter of the exercises, while their repetition and the possibility of gradually increasing or decreasing the difficulty of the task allow for individualization of the learning process.

Montessori's pedagogy emphasizes the building of intrinsic motivation in the child supported by interest, rather than rewards and punishments (Montessori 2005). For children with attention dysfunctions, this is not an easy task. The supportive presence of the teacher, the acknowledgement of progress on a task, and an increased number of short verbal messages are indispensable when working with some children, also because their therapies are based on positive reinforcement and the child is very used to this formula of work.

Here, a delicate discernment is needed as to what will serve the child and what will not, whom, when, and at what point to motivate further work. Many children need messages from an adult before they know the material and their ability to work with it. This was difficult for me because, as a Montessorian teacher, I was aware that my intervention was to be limited to what was necessary, and that the system entirely rejects rewards and punishments.

I remember a situation with a four-year-old boy who had chosen a cylinder block to work with. I showed him how to use it. The child independently placed most of the cylinders in

the holes, but at one point he encountered a problem and struggled for a long while with two cylinders that did not fit into the holes in the block. I waited patiently without showing either impatience or approval. The child looked at me and his nervousness grew. So, I asked if he wanted to finish the exercise, if he wanted me to help him, and he cringed, expecting a clear message from me rather than being left with a decision he could not yet make. My silence irritated him. Nowadays, I try to be more considerate about "praising" children and sense whether my: "yes, you succeeded" or "try differently," is really needed by the child.

Owing to their very distinctive design, Montessori materials have a self-control function (self-error correction or error control feature). This is particularly useful for children for whom forced eye contact and the need to maintain it can be both difficult and unpleasant. There are children with ASD for whom mathematics is a particularly interesting area. A fascination with numbers stands out for several of my pupils. Montessori materials in this area are a real highlight for them and intensive work on large numbers can last for several weeks. Here, too, there are quite a few benefits to be found in the wealth of materials and their applicability to autistic pre-school and school-age children. Interestingly, there are also children who unerringly line up number cards in rows from 1 to 9000 and read them in two languages while, when asked to put six golden pearls (beads) from one of the mathematical aids into a bowl, they have trouble performing such a task. I experience many such amazements just reassuring myself that the thinking of a child on the autism spectrum is very different from what I was taught in my studies and during my Montessorian training.

Three examples of working with children with ASD

Swift

Swift is 5 years old. He is a boy in the autism spectrum. He also experiences other difficulties. The child's gross and small motor skills are impaired. He has trouble keeping his balance. He moves slowly, clumsily, on widely spread legs. He bumps and knocks into things very often. He stumbles and falls even in spaces he knows well. He has severe attention deficits and is easily distracted. Knowing of his difficulty moving in space, I suggested that he work on a small rug spread out on the floor, but the child found it difficult to control his limp muscles and would lie down on it next to the Montessori material, interrupting his work. He probably associated such a situation with an SI class or physiotherapy exercises on postural mechanisms and showed a readiness for physical rather than intellectual activity. The child strongly preferred activities at the big table. In Swift's case, many other modifications had to be made, not only concerning his workspace. There was a whole group of Montessori materials in areas that interested him. For example, mathematics materials, were not suitable for him owing to the large number of small elements, although on an intellectual level the child showed readiness to work with them. He was curious about numbers and enjoyed counting. The solution was working with special large wooden coloured pearls (beads),

which correspond to one of the Montessori materials, enlarged so that the child could not only touch each isolated element, but even grasp it with his whole hand.

I also used other materials, such as a set of sand-paper numbers, in an enlarged version. When the child was working with sensory material, I gave him only the three to four largest pieces of the set in the initial phase. At a certain stage, a set of ten wooden cylinders arranged in blocks became a favourite activity for Swift. It was quite a challenge for the boy to place the smallest pieces in the series with his powerful manipulation difficulties. I noted that he did not experience frustration at the time, even though both inserting and removing the individual pieces made it difficult for the child. The satisfaction of completing the task, outweighed the effort the little boy was making. I also had to modify the materials for pouring water, sieving sand, and transferring objects from one container to another: much larger trays, massive bowls, jugs with the right handles, so that the boy could manage the task himself. Knowing that it is the materials from the practical life section that can help the child's concentration, motor development, and, in the future, self-care, I often offered such activities to Swift. Many times, however, the boy would interrupt the task and expect my immediate reaction with his "No!" when he saw that he had spilled water, knocked over a dish or got his clothes wet, which is a critical moment for many children with autism, as any dirt on their hands or clothes is not accepted by them. So, I brought a small travel hairdryer from home to show Swift how we could deal with such a problem.

Hannah

When we started working with Hannah, she was 7 years old. Hannah is a child in the autism spectrum and her parents also reported that their daughter has underdeveloped cognitive functions and a severe speech delay. It was the problem with communication and the very distorted speech, despite Hannah's expression, that was initially the biggest trouble in entering into a relationship with her. She tried to communicate with me, but seeing that she was not understood by me she withdrew, intimidated. What captured me about this child and helped me recognize the direction of our work together was rooted in her dysfunctions, but at the same time became a clue. It was Hannah's particular predilection for order. From the beginning, she paid exceptional attention to the order in the environment and organized herself for work. She chose the things she needed, and when she had to write something down or cut something out, she first got everything ready. The fixed place of materials in the environment definitely helped Hannah to work. The child became aware of the topography of the room and the logic of the placement of the materials. Their structured design as well as the very flow of the teacher's presentation of the material supported the child's learning.

In addition, the individualized form of the three-period lesson, the result of one stage of work with the material from the previous one, and the fact that the child did not have to explain anything, but only point to specific representations, helped the girl to understand her task, and I could get used to her way of communicating and learn her "language." The material became a bridge between us, and Hannah quite quickly began to point to her

favourite materials, eagerly returning to them, demonstrating what was consistent with her developmental stage. Thanks to the intensive speech therapy work, Hannah, now nine years old, has overcome some of her difficulties, can speak in full sentences and much more clearly. At her level, she works with a lot of Montessori materials, doing parts of the tasks quite independently. Thanks to the joint efforts with the girl's parents, we were able to enrol her in an inclusive school run using the Montessori method and Hannah has been a student there since the second semester of this school year.

Kate

Kate is a six-year-old girl in the autism spectrum, not communicating, owing to selective mutism. She is a very dependent child, expecting to be constantly guided, difficult to interact with, with poor facial expression. Kate performed non-verbal tasks at her age level, but did mechanically, and she did not show any initiative of her own either during play or learning. She just waited passively for the teacher to suggest something to her. I could not see her reaction to the proposed materials. Reflecting on my strategy for working with this girl, I decided that we would start with fixed rituals so that the child would become accustomed to and understand her task – starting with the way I greeted her and invited her to do the tasks, encouraging her to start working independently and finishing with the material in the studio. I placed all the materials I offered the girl one by one near the table where Kate and I were working, so that she could see them. This strategy was to give her a sense of constancy, security and prepare her to make her own choices. Despite the lack of answers, I always asked her if she wanted to work with a particular material. I also showed her that if she didn't want to do the task, to move the material away from her. When a girl finished a task, I would ask her to help me put the material away. I tried to create a situation so that the girl would want to speak up, so that at least one word would be said, possibly a gesture for "yes" or "no."

It took more than a year for Kate to speak up for the first time. At first, however, I taught her to choose on her own from two materials from a particular area, which I gave her to work with. I heard Kate's first word while working with sand-paper numbers. In the third stage of a Montessorian three-period lesson, when the teacher's question is asked – "What is this? What number is this?" Kate answered "Seven." The girl is now showing good progress both in the area of neurology and working with Montessori material. She is revealing great potential in mathematics and is solving numerous mathematical problems.

Conclusion

All of the children mentioned attend various therapies. The activities in the Montessori studio are among their many developmental support activities. It is therefore difficult to state unequivocally whether it is the Montessori method that contributes significantly to these

children's chances in the cognitive, social, and emotional spheres. Undoubtedly, however, the main characteristics of this method, i.e. guiding the child towards autonomy, integrity, and self-awareness while respecting their pace of work, respecting them as a person, can be a significant factor for their development. The external order, the physical and temporal structuring of the materials presented, the visual support, the possibility of free choice, the naturalness of this method, and its reliance on object manipulation, make it compatible with other forms of interventions used in working with children on the autism spectrum. By observing the activities of these three children over an extended period of time, I can conclude that:

1. Children make attempts to work independently.
2. They successfully perform manipulative activities according to their abilities.
3. They expand their vocabulary through three-period lessons.
4. They use selected Montessorian materials according to their purpose.
5. Two of the children mentionedare able to use symbolic notation.
6. They improve their communication skills in everyday situations.

Montessorian stories

In fact, my collaboration with foundations created for children on the autism spectrum began with an invitation to conduct group activities based on the first of the five great Montessorian lessons on the "Coming of the Universe and the Earth". These stories constitute an educational context that leads children to seek and understand their role in the universe, on Earth, in relation to people, and to take responsibility for the world. The essence of the presentation is also to show the mutual interdependencies in the reality in which we live, discovering the relationship between nature and culture. Together with the child, we take a kind of journey through time and space in their imagination. "We start with the origin of the universe, talk about the history of life, learn something about the peculiarities of man – his mind and culture" (Dattke 2009: 100). The foundation is laid in the five stories created by Maria Montessori and her son Mario.

When I undertook the task of telling the first of these stories to children on the autistic spectrum, I modified the story a little and encouraged them to participate: laying out elements on a black ribbon representing the passage of time from the Big Bang to the formation of the Solar System, performing simple experiments, turning the lights on and off, setting up a model of a volcano, etc. I also encouraged them to participate in the creation of the story. It turned out that, although it was my first visit, the children responded very eagerly to the invitation by co-creating the story through their activity. Afterwards, I was offered the opportunity to come and see the children once a week and continue the activities.

I have also conducted these activities in public and non-public schools, where they have always been received enthusiastically by the children, often leading to lively dialogue, questions, and the children's interesting reflections. It is very important to me that this

unique form used in the Montessori method does not remain available only to children in Montessori schools. For it has a universal, unifying, cognitive value, showing the close interdependence of man and the whole Universe. In today's world it seems to be particularly important that people learn from an early age to perceive and understand this relationship, to develop it and to seek their task as inhabitants of the Earth.

Montessori institutions are still few, soonly privileged familieshave access to them. In the area of Warsaw, where I live and work, these are exclusively fee-paying, privateinstitutions. The cost of Montessori education is very high, so I am even more keen to promote this pedagogy and use its values among children outside Montessori communities.

The examples I have mentioned of "getting out of the Montessori box" and the adaptation of Montessori pedagogy in different settings are some of the challenges that I believe are worth addressing. I believe that a concept which was born in Italy, and which has developed in many countries around the world still leaves opportunities for creative use with a much larger group of children than is currently the case and in places where it has previously been inaccessible.

Research

The few studies on autism and the potential for holistic support for child development in the Maria Montessori pedagogy strand are part of an attempt to create a system of effective practices that both researchers and practitioners in early childhood education and special education are working on, as described in their research projects by Epstein, Lindeman, and Polychronis (2020), titled *Montessori: A Promising Practice for Younger Learners with Autism Spectrum Disorders*. However, it is important to mention that these studies are often projects based on individual experiences gathered while working with students with ASD. They therefore concern a specific individual, with particular and unique characteristics. They are carried out in specific settings, adapted to work with such individuals and using activities and resources appropriately adapted for the specific child, for their individual, specific needs and abilities. They cannot therefore be considered universal.

In my opinion, it is also important to note that research usually presents a combination of different methods for supporting the development of children with special needs, for example, with the TEACCH method (Treatment and Education of Autistic Related &Communication Handicapped Children), developed by researchers at the University of North Carolina, as a response to the educational needs of those diagnosed with an autism spectrum disorder. However, the author of this research Project – Sánchez Soriano (2019), concludes that the proposal to use two models of intervention – the Montessori method and TEACCH – does not pretend to be considered as applicable to all students with this type of dysfunction.

Similarly, Calero Vázquez (2018: 71), in the conclusion of her thesis, points out that research on ASD conducted in different parts of the world does not provide clear results on the causes of the disorder, which can lead to misinterpretation and thus reduce its scientific value.

Realizing that non-standard solutions are needed when working with students on the autism spectrum, proposals are being made for didactic projects in the Open Education stream, zoot therapy, socialization strategies, and alternative communication systems, and these are being combined with Montessori's concept, which, because of the characteristics it exhibits, is largely compatible with the needs of people with autism. The inclusion of Montessori pedagogy in the scope of pedagogical interventions, seems to be something very relevant in all contexts, as it is a pedagogy focused on each child and that child's optimal development.

Conclusion

The Montessori philosophy and materials can actively support the development of children with dysfunctions. They provide an opportunity to expand the world of children's pre-conceptions, to order sensory impressions, to stabilize posture, to coordinate movements, to promote attention, and to individualize the learning process. They also offer the opportunity to make certain modifications and adapt them to the needs of the pupil, which makes them very useful for children with various developmental and educational problems. It is also worth reflecting on the fact that researchers consider autism to be the most enigmatic disorder (Goldstein, Ozonoff 2017: 24), while the WHO notes a steady increase in the number of people affected and reports that one in a hundred children has autism (WHO 2023). This calls for a new look at education, also in economic terms, because every child who is given the right support has a chance to function in the community, to build independence, and to get a job. This is why it is so important to develop new models, to look for inclusive solutions.

The very issue of using the Montessori method in working with children with dysfunctions requires detailed research, verification, as to whether e.g. the tendency of children with ASD to place elements of aids evenly and their extraordinary care for order and narrowed field of attention correlate with limiting the number of elements and almost mathematical precision in differentiating them in Montessori material.

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Designing a system of learning materials to explain climate change to children

Summary

Our climate is changing faster than anticipated, creating an urgent responsibility for educators to prepare children for global warming and help them understand what is happening and how everything is interconnected. Inspired by the Montessori method, this project explores the process of designing a set of learning materials to teach children (aged 6 to 9) about climate change. These materials were tested in a Montessori school and a state primary school over 5 weeks, using a qualitative research methodology of observation and semi-structured interviews. A cross-curricula approach, grounded in systems thinking, proved to be an effective way to break down and organize the content for this topic. A variety of different types of learning materials were designed including: card matching, experiments, listening to sounds, collaborative drawing, and engaging with physical materials. The hands-on learning materials that directly reflected their purpose, proved to be the most effective in achieving the learning outcomes. A consideration of how the design process followed many of the Montessori principles is explored, whilst also identifying a need to be more flexible with the Montessori approach and use the method as a springboard for new ideas.

Keywords: Montessori, design, learning activities, global warming, systems thinking

Słowa kluczowe: Montessori, projekt, zajęcia edukacyjne, globalne ocieplenie, myślenie systemowe

Introduction

The systems we have designed to produce, consume, and dispose of the things humans need are leading to global warming, a threat to all forms of life on planet Earth (Doerr 2021). These systems are complex, touching many different industries and areas of society, so they can be hard to explain and understand. But children of all ages are starting to see and hear about the effects of climate change and want to understand what is happening. Educators have a responsibility to prepare children for a world in which many of the jobs of the future are likely to involve changing and developing these systems. As stated in a recent strategy paper by the Department for Education (2022): "Green jobs will not be niche. We anticipate that sustainability and climate change will touch every career." Teachers need

a cross-curricula approach to teaching climate change to children, as the topic touches on many different subject areas.

Through the design of a variety of learning materials, tested in schools with primary school-aged children, this research project aimed to explore a new way of teaching climate change, focused on simplifying the topic into a set of small interconnected parts. The approach was grounded in systems thinking (Wright, Meadows 2009) and inspired by the Montessori method (Duffy, Duffy 2002) which exemplifies the idea of breaking down learning into its smallest parts, in order to build an understanding of the big picture. Montessori is well-known for her creation of a complete set of learning materials which she designed following a set of clearly defined principles, hence her materials served as a key source of inspiration for this project.

I established a set of three research questions around which the results of this paper are structured.

A. How might systems thinking be used to explain climate change?

As educators, we have a responsibility to better prepare children for global warming, by helping them understand how everything is interconnected. Whilst teachers seek ways to weave the topic of climate change into the other subjects they are required to teach, there is limited guidance on how to do this. Dolan (2021) begins to address this gap with a variety of ideas and approaches in her book *Teaching Climate Change in Primary Schools: An Interdisciplinary Approach*. Whilst the case studies in this book provide a rich source of inspiration for how to teach different parts of this topic, I found myself lacking an overarching structure to explain how everything fits together. I began exploring how to structure content on climate change into a system, following the guidance of Wright and Meadows (2009: 11) who state that "A system must consist of three kinds of things: elements, interconnections and a function or purpose."

However, it must also be noted that I do not work in the field of climate change, therefore this project was limited by my ability to interpret and communicate the information I gathered accurately.

B. What types of learning materials are most effective?

As a designer, I wanted to develop an understanding of how children learn and also to find out what types of materials and methods support them best. Much of my motivation for this project stemmed from my desire to develop my design practice, following over 20 years working in large educational companies as a designer and illustrator. I was aware that different subjects have a dominant learning method, for example: science uses experiments and reading uses books, but I didn't understand what made a particular approach more effective than another. I read a series of interviews with designers of different types of children's products in the book *Designing for Kids: Creating for Playing, Learning and*

Growing (Castella 2019) and it became clear to me that it would be most valuable to use this research project as a space to play and explore a variety of different ways of learning, observing which resonated with children the most.

C. How might the Montessori approach influence this work?

The Montessori community are seeking materials to explain climate change, a topic which didn't exist when Montessori was developing her own materials 100 years ago. Inspired by the way each Montessori material is focused on teaching a single concept, stripping away anything that isn't necessary or relevant, I wanted to explore how the Montessori materials might evolve so as to find ways to explain how the climate is changing. As I studied the materials from Montessori's own handbook (Montessori 2016) and from her elementary curriculum (Montessori 2020) I began to see how each of the different materials builds upon the last, in order to explain a larger idea. It's evident that Montessori education embraces thinking in systems, especially when it comes to teaching about sustainability (Sutton 2009), however there is still an opportunity to expand the materials offered on this topic.

Methodology

This research project followed an iterative design process structured around 6 key stages: **Discovery > Definition > Ideation > Prototyping > Testing > Evaluation**. Different phases of this cycle were repeated as needed, which allowed me to iterate and develop the ideas and designs as soon as a new insight or piece of information surfaced (Castella 2019).

I gathered the qualitative data for my research by observing children using the materials I had designed in a classroom setting. This approach aligns with the Montessori method which places a strong emphasis on the observation of the child and was how Montessori developed her own didactic materials. As I was also facilitating the sessions, it was necessary to record each session with video and audio so I could focus on the participants during the sessions and then replay the footage later to document and reflect upon my observations.

At the end of every research session I talked to the children individually, asking them a similar set of questions each week to understand their experience using the materials and to answer any questions they had for me. This provided an opportunity for the children to share their own ideas with me and for us to discuss how we could include their ideas in the next iteration, bringing them into the process of developing the materials with me. These interviews were semi-structured allowing the conversations to flow freely and set the children at ease, encouraging them to say exactly what they thought, and creating some space for them to say things they might not have felt comfortable raising in front of their peers.

As the majority of children in the UK attend state schools, I decided to conduct my research in a state primary school as well as a private Montessori primary school where I could assess if these different learning environments had any bearing on how the children

engaged with the materials. At the Montessori school I recruited a group of 13 children who were part of a multi-age class all between 5 and 9 years old. At the state primary school I recruited a group of 6 children who were all 6 years old. I conducted a total of ten sessions, five for each group, once a week for 5 weeks.

As I was working with children in a classroom setting there were many ethical considerations for my research including; getting written permission from school gatekeepers, gathering child and parental consent, providing all participants and their parents with information about the project and explaining how they might withdraw at any time if desired, as well as the pseudonymization of participant data and protecting the data collected. My research proposal was approved by the research ethics panel at Anglia Ruskin University and I endeavoured to follow the BERA ethical guidelines for educational research (British Educational Research Association 2018) throughout my research.

Explaining climate change

In this section I will share my explorations for defining and structuring the content of climate change into digestible chunks of information in consideration of the research question: **How might systems thinking be used to explain climate change?**

In the discovery period, I focused on reading and gathering influential literature written on climate change, both from online organizations founded in scientific research like NASA (n.d.), World Wildlife Foundation (n.d.) and National Geographic (n.d.) and books which explored things like systems thinking (Wright, Meadows 2009), plans for reaching net zero (Doerr 2021), and case studies of teachers teaching climate change (Dolan 2021).

In order to structure the content I began to organize all the ideas I'd gathered into some kind of order to tell the story of climate change. As I considered the history of how we've ended up changing our climate, it became clearer to me that our human needs to feed, house, and support a growing population have become a driving force behind our need to produce more things, for which we are heavily dependent on the extraction and burning of fossil fuels. The irony of this situation is that our production processes are damaging the natural systems that exist to support our human needs in the first place, causing climate change. I restructured the story to better reflect this observation with our human needs threading down as well as across. A grid of elements began to emerge with content flowing in both directions, showing interconnections between all the parts and turning the elements into a system.

I began thinking about the content for each element in the system. I wanted the children to be able to read and engage with the content independently from an adult, so I decided to target the average 6 year old's reading ability, based upon the national curriculum in England (Department for Education 2013). In order to write the content I needed to consider what a child really needs to know about each of these elements, so I wrote short digestible chunks for every element in the system that answered the following four questions:

a. What is it?
b. Why do we need it?

    c. Where does it come from?

    d. How does it affect people?

As the elements within the system were all dependent upon one another, I began considering how I might strengthen the system design visually. It occurred to me that the Montessori geometry cabinet was a perfect example of how similar items can be grouped together, whilst sitting within the same cabinet. I began thinking about the rows of content in my system as a set of layers in a box, with each shape representing one individual element (e.g. Air), each group of 4 elements sitting in its own layer (e.g. Human Needs) and each layer with a specific place in the climate box (e.g. Layer 1).

Then I began to explore how each shape might evolve, to apply more visual definition and a pattern to the system. I assigned simple geometric shapes to each of our human needs (see the white cards in Fig.1) and the shape in the next layer would evolve from the previous one. For example in the fossil fuels layer (see the black cards in Fig. 1) the shapes bulged out representing the way fossil fuels are adding waste to the system. At the same time the global warming layer (see the red cards in Fig. 1) left a hole in the middle of each shape, reflecting the way global warming is leaving a hole in the environment. The system was coming together, with elements, interconnections, and a purpose now defined.
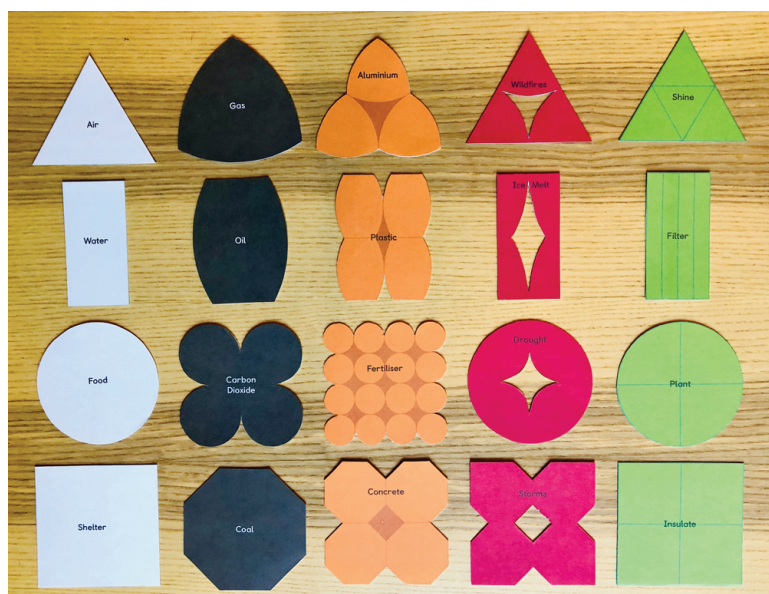

Figure 1. Developing the shapes across the system

Source: own research.

Designing learning materials

In this section I will focus on answering the research question: **What types of materials are most effective?** Design is like a dance between what you are trying to communicate and how you do this. There is an inevitable back and forth of adjusting the content to work with the materials and vice-versa in order to reach the most creative and effective solution. Pestalozzi, known as the "Father of Modern Education," believed in developing the powers of "Head," "Heart," and "Hands" (Pestalozzi Society online). I was interested in exploring how these qualities could become an integral part of engaging with my materials, importantly connecting children to ideas and feelings through their senses, as well as their minds.

I was attracted to the playful nature of the toys and experiments designed by Arvind Gupta (Gupta online) and felt it was important to explore how children use their "heads and hands" to conduct experiments by themselves. I was also aware that climate change can feel like a rather abstract concept as the causes are neither visible nor tangible, so I wanted to create a set of physical materials that children could use their "hands" to touch and observe. I was inspired by Montessori's thermic tablets, which include materials like wood, cork, metal, and glass, that children touch to gauge the temperature differences between them.

In order to introduce more "heart" into my materials, I studied the work of artists, musicians, and writers dedicated to raising awareness about climate change. I discovered eco-acoustician Matthew Burtner, who recorded the sounds of glaciers melting in the wilderness of Alaska, and turned these sounds into musical compositions, evoking an emotional reaction to climate change (Kern 2019). I wanted to find a way to use sound and art to address the feelings children may have about this challenging topic.

By the end of my discovery period, I had uncovered so many different ways to explain an idea to children, that I decided to use this research opportunity to explore a different type of learning material for each layer within the climate box. After much experimentation, the climate box prototype ended up consisting of 5 stackable cardboard boxes; each box represented a layer in the system and contained a different type of learning material (see Fig. 2A, B). In the following sections I will go into more detail about each layer of the box.
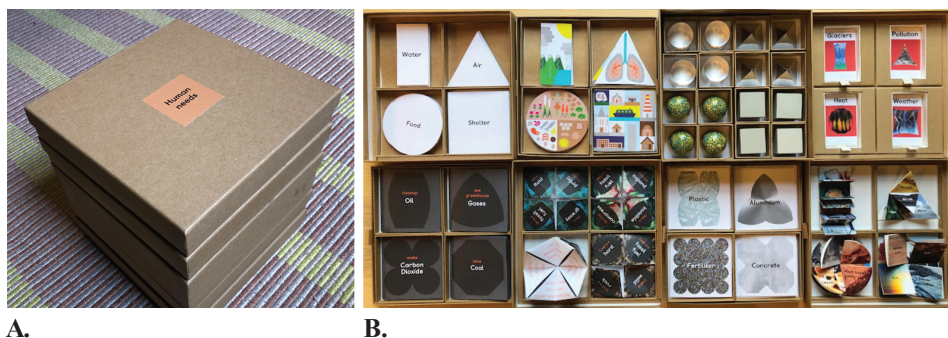

A.   **B.**

Figure 2A, B. The climate box prototype

Source: own research.

Layer 1: Human needs

The aim of the first layer of the climate box was to teach children about our basic human needs. The elements in this layer are: **air, water, food,** and **shelter**. I created a set of 8–10 illustrated cards for each element that connect together to make patterns.

I started by sketching the initial ideas on paper and then digitized them in the computer (see Fig. 3A, B), added copy, and printed several tests in different sizes (see Fig. 4A, B), in order to create a set of prototypes to test with children.

A.   **B.**

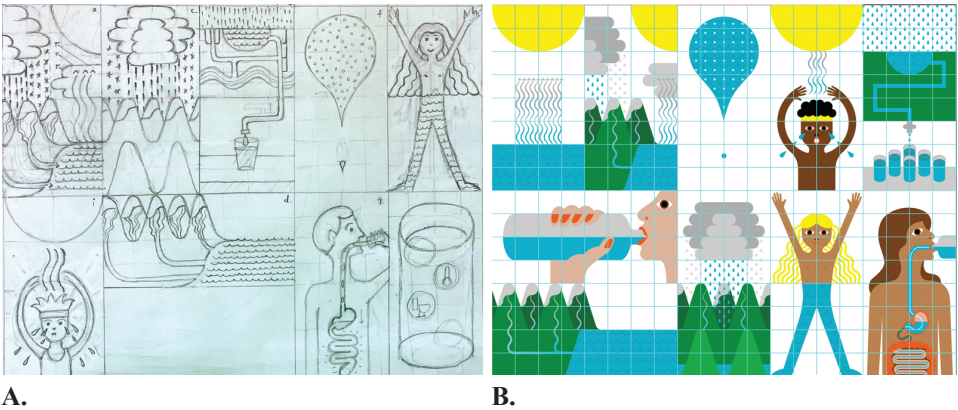Figure 3A, B. Sketching ideas and redrawing digitally

Source: own research.

A.   **B.**

Figure 4A, B. Printing tests of designs

Source: own research.

I created a set of lesson plans for testing each layer of the climate box in the classroom with groups of children. For this first layer the children were asked to read the cards aloud and explore how the cards fit together to discover patterns.

In observing the children working with the cards, one of the key findings was that children were visibly frustrated when the cards didn't fit together, but delighted when they found a pattern. One child proudly declared "It's made a sun, a whole sun, I knew it was going to make a sun!" (see Fig. 5A, B).

A.   **B.**
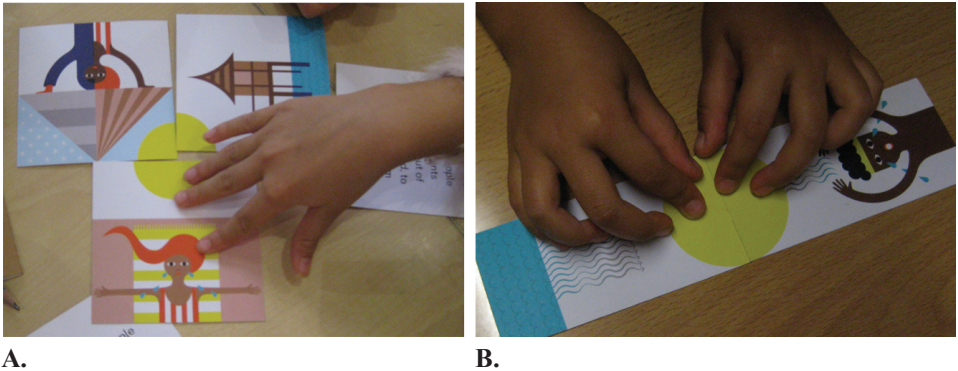
Figure 5A, B. Children connecting cards

Source: own research.

The following week I iterated the designs so all the cards fit together seamlessly and asked a child to try the cards again (see Fig. 6A, B).

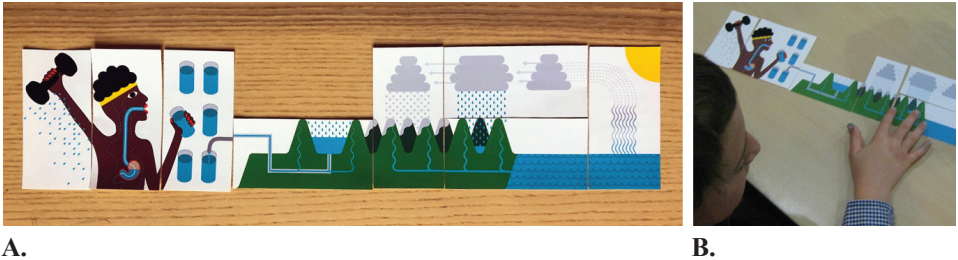**A.**   **B.**

Figure 6A, B. Iterating the card designs

Source: own research.

The process of immediately iterating the designs was very rewarding, both for me as the designer and for the children who were able to see how their feedback was having an immediate impact on the work.

Layer 2: Fossil fuels

The aim of the second layer of the climate box was to provide children with a hands-on way to learn about the fossil fuels we're burning to meet our human needs. The elements in this layer are: **gas, oil, coal,** and **carbon dioxide**. I created a set of 4 paper fortune teller games (see Fig. 7A–C) and 4 illustrated instruction booklets to guide them in doing simple science experiments using everyday household items (see Fig. 8A–C).
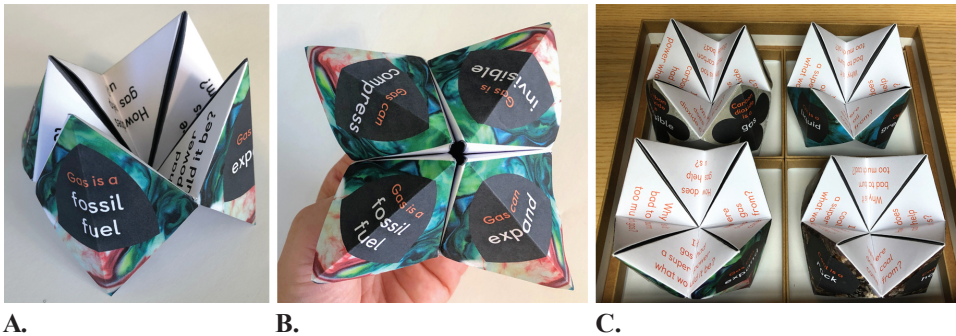

A.   **B.**   **C.**

Figure 7A–C. Set of paper fortune tellers

Source: own research.

A.   **B.**   **C.**

Figure 8A–C. Set of instruction booklets

Source: own research.

In this session the children were asked to play with the fortune tellers in pairs, reading aloud the information about fossil fuels that they found inside, and then follow the instructions in the booklets to conduct the science experiments. As an example, one experiment required children to try and extract the chocolate chips from a cookie using toothpicks, in order to get a sense of the challenge of extracting coal from the Earth.

In observing the children playing the fortune teller game, whilst they were very engaged in the game, they didn't seem to remember the information they read out. I realised that the fortune teller device was actually distracting them from the primary purpose of the material, to learn about fossil fuels.

However, the children loved doing the experiments and were able to easily explain what they had learnt, for example, a child who had conducted the oil spill experiment said: "Once you've put oil in the ocean then it's almost impossible to get it out." Learning-by-doing seemed to be a very effective way of teaching children about climate change. There could be some real benefits to creating an experiment for every element in the box, providing a hands-on way to compliment the other learning materials.

Layer 3: Mass production

The aim of the third layer of the climate box was to explore the properties of real man-made materials that are mass-produced by burning fossil-fuels. The elements in this layer are: **aluminium, plastic, fertilizer,** and **concrete**. I created a set of 3D geometric shapes out of each material (e.g. 4 concrete cubes, 4 aluminium pyramids etc.) as well as a set of adjective cards, picture cards, and explainer cards to label and describe the materials.

In these sessions the children were asked to observe and touch the materials, and then place the adjective cards and the picture cards next to the materials they best described.

In observing the children engaging with the set of physical materials, I realised I had become too focused on making the materials form perfect geometric shapes, so they would fit into the system I had designed, and forgotten that it was more important for the children to play with the materials and experience their different properties and behaviours. I had mistakenly prioritized form over function. One child referred to his set of materials as a "mini-museum" showing the way he perceived them to be precious objects (see Fig. 9).
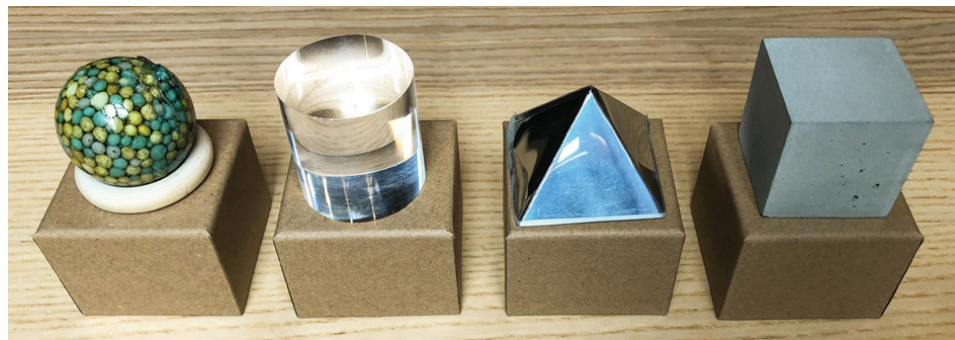
Figure 9. Mini-museum

Source: own research.

The children also struggled to match some of the adjectives to the correct materials (see Fig. 10), as they couldn't engage with the materials, owing to the way they had been formed into specific shapes. For example, one of the adjectives for aluminium was "flexible", but the structure of the aluminium pyramids meant they became quite rigid and the children didn't know that this material could also be flexible.

In both groups I observed children looking through the plastic cylinders and becoming excited when they noticed that everything through the cylinder was magnified (see Fig. 11). These materials were harder to iterate in one week, but I learnt that I need to recreate these activities so they engage the children in using the properties of the materials to solve a problem, as opposed to simply labelling and describing the materials with cards.
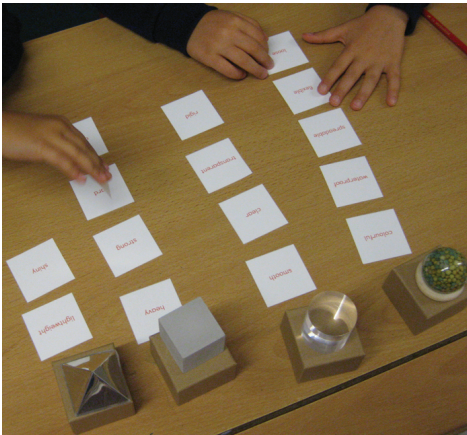

Figure 10. Matching adjective cards to materials
Source: own research.

Figure 11. Using plastic cylinder to magnify things
Source: own research.

Layer 4: Global warming

The aim of the fourth layer of the climate box was to find a creative way to show the impacts of global warming and to support children in processing how that makes them feel. The elements in this layer are: **heat, glaciers, pollution,** and **weather**. I created a set of audio cards (see Fig. 12A, B) with the sounds of extreme weather, and tracks with the work of poets and musicians focused on climate change.

A.   **B.**

Figure 12A, B. Audio cards with Yoto (online) audio player
Source: own research.

   In this session I asked the children to sit in a group, close their eyes, and listen to the set of sounds of extreme weather, and then write down how these sounds made them feel. This was followed by the group working together to create a collaborative drawing of the world, upon which they were asked to layer some of the sounds they had heard over their drawing, showing the impacts of climate change on the world.

   In observing the children trying to guess what they were listening to, I noticed the activity deeply engaged their imagination. For example, when listening to a wildfire, one child said: "Ooo, I imagined a dragon breathing fire." Some children also acted out the sounds with their bodies, swaying left and right to the sound of the wind. When I asked the children to write down their feelings about global warming, I noticed some of them found it hard to describe their feelings with a single word. This age group seemed much more comfortable expressing their feelings through movement and pictures than with words.

   Whilst drawing the impacts of climate change into their drawings, one child scribbled over the entire drawing with blue thunder (see Fig. 13A, B) upsetting some of the other children in the group. The activity demonstrated the way we all impact each other, opening up a discussion about why it's so important that we learn to share the planet and its resources together.

A.   **B.**
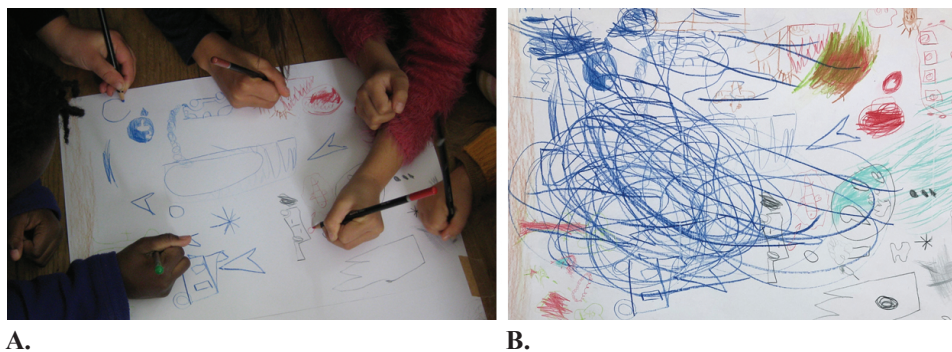
Figure 13A, B. Children drawing together

Source: own research.

Layer 5: Sustainable ideas

The aim of the last layer of the climate box was to share some of the amazing ideas people are developing to address climate change, and to inspire the children to come up with their own ideas. The elements in this layer are: **trees, seaweed, plants,** and **sunshine**. I created a set of four cards, each with a set of 4 innovative ideas that unfold from the centre of the card (see Fig. 14A–D). I also gave the children a box of real sustainably made products for them to play with (see Fig. 15), like an edible spoon and a pen whose ink was made out of carbon (Air Ink online).

A.   B.   C.   D.
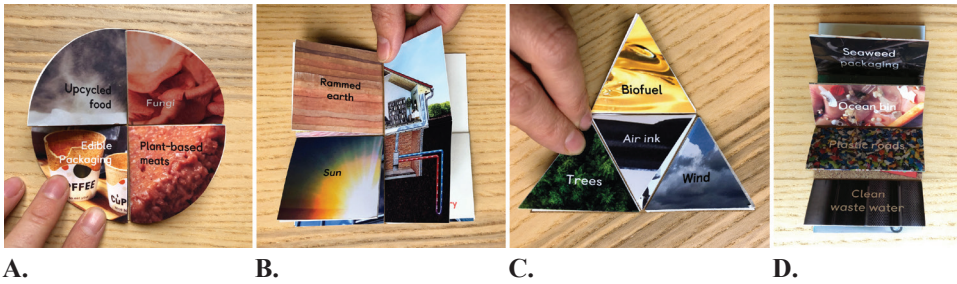
Figure 14A–D. Unfolding cards

Source: own research.

In these sessions I asked the children to unfold the cards and read the ideas aloud, play with the real product samples, like writing with an Air Ink (online) pen and then design their own inventions for the future.

In observing the children unfolding the cards, I found they didn't work very well in a group setting, as they were too small and fiddly for more than one child to see at a time. Like the fortune teller this paper device seemed to be a distraction from the content inside.

The children were much more interested in the real products that they could use and test themselves, like the edible plates and straws they tried eating, and the pen made out of carbon emissions they tested drawing with. These materials successfully stimulated the children's imaginations so they were able to develop some very creative ideas for how to reinvent the future. For example, a child came up with an idea for charging cars saying: "And if there's like magnets, or mini charging stations on the road, and then in the tires when you drive over them then it kind of charges the car a bit."


Figure 15. Sustainably made product samples

Source: own research.

As the weeks progressed I had noticed that whilst the children were able to identify each of the elements in the system, they sometimes seemed confused about how the layers related to one another. One week a child asked if the elements on the grid were connected

vertically as well as horizontally stating, "…are air and aluminium and drought altogether in some way?" I realised I needed to do more work to ensure the children understood how things connected, and so I created an additional activity for this purpose. Using the grid of elements I'd put inside the lid of each layer, I created a grid of questions, and a set of visual cards that matched each question (see Fig. 16A, B).

With each group I handed out the visual cards to the children, and we took turns reading through the questions in the grid. The goal was to cover each question with the correct visuals, so the children put their card over the right question when it was read out. The children appeared to really enjoy testing their knowledge in this way, and by the end of the sessions I could see this activity was really helping to embed the connections into their memories.
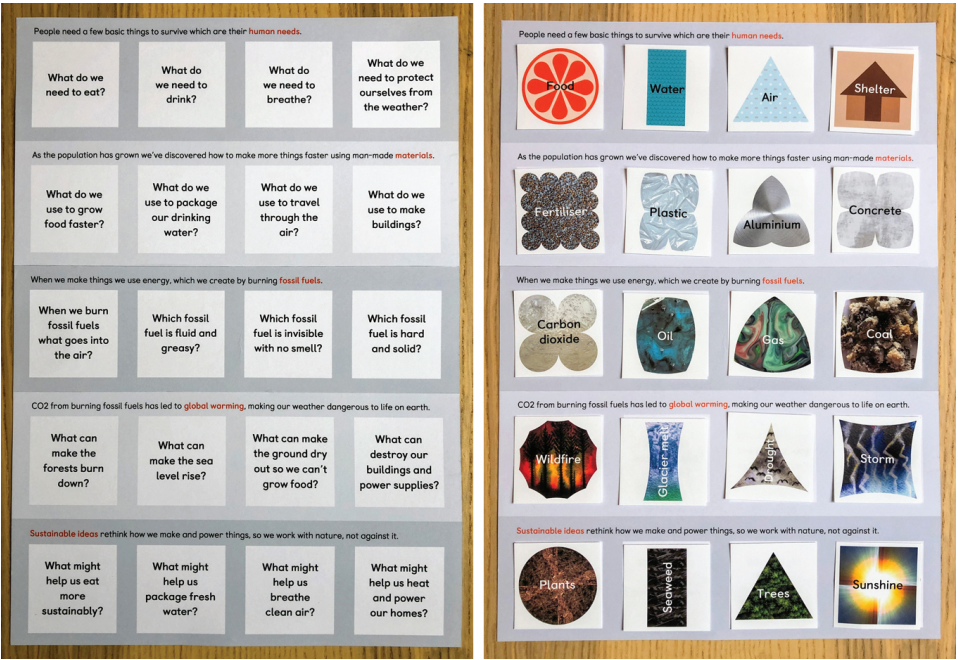
A.   **B.**

Figure 16A, B. The grid game

Source: own research.

The influence of the Montessori approach

In this section I will focus on answering the research question: **How has the Montessori approach influenced my work?**

Connections to cosmic education

Montessori (2007) described her idea of "cosmic education" as "All things are part of the universe, and are connected with each other to form one whole unity" (Chapter 1, para. 6). Her approach is grounded in cross-curricular learning, where children are encouraged to develop a deep understanding of a topic by learning about all the subjects that fit into that topic. This project closely follows the thinking behind cosmic education as children can only really grasp what climate change is by breaking the topic down into its smallest parts and learning how all the different parts affect one another.

Applying the Montessori principles

One of Montessori's principles was to focus on **"isolating each concept"** of learning first, before connecting ideas together. Montessori (2012) stated "If one sense is isolated, it seems to be enhanced in its power of perception" (Lecture 10, para. 3). For the fourth layer of the climate box I asked the children to close their eyes whilst listening to the isolated sound of each weather pattern. This allowed the children to really focus on what they were listening to, filling their imaginations with ideas.

Many Montessori materials include a **"control of error,"** which means their design allows the child to independently and automatically understand if they have achieved the task correctly, and to self-correct themselves if necessary (Montessori 2014). In the first version of the illustrated cards I made for the basic human needs layer 1, the initial designs didn't connect together seamlessly, which the children immediately noticed and found frustrating. So in the following version, I redesigned the cards so they made a seamless pattern. The children were much happier being able to see if they'd laid the cards out correctly and self-correcting their work when necessary.

Another key principle of the Montessori method is to allow the child to direct its own learning and **work independently** of a teacher. In the second layer of the box I created a set of visual instruction guides for the children to conduct the experiments by themselves. I paid attention to the copy in the book to ensure most 6 year olds were able to read the directions independently. I took photos of each step of the experiment so the children were able to see exactly what they needed to do next. I observed the children completing these experiments and noticed how much they enjoyed being able to do the whole activity by themselves.

Montessori believed that the materials we provide to children should be **aesthetically beautiful** and appealing, to aid in the child's desire to learn: she states "beauty in the school invites activity and work" (Montessori 1956, cited in: Lillard, McHugh 2019: 8). In the third layer of the climate box I'd tried to create a set of beautiful, perfectly-formed, aluminium pyramids, but quickly learnt that the rigid structure of the pyramids didn't allow the children to bend the aluminium and experience one of its key properties: flexibility. I learnt that the true beauty of a learning material is not just how it looks, but how the child is able to engage with it and manipulate it.

Differences between the state school and the Montessori school

Whilst the difference between the two school environments was not the primary purpose of this study, for which an entire piece of research could be dedicated, I did notice some differences in how children were able to engage with the materials due to the learning processes and cultures of these different environments.

In the **multi-age class** at the Montessori school I quickly noticed how the older children seemed to instinctively and happily teach and support the younger children in the group. In contrast, at the state school where all the children were the same age, there was more debate and comparison over who did what and when. As the facilitator, I did far less guiding at the Montessori school and the activities seemed to flow more easily, even though it was a much larger group.

This sense of flow was also supported by the fact that the Montessori school followed a 3 hour **work cycle,** whilst at the state primary school the day was organized into a sequence of shorter learning periods of just over an hour each. It was easier to run the sessions at the Montessori school as I was able to let the children flow at their own natural pace, spending more time on an activity when needed.

An important factor affecting the two different groups was the radically different **size of the schools**. The kids at the state school were part of a class of 28 children, within a school of about 450 pupils, so a stricter schedule was required to accommodate all the different needs of the students at the school, such as sharing one playground and cafeteria. At the Montessori school the 13 children I conducted my research with, made up the entire primary school meaning it was far easier to be more flexible with the structure of their day.

Whilst the Montessori school was better set up to nurture the needs of each individual child, the **culture** at this large state school supported the children in different ways. For example, they were encouraged to stand up in front of the whole school at assembly and tell everyone about the project. The children were initially nervous, but as they spoke their excitement about what they'd learnt and their confidence grew. Challenges like this, when managed right, can strengthen kids and prepare them for the variety of experiences they are likely to encounter in the future. There was an overall feeling at the state school of belonging to a large diverse community. The Montessori school was a smaller vibrant community, notably restricted to those who could afford to pay **tuition fees**.

Conclusions

The role of designer as teacher

I wore many different hats throughout this project; as a designer imagining and making things, as a teaching guide planning and facilitating sessions, and as a researcher observing and evaluating. I had a tendency to make the prototype first and think about planning the lesson next. This meant I'd often end up looping back to the ideation phase to add a set of cards

or instructions to the material so they could be used effectively. I quickly realised a lesson planning phase was missing and needed to be added to my iterative design process like this:

Discovery > Definition > Ideation > **Lesson Planning** > Prototyping > Testing > Evaluation.

By bringing the designer and teacher mindsets together, I gained a deeper understanding of the role of teachers and their needs. To create effective learning experiences and materials for children, it's important to work as closely with the teachers as with the children, as the facilitation of the materials is essential for their success.

A curriculum for climate change

By creating a system to simplify and organize the complex topic of climate change, I was able to identify the smallest number of components needed to explain the topic, laying the foundations for a curriculum in this area. I was very aware that the 5 short sessions I did with the children, one session for each layer of the box, would have been more effective with more time. Ideally we would have covered one element per day, one layer per week and the whole topic over the course of half a term. The topic of climate change is huge and constantly evolving, so the system could also be expanded in both breadth and depth as new areas emerge in this space.

Different materials for different purposes

I explored many different types of materials for the different parts of the climate box, some of which were more effective than others, such as the experiments used to learn more about fossil fuels in layer 2, and the drawings used to show ideas in layer 5. Whilst the children were clearly engaged by the wide variety of different materials I shared, I think my biggest learning as a designer was that the most effective learning materials expressed their primary purpose in their design and utility. For example, the folded paper fortune teller was more of a novelty to the kids, distracting them from actually learning about fossil fuels, which was the goal. But imagine if the fortune teller's primary purpose had been to explain the difference between a 2D object and a 3D object, then folding a flat piece of paper into a 3D shape would have been a very effective learning material. So the learning materials that reflected and behaved in a way that brought the content to life, were more effective at teaching the learning goal.

Developing the Montessori approach

Maria Montessori has been a huge source of inspiration for the materials I designed, with her approach and principles providing a foundation for my thinking process and resonating with my own instincts as a designer. Today there is a clear need to provide materials that support the teaching of climate change, and given the speed at which the climate is now changing,

the goal must be to reach the largest number of children as quickly as possible. But I have noticed a tension with those in the Montessori community who are committed to following her approach exactly as she described it, and others less attached to her ideals. As stated by Lillard and McHugh: "Beyond not omitting any material, neither does an authentic Montessori classroom add material, such as worksheets or commercial toys, to the sets developed by Dr. Montessori" (Lillard, McHugh 2019: 7). This implies a rigidness to the approach, tying it firmly to a set of ideas developed over 100 years ago, before climate change was even recognized?

I strongly believe that more collaboration between different educational approaches would enable educators and designers to improve the effectiveness of their teaching and the design of new materials. We all have the ability to collaborate and develop, to learn from the past and change the future. Afterall, ultimately collaboration is the only way we still have the potential to stop global warming.

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The impact of successive Montessori programmes on cognitive achievement

Summary

The Montessori Method of Education, renowned for its child-centred approach, is divided into three key sub-programmes corresponding to distinct developmental planes: the Primary Programme (Casa) for ages 0–6, Cosmic Education for ages 6–12, and Erdkinder for ages 12–18. Despite numerous studies attesting to the superiority of Montessori over other educational systems, research exploring the cumulative impact of successive Montessori programmes on cognitive achievement remains limited. This study addresses this gap by evaluating the cognitive outcomes of students who have experienced varying durations of Montessori education. This empirical research, derived from a 2017 doctoral dissertation at the Xavier University/Ateneo de Cagayan, Philippines, utilized a longitudinal dataset from The Abba's Orchard School in Bukidnon. The study spanned academic years 1999 to 2015, involving 105 students who graduated from the school's adolescent programme beginning from 2007–2008. Students were categorized based on their exposure to Montessori programmes: Group A (37 students) attended all three programmes (Casa, Cosmic Education, Erdkinder), Group B (48 students) attended Cosmic Education and Erdkinder, and Group C (20 students) attended only Erdkinder. Cognitive performance was measured using Grade Point Averages (GPA) and College Admission Test (CAT) results from top Philippine universities. The findings demonstrated that previous Montessori experience significantly enhances cognitive performance. Group A students, who attended the full spectrum of Montessori programmes, achieved the highest GPAs (92–93), followed by Group B (90–91), and Group C (87–88). Statistical analysis revealed highly significant differences in GPA scores among the groups (alpha ≤ 0.01, P = 0.000 to 0.001). Additionally, the number of Montessori Programmes Attended (MPA) and Erdkinder Academic Rating (EAR) were positively correlated with CAT success. Group A had an 89% pass rate for at least one CAT, compared to 52% for Group B and 35% for Group C. Further analysis indicated that each additional Montessori programme attended increased the likelihood of passing a CAT by 3.5 times, while a unit increase in EAR enhanced CAT pass odds by 28 times. The results underscore the importance of successive Montessori Programmes Attended (MPA) in fostering cognitive development. Students who progressed through the complete Montessori spectrum exhibited superior cognitive outcomes and higher success rates in college admissions. These findings align with Dr Montessori's philosophy that education should be an integrated continuum, where each developmental stage prepares the child for the next. This study provides robust evidence supporting the efficacy of the Montessori Method in enhancing cognitive achievement. The significant cognitive benefits observed in students with extensive Montessori exposure are advocates for the continuity of Montessori education across all developmental planes. Future research should explore broader samples and additional outcomes to further validate these findings.

Introduction

The primary objective of the study was to investigate whether attending Montessori education has a measurable impact on cognitive performance in subsequent developmental stages, including the adolescent's preparation for university life. Through this rigorous examination, the author aimed to contribute valuable insights into the effectiveness of the Montessori Method and its role in shaping well-developed individuals cognitively. The study aimed to address two primary questions: firstly, "How will a Montessori student cognitively perform at the end of a whole spectrum Montessori education?", and secondly, "How will the children do after Montessori?" As a corollary to this, will the learner be able to hurdle stringent qualifying examinations given by top-tier universities? Will the length of exposure in the Montessori Prepared Environments have a significant impact on the student's cognitive achievement? Will it matter if the student starts in Primary (preschool), in Elementary, or in Erdkinder (high school)?

The findings revealed compelling conclusions: Students commencing their education in Primary exhibit superior cognitive performance in both Elementary and Erdkinder, and there are substantial academic benefits linking comprehensive Montessori education to success in competitive CATs.

Background

The Montessori Method's global impact is substantial, with approximately 15,763 Montessori schools worldwide, including 9% public (Debs 2022). AMS counts the number of Montessori schools in the US at approximately 5,000, with 570 public Montessori schools serving about 125,000 children (AMS 2024). Innovators in various fields have claimed the method influenced their thinking and creativity. Forbes linked the creation of Amazon and Google to Montessori, as their founders received early education from Montessori schools (Denning 2011).

Numerous scientific studies have assessed the efficacy of the Montessori Method in enhancing student performance. Several studies suggest positive outcomes, even when students were exposed to the method years prior to when the studies were conducted. For instance, a 1983 study revealed that males who attended Montessori preschool performed better in reading and mathematics, an advantage persisting until the completion of sixth grade (Miller,

Bizzell 1983). Another study affirmed that participation in a Montessori programme from ages three to eleven was linked to significantly higher standardized test scores in mathematics and science during high school (Dohrmann et al. 2007). Additionally, children exposed to Montessori education for three to four years scored higher in self-esteem and standardized tests during their early elementary years than their non-Montessori counterparts.

A 1999 dissertation showed an increasing advantage of Montessori children in Maths and Reading over their non-Montessori peers, becoming evident during the second year and widening as they progressed in elementary education (Corry 2006). Lillard and Else-Quest's study comparing Montessori and conventional preschool education showed higher academic achievement, particularly in maths and executive function, along with advanced social skills and empathy among Montessori students (Lillard, Else-Quest 2006). A 2011 follow-up demonstrated heightened executive function among Montessori children, indicating superior mental and physical health capabilities (Diamond, Lee 2011).

Montessori education emphasizes independence and self-regulation, leading to higher levels of these traits. Montessori believed the goal of the teacher should be to guide the child towards independence, aiming for the point where "the children are now working as if I did not exist" (Montessori 2007b: 257). Among adolescents, Montessori students exhibited increased energy, heightened focus, and intrinsic motivation in school tasks. These findings highlight the method's positive impact across developmental stages, fostering academic success and well-being.

While these studies support the effectiveness of the Montessori method in fostering optimal development, most are confined to preschool and elementary exposure. Many Montessori schools offer only preschool, and some extend only to elementary levels. Few provide the Erdkinder programme for adolescents, resulting in a scarcity of high-fidelity Montessori campuses covering the complete spectrum. Several factors contribute to this research gap. Firstly, the programme's design and relative "newness" make comprehensive studies challenging. The first Erdkinder setting prototype, the Hershey Montessori Farm Campus in Huntsburg, Ohio, started operating only in 2000. Additionally, Dr Maria Montessori's framework for the adolescent programme is less detailed compared to the Primary and Elementary programmes.

Setting up a Montessori Adolescent environment involves significant logistical and financial challenges, including land costs for a farm environment in urban or suburban settings, availability of specialists to teach more specialized subjects, and limitations on student numbers that will ensure that significant roles are played in the adolescent community. Consequently, few Montessori schools embrace the adolescent programme, and many elementary graduates' transition to conventional schools where they continue to excel academically.

There is also a prevailing societal belief that secondary education primarily serves as preparation for university. Even parents of Montessori children tend to prioritize reputable high schools known for their graduates' success in gaining admission to top-tier universities. This mindset hinders acceptance of the Erdkinder programme, as parents seek assurance

that their adolescents will succeed in university – a proof the Erdkinder programme has yet to conclusively establish.

The lack of comprehensive empirical studies within the Montessori spectrum has led to parental uncertainty about the Erdkinder's long-term value. Committed to providing holistic education and addressing the lack of research on secondary Montessori schooling performance, the author – a mother of four Montessori-educated children and co-founder of The Abba's Orchard School – embarked on an empirical study. This study aimed to reassure herself and the school's parent community about the Montessori Method's effectiveness. As a Montessori specialist trained across all four levels of AMI teacher training programmes for children from birth to 18 years old, the author recognized the importance of scientifically validating the school's pedagogical approach. Instead of relying solely on anecdotal evidence, she sought empirical proof that the Montessori method significantly contributes to students' optimal development. This resulted in a three-hundred-page doctoral dissertation entitled *The Montessori Education Program: Its Impact on Cognitive Achievement* (Barrameda 2017), discussed in this article.

Theoretical Framework

The theoretical framework of this study is rooted in four fundamental Montessori theories: The Planes of Development, the Human Tendencies, the Sensitive Periods, and the Montessori Prepared Environments. These theories interweave to form a cohesive and dynamic approach to education. Recognizing the plane-specific characteristics and intrinsic human tendencies and sensitivities makes it possible to create environments that naturally support and enhance learning. Hence, the concept of the Montessori Prepared Environments, where meticulously designed settings cater to the developmental needs and tendencies of children at each stage. This interplay ensures that education is not only developmentally appropriate, but also intrinsically motivating and supportive of the child's natural growth trajectory.

The *Planes of Development* theory underscores distinct human development stages, emphasizing that each stage has unique psychological needs and potentials requiring unique approaches. Montessori articulated the key role of childhood experiences in adult formation, stating, "The adult is the result of a child. Every adult is the achievement of a grown-up child; the causes of good or of evil in the adult must all be sought in the very short period of the child's growth" (Montessori 2014: 85). Montessori articulated the key role of childhood experiences in adult formation. She wrote, "A man does not just happen; he does not just grow like a flower. A child does not act as an adult. We apply our energies, our maturity, to do something, but a child acts in accordance with nature in order to construct a man" (Montessori 2012: 136). Montessori emphasized the need to recalibrate our views on how to educate the young as she said, "Our aim is to study the child from this new point of view. With this change in our hearts we will want to study him in all his different

phases, to study all his miracles, to realize how man reaches the stage of man through the child that constructs him" (Montessori 2012: 6).

In the first plane (0–6 years), children possess the "Absorbent Mind," an extraordinary capacity to assimilate vast amounts of information and skills from their environment, especially in linguistic acquisition, order, and motor development. This phase involves significant brain development, forming neural pathways through sensory exploration and interaction. The concept of the "powers of the Absorbent Mind" where the very young are able to take in large amounts of environmental information, is supported by contemporary neuroscience. A recent study traces the strength of an individual's Executive Function skills to the neural structures in the infant's brain (Zhao 2022). These findings highlight the importance of providing enriched environments that cater to and stimulate the natural developmental tendencies and sensitivities of young learners.

The second plane (6–12 years) sees children become stable physically, mentally and emotionally. They are capable of hurdling challenging tasks without experiencing fatigue. Their ability to abstract and reason allows them to engage in more complex problem-solving tasks driven by a desire to understand the universe intellectually and socially. Their ability to imagine and reason moves them to explore environments outside the four walls of the classroom. They can synthesize and create in their minds what they eventually concretely produce. These children work in groups towards common goals, propelled by the "herd instinct" and easily follow adult instructions related to group tasks.

During the third plane of development (12–18 years), adolescents undergo significant physical, emotional, and cognitive changes. Brain scans reveal rapid changes in the adolescent's brain, particularly in the amygdala (Santrock 2003), leading to internal conflicts and decision-making challenges. Intense neural pruning results in fatigue and forgetfulness making mastery of presented concepts challenging. Adolescents prefer interacting and working with each other.

The fourth plane (18–24 years) involves young adults solidifying their personal and social identities, applying their education to real-world problems, and becoming independent members of society. After the constructive groundwork of shaping the physical, mental, emotional, moral, economic, and spiritual being of the individual has taken place in the first three developmental planes, this fourth phase serves "a time of life when the individual can develop the spiritual strength and independence for a personal mission in life." This plane, if built upon earlier nurturing environments, can become a place of calm where the individual gains full control of his faculties (Grazzini 2004).

Montessori emphasized the importance of independence in optimal development, stating, "The child's conquests of independence are the basic steps in what is called his 'natural development'. In other words, if we observe natural development with sufficient care, we see that it can be defined as the gaining of successive levels of independence" (Montessori 1949: 123). She described three levels of independence achieved in the successive Montessori prepared environments: physical, mental, and economic independence. Each level builds upon the previous one, forming a foundation for further development. In Casa,

he learns to coordinate and refine his movements which help him acquire the necessary skills needed for him to navigate and explore his surroundings with ease and confidence. This tendency to explore comes at a time when the child's mind is absorbent exhibiting an effortless ability to concentrate. Allowed with the independence to choose, the child uses his hands to explore the Montessori materials and learns on his own how to figure them out and master them. The brain development that happens in the first plane provides the foundation when the child enters elementary.

In elementary, the child exhibits the ability to inquire and use his imagination. He naturally asks, "why, why not, and how come?" While developing mental independence, the child also becomes socially and morally aware – he achieves moral and social independence.

In the Erdkinder prepared environment the child, now an adolescent, explores his evolving sense of dignity and justice. Montessori described this developmental stage as "the 'sensitive period' where there should develop the most noble characteristics that would prepare a man to be social, that is to say, a sense of justice and a sense of personal dignity" (Montessori 1994: 60). The farm environment provides a venue for production and exchange, the economic framework of the adult society the adolescent will next enter into. The student explores what can be called a laboratory of adult life as he progresses to achieve economic independence.

The theory of **Human Needs and Tendencies**, though not explicitly defined by Dr Montessori, refers to innate, universal human traits guiding individual development and behaviour. It was her son Mario who wrote extensively on the human tendencies and how Montessori Education meets these natural propensities (Montessori 1956). These tendencies, when respected, lead to the continual adaptation and development of the individual. They serve as intrinsic powers which guide individual human development and motivate individual human behaviour – in a particular direction and to particular ends. When the human tendencies are respected and allowed to guide the person, their results are: the formation and continual development of the individual personality, and the individual's continual adaptation as a person of his time, place and culture (Sackett 2009: 1). These tendencies are exhibited by human beings in various ways depending on the psychology of their age. They operate in concordance with the developmental characteristics and can thus be supported or hindered. Barrameda (2020) tabulated the human tendencies and how they are manifested in respect to the psychological characteristics specific to each of the four planes of development.

Montessori enumerated three basic human needs: food, clothing, and shelter. Humans possess inherent characteristics that help meet these needs, such as orientation, exploration, order, communication, abstraction, concentration, repetition, perfection, exactness, and precision. The tendency to orientate helps the person become familiar with the environment, a necessary factor for self-preservation. The tendency to explore leads the person towards new discoveries. The tendency towards order leads the person to organize and categorize the myriad of information from the environment leading to logical decisions and self-preserving actions.

Also, humans possess innate abilities that enable each one to move towards the environment by building on those that are meant for survival. These tendencies drive man to collaborate and cooperate with others in order to fashion ways or create things that can be used to meet human needs over and above the basic. Montessori referred to these as "spiritual needs" which include music, art, culture, religion, etc. Sackett named the tendencies that empower humans to build on those used for survival as communication, abstraction or imagination, concentration, repetition and perfection, and exactness and precision.

Montessori's theory of **Sensitive Periods** delineates critical phases in children's development, where they exhibit heightened sensitivity to specific environmental stimuli. During these heightened sensitivities, also referred to as "critical periods," "plastic periods," or "primetimes," the senses are attuned to the specific aspects of the environment needed to satisfy the needs of the brain (Helfrich 2011: 64).

From birth to age 6, children are sensitive to movement, language acquisition, and orderliness. During elementary years (6–12), further exploration, social interactions, moral development, and imagination and reasoning are focal points. Adolescents (12–18) experience sensitive periods for identity formation, fairness, justice, and the dignity of work.

The cornerstone of the framework, the **Montessori Prepared Environments** theory, involves designing educational spaces and activities corresponding to developmental needs and tendencies at different stages. These environments implement the Primary programme in Casa Dei Bambini for ages 2.5–6 years, the Cosmic Education programme in two Elementary environments for ages 6–9 and 9–12 years, and the Erdkinder programme in the Adolescent Farm Campus for ages 12–15 years. Schools without access to a farm set up an Urban Contribution. The Senior High School curriculum for ages 16–18 aligns with national Department of Education requirements.

These Prepared Environments offer a three-year multi-age grouping to stimulate social interactions that reinforce cognitive learning. Uninterrupted three-hour work periods are observed to encourage the exercise of maximum effort independent and collaborative work in doing the activities. The main role of the teacher is to link the child to the materials by showing their use and then leave him to construct himself. Except in The Erdkinder, where work revolves around the Occupations Projects, Montessori designed materials abound in the environments and are placed where children can freely use them as their interests lead them to the apparatus encouraging the children to naturally move and collaborate.

Dr Montessori believed that aligning learning with innate tendencies fosters spontaneous learning characterized by focused attention and deep concentration, leading to profound understanding. Echoing Montessori's Absorbent Mind concept, recent research reveals that rapid neural synaptic formations are linked to hands-on experiences in well-prepared environments. A 1996 Chicago conference highlighted the critical role of early care and nurture in fostering strong neural development and enhancing educational outcomes. The convenors underscored the interplay between nature and nurture, stating that "early care and nurture have a decisive and long-lasting impact on how people develop, their ability to learn, and their capacity to regulate their emotions" (Shore 2003: x). Focusing on the rapid

growth of neural synapse during the first three years of life, which leads to a highly dense brain, the conference emphasized the importance of experience: "those synapses that have been activated many times by virtue of repeated experience tend to become permanent; the synapses that are not used often enough tend to be eliminated" (Shore 2003: x).

The Erdkinder Prepared Environment allows for real-world experiences that help adolescents mitigate the impact of rapid neural pruning, making learning more effective and meaningful. Side-by-side mentoring by adults provides essential guidance and support, fostering emotional regulation and resilience, empowering adolescents to navigate complexities with confidence and self-awareness. Eckert, in her book, Maria Montessori's Erdkinder, discussed extensively various forms of implementation of the plan for adolescents in very diverse environments including those that have just been started to those that are already established through years of practice (Eckert 2024).

Fundamentally, the longitudinal study is built on the premise that the Montessori Method, grounded in these theories, provides an educational framework uniquely attuned to individuals' natural developmental trajectories. The interplay of the four fundamental Montessori theories creates a holistic and dynamic framework that optimally supports children's natural growth and learning processes. Each theory uniquely contributes to understanding and facilitating child development. This integrated approach ensures that Montessori education remains responsive, individualized, and deeply attuned to each child's holistic development, ultimately preparing them for lifelong learning and adaptation in a complex world.

Statement of the Problem

This study determined the impact of the Montessori Educational Programme on learners' cognition as measured by performance in the Primary Programme, the Montessori Cosmic Education Programme, and the Erdkinder Programme, as well as in CATs given by the top three universities in the country. The specific problems addressed were:

1. Problems 1−3 looked at learners' cognition levels in each programme's learning areas.
2. Problem 4 compared the Cosmic Education Programme performance of those who attended both Primary and Cosmic Education Programmes with those who attended only the Cosmic Education Programme.
3. Problem 5 examined adolescents' performance in Erdkinder learning areas based on the length of exposure to the Montessori Programme.
4. Problem 6 investigated the impact of the number of Montessori programmes attended and the Erdkinder Academic Rating on adolescents' CAT performance.

Problems 1–3 are hypotheses-free. The Null hypotheses for Problems 4 and 5 state no significant difference in performance regardless of earlier programmes attended. Problem 6 states that the number of Montessori programmes attended and the Erdkinder Academic Rating have no impact on CAT performance. A 0.05 level of significance was used.

Significance of the Study

The study investigated the effectiveness of the Montessori Method on children's cognitive development, offering significant benefits to educators, parents, curriculum designers, evaluators, and school officials. Empirical data supporting Montessori principles provide detailed insights into experiential aspects. The study offers evidence-based information to parents for informed decisions about their children's education, affirming the method's effectiveness. Curriculum designers and evaluators can use comprehensive research to guide programme development and assessment. School officials, including those at Abba's Orchard School System, can validate and standardize Montessori programmes, ensuring consistent quality across campuses. Overall, the study filled a crucial gap in quantitative research on Montessori education, supporting its broader application and acceptance.

Scope and Limitations of the Study

This study focused on learner cognition in Montessori Educational programmes from Casa to Erdkinder to determine aptitude in standardized university entrance exams of the University of the Philippines (U.P.), the Ateneo de Manila University (ADMU), and the De La Salle University (DLSU). Conducted at the Alwana and La Granja campuses of The Abba's Orchard School, the research is limited to these sites as they are the only campuses offering the complete Montessori Adolescent Programme with a prescribed farm setup. No boarding facilities or permanent hostels are available as components of the Erdkinder Programme. Other Montessori schools could not be included owing to the lack of comprehensive programmes and challenges of establishing a farm environment in urban areas.

The study includes graduates from school years 2007–2008 to 2014–2015, excluding those with cognitive challenges or intermittent attendance. Learning areas studied are Practical Life Exercises, Sensorial Education, Language, and Mathematics for the Primary Programme; Mathematics, Geometry, Geography, Biology, History, and Language for the Cosmic Education Programme; and Self-Expression, Character Development, General Education, and Physical Development for the Erdkinder Programme. Cognitive assessment is defined by performance in Montessori programmes and CATs.

Research Setting

The research was conducted at The Abba's Orchard School, a 25-year-old Montessori school system in the Philippines. Founded in 1998, it has grown to 14 campuses in 11 cities, with a 15th planned for 2025. Four campuses feature Adolescent Farm Environments. The school, serving about 1400 students, offers comprehensive Montessori education based on AMI

set standards for ages 2.5 to 18. The Erdkinder Programme began in 2004, with the first graduates in 2008. The La Granja campus has offered the Erdkinder Programme since 2006.

Research Design

The study employs a longitudinal and descriptive research design to examine past learning experiences and their impact on cognitive development and academic performance in higher education. This approach enables the observation of changes and trends over time, offering valuable insights into the enduring impact of Montessori education on cognitive achievement. Using learners' ratings, the study provides a comprehensive description of cognitive levels across Primary, Cosmic Education, and Erdkinder programmes. Additionally, it assesses learners' performance in the CATs of the U.P., the ADMU, and the DLSU.

Unit of Analysis, Respondents, and Sampling Procedure

The 105 respondents of this study, aged 15–17 years old and predominantly from middle to upper economic tiers, were selected from the graduating students of the Abba's Orchard School in its La Granja campus in Bukidnon, spanning six school years from 2008–2009 to 2014–2015, beginning with the batch that had students who attended the Primary Programme. The respondents were grouped according to the programmes they attended as shown in Table 1.

Table 1. Distribution of Adolescents According to Programmes Attended

Group	Programmes Attended	Number of Students
A	Primary, Cosmic Education, Erdkinder	37
B	Cosmic Education, Erdkinder	48
C	Erdkinder	20

Source: Barrameda (2017: 246).

To reduce bias from varied educational exposures, exclusions included two students who were professionally diagnosed with cognitive challenges and five returnees who did not complete Elementary. Additionally, three students were also excluded as they refrained from participating in any college admissions exams used in the study.

Data Source, Scoring Guidelines, and Statistical Procedure

Data Source

Progress Report Cards (PRCs) of the 105 respondents were collected from the last year of the learners in Primary, the end-of-Grade 6 in Elementary, and the end-of-4th Year in Erdkinder. They were grouped according to the earliest programme they attended. All 105 respondents had records of the number of college admissions tests they took from the UP, ADMU, and DLSU and whether they passed or failed the tests.

Scoring Guidelines

Numerical representations were used in the study in order to perform statistical analyses on the performance ratings gathered through the students' PRCs. The descriptive ratings used in the Primary and Cosmic Education Programmes were transmuted to their numerical equivalents. The numerical ratings used in the Erdkinder Programme already reflected the numerical grades of the adolescents and did not have to be transmuted. The transition from a descriptive type to a quantitative type of rating in Erdkinder is justified by the school in order to prepare the adolescents for the kind of evaluation done at the tertiary or university level.

Statistical Procedure

The statistical tools employed for data analysis and interpretation in this study included descriptive statistics and various tests of comparison or differences. Descriptive statistics were used to quantify learners' ratings obtained from performance in different Montessori Programmes (Primary, Cosmic Education, and Erdkinder) and the CATs. Data frequencies, percentages, means, and standard deviations were calculated for ratings across all learning areas.

For tests of comparison or differences, the Mann-Whitney U Test was utilized to compare the Cosmic Education performance of learners who attended the Primary Programme with those who did not, with the significance level set at alpha = 0.05. The F-Test was used to compare and differentiate the Erdkinder performance among learners who completed the full Montessori Programme, those who attended only the Cosmic Education and Erdkinder Programme, and those who attended only the Erdkinder Programme, also with significance set at alpha = 0.05. Additionally, logistic regression was employed to determine the model for Problem 6, aiming to ascertain the extent to which learners' performance in CATs of UP, ADMU, and DLSU is explained by their Erdkinder Academic Rating (EAR) and the number of Montessori Programmes Attended (MPA), with the level of significance set at alpha = 0.05.

Presentation of Data and Summary of Findings

Considering the inquiries made in this study, this section begins with an analysis of learner profiles based on the Montessori programmes attended (Problems 1–3). To investigate the impact of the Primary programme on the performance of learners in the Elementary programme, the study compared the Cosmic Education performance of learners who attended the Montessori Primary Programme with those who did not (Problem 4). To examine the impact of the Primary and Elementary programmes on the performance of learners in the Erdkinder Programme, a comparison was made among learners grouped according to the length of exposure to the Montessori Programmes (Problem 5). Finally, to explore how learners perform cognitively outside of Montessori, their performance on the college admissions tests of top-tier tertiary institutions in the Philippines was analysed (Problem 6).

Problem 1 evaluated the academic profile of 37 learners who participated in all stages of the Montessori Educational Programmes. The learners achieved an overall mean of 2.71, described as mastered, with a standard deviation of 0.25 indicating performance clustering near the mean. Findings show that 86% of learners demonstrated overall mastery in various learning areas, 8% showed strong progress or interest, and 5% displayed normal developmental patterns, with none needing supplementary work.

The Primary Programme features that could have contributed to an uptake in the level of cognition of the learners at the end of the programme include: 1) the Primary Programme's age-appropriate learning concepts for 3–6-year-olds allowing them to work at levels appropriate to their cognitive faculties; 2) the Casa dei Bambini's "Prepared Environment" addressing cognitive, affective, and psychomotor needs; 3) freedom in work choice and execution; 4) Montessori Materials providing "Higher Order" learning experiences; 5) materialized abstraction feature of the materials where abstract concepts are brought to concrete manipulative forms; 6) the "three period lesson" presentation approach ensuring full concept grasp; 7) the motivating "flow experience" enhancing concentration and focus in tackling even more complex cognitive tasks; and 8) the three-year programme's length of the learner's exposure encouraging repetition and practice that leads to conceptual mastery.

Problem 2 examined the cognitive performance of 85 learners in the Cosmic Education Programme, focusing on various learning areas. The learners achieved an overall mean of 2.01, described as secure, with a standard deviation of 0.12, indicating performance ratings clustered near the mean. Most learners (94%) were secure, 6% were progressing, and none needed support. High performance ratings may be attributed to the "prepared environment" features. Indoor spaces provide about three-square meters of workspace per child, and outdoor environments accommodate larger projects. Appropriately sized furniture encourages group work for 2–4 children, though individual work is also an option. The room is equipped with scientifically crafted Montessori Materials, and school supplies are readily available. These provisions and the flexibility available to the children encourage independent self-expression, resulting in a high degree of focus and concentration and a deeper understanding of learning concepts. The Programme also encourages exploration

outside the classroom through "going-out" activities, allowing interaction with community experts. Overall, the findings highlight the Cosmic Education Programme's effectiveness in fostering high cognition levels across diverse learning domains, with most learners demonstrating mastery in key academic areas.

Problem 3 investigated the profile of 105 adolescents enrolled in the Montessori Erdkinder Programme, including 20 who joined The Abba's Orchard School only in high school. The adolescents obtained an overall mean of 2.41, described as secure, with a standard deviation of 0.24, indicating performance ratings clustered near the mean. About 17% of the adolescents showed mastery, 76% were secure, 8% adequate, and none minimal. High performance ratings are attributed to the programme's focus on life-long skills rather than test preparation. In Montessori, tests indicate comprehension levels, guiding teachers on the need for additional presentations. Montessori, a physician, recognized the internal disequilibrium in adolescents due to rapid physiological changes and recommended attention to diet for proper physical development. The Abba's Orchard School dedicated four hectares in the Bukidnon mountain ranges for its Adolescent Farm Campus, providing clean air and a healthy diet. Adolescents have the freedom to choose and direct their activities, with professionals hired to conduct classes. Older children gain real-life experiences through Practicum work in community organizations. The school collaborates with international Montessori organizations, offering adolescents opportunities to participate in global conferences on socio-environmental issues.

Problem 4 examined the difference in Cosmic Education performance between two groups: Group A (37 learners, attended both Montessori Primary and Cosmic Education Programmes) and Group B (48 learners, attended only the Cosmic Education Programme). The groups differed significantly in Mathematics (U value = 1108*), leading to the rejection of the null hypothesis. Group A performed significantly better in Mathematics, indicating that learners who experienced both Primary and Cosmic Education Programmes demonstrated better proficiency in Mathematics. U-statistics for Geometry, Geography, Biology, History, and Language showed no significant difference, suggesting similar levels of understanding in these subjects. Overall, Group A performed slightly better, but the difference was small.

Problem 5 tested the Erdkinder performance of 105 adolescents divided into three groups: Group 1 (37 attended Primary, Cosmic Education, and Erdkinder Programmes), Group 2 (48 attended Cosmic Education and Erdkinder Programmes), and Group 3 (20 attended only Erdkinder). Results showed significant differences in overall performance among the three groups. Specifically, significant differences were found in Character Development (F = 9.99**) and General Education (F = 7.85**), leading to the rejection of the null hypothesis of non-significant differences in these areas. These outcomes highlight variations in performance across academic subjects, which serve as indicators of cognitive abilities and measures of intelligence in schools.

Problem 6 examined the "Pass or Fail" ratings of adolescents in the CATs of the top three Philippine universities (UP, ADMU, DLSU) and compared these with their EARs and the number of Montessori Programmes Attended (MPA). The same groupings from

Problem 5 were used. The Wald statistics indicated a highly significant contribution (p < 0.01) of the Number of Montessori Programmes Attended and the Erdkinder Academic Rating to passing any of the CATs. Results showed that each additional year in Montessori Programmes increased the chances of passing, with an odds ratio of 3, meaning a learner is three times more likely to pass a CAT with each additional programme attended. For EARs, the findings showed an odds ratio of 28, indicating that a unit increase in Erdkinder Academic Rating makes a learner 28 times more likely to pass any CAT, when the number of MPA is constant. Thus, a student with a higher EAR is significantly more likely to pass one or more of the top three CATs.

Further data analysis shows the impact of the number of programmes attended on the likelihood of passing the college admission tests: 30% for those who attended the Erdkinder programme only; 60% for those who attended both the Cosmic Education and the Erdkinder programmes and 90% for those who attended all three Montessori education programmes.

Now, with empirical proof, the earlier questions can confidently be answered: "How will a Montessori student cognitively perform at the end of a whole spectrum of Montessori education?" The answer is: **They will be confident, resourceful, creative, and knowledgeable.** Secondly, "How will the children do after Montessori?" The answer is: **The children will confidently excel and contribute to better their communities.** Corollary to this, will the learner be able to hurdle stringent qualifying examinations given by top-tier universities? **Yes, significantly.** Will the length of exposure in the Montessori Prepared Environments have a significant impact on the student's cognitive achievement? **Yes, significantly.** Will it matter if the student starts in Casa? **Yes, significantly.** In Elementary, or in Erdkinder? **Yes, significantly but not as much as when they start in Casa.**

Conclusion

The study highlights two pivotal insights. Firstly, it underscores the enduring influence of the Montessori Primary Programme on cognitive performance, extending into later developmental stages and success in CATs. Secondly, it emphasizes the integral value of traversing the complete Montessori spectrum, from Primary to Elementary and Erdkinder, nurturing children in self-regulated environments that prioritize holistic development. It can be confidently asserted that attending all three Montessori Programmes – Primary, Cosmic Education, and Erdkinder – significantly impacts cognitive development.

Montessori emphasized the importance of viewing education as an integrated whole, with each developmental level building upon the previous one, nurturing the energies that drive towards the succeeding periods of life. Montessori stated that if "the formation of man" becomes the basis of education, the coordination of all schools from infancy to maturity is a first necessity, recognizing that human development is a unified, interdependent process (Montessori 2007a: 80).

She proposed the importance of sustained purposeful work in fostering development, stating, "The children find joy, satisfaction, and exhilaration in work. More work seems to produce more restfulness… Work thus becomes the sine-qua-non of growth, development, efficiency, and happiness" (Montessori 2013: 87). Montessori's approach is considered an "aid to life," affirming her belief in the transformative power of education: "This is the hope we have – a hope in a new humanity that will come from this new education, an education that is a collaboration of man and the universe that is a help for evolution" (Montessori 2019: 46).

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NARRATIONS AND PRACTICES

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Empowering and cherishing humanity – Barbara Isaacs, The President of Montessori Europe, in conversation with Jarosław Jendza

Jarosław Jendza [JJ]: Thank you, Barbara, for your time. I would like to ask you a few questions related first to your Montessori story. So today you are the president of Montessori Europe, but how come that you are where you are today?

Barbara Isaacs [BI]: Well, I always feel it's a little bit by accident. It was never, never by design. I never set myself to do what I actually achieved. But at the same time, I have always found it difficult to say no when people ask me to do something.

And I think those two things kind of fit together, but initially I got introduced to Montessori when I first came to England to look after a two-and-a-half-year-old girl who went to a Montessori school. I never heard about Montessori. I was amazed that she could read by the age of four.

Something that I still struggle with at the age of 75 – is reading aloud to people. So, I was amazed by this approach. Her dad died when she was about 12. He left me a little bit of money and I thought, how should I spend it? He really loved children. And I thought I will go and train as a Montessori teacher. I had a very fancy job at the time running an art gallery in central London and nobody could believe that I wanted to become a nursery school teacher for a pittance, but I felt it was right.

I went for an interview at AMI[1] in London and Ms Patell[2], who was the principal of AMI at the time, was incredibly kind and generous to me. I also went for an interview to

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[1] AMI – The Association Montessori Internationale. Organization founded by Maria Montessori in 1929. The initiative to form AMI was taken at the first International Montessori Congress, which was held as part of the Fifth Congress of the New Education Fellowship held at Kronberg Castle, Denmark. The organization is present in numerous countries all around the world. The main mission of AMI is to "to fulfil the right of children and adults around the world to have access to nurturing, developmentally appropriate, educational environments" (AMI online).

[2] Hilla Patell (1925–2023) joined AMI in 1974. Her interest in Montessori education was first aroused through the counselling and community work that she was involved in during the 1950's: she looked for

Saint Nicholas[3], who were very non-committal, but the atmosphere in the building… the atmosphere for learning felt much better. So, in the end, I decided to go to Saint Nicholas and I absolutely loved the one-year full-time course that I did there. I worked every weekend in a café to be able to afford it. I still think about that year when I studied at St Nicholas as one of the best in my life, because I met new people from around the world, I was learning new things. I didn't agree with everything that I have learned. I questioned… And the questions were not properly answered, because by that time I was 33, I had experienced life and they kind of treated us as if we were teenagers. So… That was a challenge, but the message, the kind of vision that Montessori has for the child, has really resonated with me. And I loved the idea of being in the service of children. And that message has stayed with me throughout my Montessori career.

That's something to do with me as a person, feel it really deeply. And I tried to live with this powerful message – during my training of adults, by setting up a nursery, and now by helping our grandchildren. It's all part and parcel of the same thing and of course, then when our first child was born, a year after I finished my course, I felt so privileged that I had some insight into how to help young children. I felt that I was going to be able to put our daughter on the right path. Of course, that was a very foolish thing to think, because as a parent, you are often wrong, and you could have done things differently but at the time, my Montessori knowledge was a gift to me as a mother.

When St Nicholas asked me to teach the adults it was a great surprise. In the 1980s, in Montessori circles, you got kind of selected to work to teach according to how you behaved

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a Montessori school for her children, and on arrival in the UK in 1960 was soon to enroll as a student and then from 1962 as Montessori teacher at the Maria Montessori Training Organisation, London (MMTO), whose training staff she joined. She led MMTO as Co-Director and then Director of Training until her retirement in 1989. Later she remained available for counsel and mentoring and continued to deliver special lectures to the students, continued examining at AMI examinations across the globe. She gave many workshops and study sessions in various countries. Hilla Patell was elected to AMI's Board and Executive Committee in 1982. She was also one of the first members of the Sponsoring Committee (1977), the committee that was tasked with devising AMI's Training of Trainers programme, which she chaired until 2003. She chaired the Executive Committee from 2000–2004, and additionally took on the responsibility of AMI's presidency from 2004–2005. Source: https://montessori-ami.org/news/memory-hilla-patell. Hilla Patell was particularly interested in the role of observation in Montessori practice. Readers may find this published conversation with Hilla Pattel very inspiring (O'Shaughnessy, Patell 2016: 43–55).

3   Montessori St Nicholas Charity – on 29 March 1954, The St Nicholas Montessori Centre was established as an education trust to represent the continuation of the Training Centre started by Margaret Hompray and Phoebe Child, two former students of Maria Montessori. In 1967, the trustees purchased No. 23 Princes Gate while the co-principals acquired No. 24 and later allowed the trust to purchase it from them. By 1971 the Centre held accredited full-time, part-time and Saturday courses. It also had a Montessori school and facilities for resident students and children. In 1978, the two co-principals retired and moved to America. The leadership of St Nicholas was entrusted to Bridget Birts who served the Montessori community until 1983 and in whose name the Birts Scholarship was founded. In 1998, the London Montessori Centre founded by Lesley Britton and Montessori St Nicholas formed Montessori Centre International, consolidating the work of two Montessori centres (Wikipedia, *Montessori St Nicholas Charity* online).

in the course. It was totally subjective to few people who were running the college. Anyway, I said yes. And that started my training career, teaching one night a week, practical life. And for the first lecture, I prepared and prepared all Christmas holiday and all my notes ran out in half an hour, but always having the materials as a prop is a very useful tool for anybody who wants to be a trainer, who is beginning as a trainer. I see it very differently now. But in those days, it was very valuable to me. The history of St Nicholas college has often been problematic. And so in 1990, I left because there was a lot of tension there. And I was invited to work for Leslie Britton[4] at London Montessori Centre [located at 18 Balderton Street, London W1]. She was a very complex person. When she hired me, she said: "I would like to employ you, but you have to study more." And that was one of the biggest gifts she could have ever given me, because I had a day in a week to follow a university course. Not that my workload got less, but Lesley gave me the time. I needed to learn about how to work with adults. So, I went to do a degree in teaching adults. And I think that was really very important step in my career. Lesley was also the one person who advocated the importance of teaching child development as an integral part of Montessori teacher training. In those days, nobody else did it in England. And without that child development element, you actually cannot understand the value of Montessori and you cannot really fully appreciate many of her insights and inspiration.

The training needs to open the student's mind to other possibilities about what it means to be an educator of young children. Particularly because the discipline of child development is very much a 20th century phenomenon. And whilst I appreciate that much of the information was not available to Montessori when she was developing her theory, for me teaching adults at the end of 20th century, we absolutely could not, deliver Montessori teacher training without understanding the basic principles of child development. To understand the value of what Montessori's intuitive insights into children's development needed to be and still needs to be underpinned by current research and contemporary studies of children. And I think that's really essential for today's teacher training.

When our own children were a little bit older, I was able to set up a nursery with Helen Prochazka[5]. So, I was able to continue, not only to work with adults, but to also learn from children - that integration of training and working with children is essential in early years, because you need to be constantly reminded of the needs of the young child. And they are not static. They are changing and particularly after COVID. This significant global change highlights the value of Bronfenbrenner's ecological system theory and its impact on children's

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[4]   Lesley Britton – Montessori expert, practitioner and author of inspiring publications such as: *Montessori Play & Learn: A Parents' Guide to Purposeful Play from Two to Six* (1996), in which she shows parents how to bring Montessori home.

[5]   Helen Prochazka, PhD – the founder of Montessori Partnership established in 1997.She is a globally known expert in Montessori, with a career in this approach to education spanning 35 years. Having worked at a number of Montessori training institutions, Helen Prochazka set up Montessori Partnership to provide Montessori teaching courses in the UK. Source: Montessori Partnership (online). Helen Prochazka is one of the contributing authors whose studies are presented in this volume.

development[6]. These are some of the important aspects of my Montessori journey, together with studying for my master's in early education under Tina Bruce[7] and Margy Whalley[8]. And finally, when we celebrated the 150th anniversary of Montessori's birth, and I worked

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[6]   Urie Bronfenbrenner (1917–2005) was a Russian-born American psychologist best known for having developed human ecology theory (ecological systems theory), in which individuals are seen as maturing not in isolation, but within the context of relationships, such as those involving families, friends, schools, neighbourhoods, and society. Bronfenbrenner divided the entire ecological system in which human growth occurs into five subsystems that are organized socially: the microsystem, mesosystem, exosystem, macrosystem, and chronosystem. […] When Bronfenbrenner was a child, his father, who was a neuropathologist, often pointed out the interdependence between living organisms and their surroundings. Those concrete examples were expanded into theories about the ecology of human development, and they were further developed during cross-cultural field research, which Bronfenbrenner conducted in places such as Europe, the U.S.S.R., Israel, and China. His work led him to define human development as a lasting change in the way a person perceives and deals with his or her environment. A child is viewed as a growing dynamic entity that progressively moves into and restructures an environment. The environment in turn exerts an influence on the individual, requiring a process of reciprocity between person and environment. Moreover, Bronfenbrenner realized that the developmental process varies by place and time and that public policy affects the development of humans by influencing the conditions of their lives. With American developmental psychologist Stephen J. Ceci, Bronfenbrenner extended his theory to behaviour genetics. They recommended that explicit measures of the environment in systems terms be incorporated, and they proposed the existence of empirically assessable mechanisms – proximal processes through which genetic potentials for effective psychological functioning are actualized" (Gilstrap, Zierten 2024).

[7]   Tina Bruce, Professor – expert in Froebel approach. Author of numerous publications concentrated on Froebelian pedagogy, play and creativity. Tina Bruce trained as a primary teacher at the Froebel Educational Institute, now part of University of Roehampton. She went on to become a Froebelian educator guided by principles that promote a holistic approach to teaching young children. Tina has played an instrumental role in laying the foundations of early education as co-ordinator of the Early Years Advisory Group to successive government childcare UK ministers for 10 years. In 2008, she was awarded a CBE for services to early years education. Her hugely influential articles and books address key Froebelian themes such as literacy, play, and creativity (Froebel Trust, *Tina Bruce Lecture…* online). Readers may find a conversation between Barbara Isaacs, Tina Bruce, and Jannie Nicols very inspiring. It was recorded in 2019, during a series of seminars arranged and delivered at the V&A's Future Museums: Play and Design Conference on 19 November 2019.This film documents a conversation between the three experts who share some of the commonalities and unique aspects of the three approaches to early childhood education (Froebel Trust, *Froebel, Steiner…* online).

[8]   Margy Whalley – educational expert. She has managed multi-disciplinary early years services in Brazil, Papua New Guinea and England. She was founding Head of the Pen Green Centre for Under 5's and their families and has worked there since 1983. She has an MA in Community Education, completed a PhD which focused on Leadership in Integrated Centres. She was seconded to the Open University where she wrote course materials for parents wanting to increase their knowledge and understanding of child development. Margy was involved in the development of the Early Excellence Centre programme. She was appointed to the advisory board of the National Early Excellence Evaluation programme and the Early Years Advisory Group for the DfE. She has also worked as an adviser to Margaret Hodge as Minister for Children and Families directorate. In 2008 Margy was asked to chair the National Reference Group for Children's Centres. She is Director of the Research, Development and Training Base at the Pen Green Centre as well as the Centre for Children and their Families and is involved in research, training, and consultancy work in the UK and in relation to policy transfer and integrated services in Germany, Italy, Portugal, New Zealand, Australia and Malaysia (LinkedIn online).

with a group of Montessorians from around the world who were not affiliated with specifical training organization, but who wanted to celebrate the Montessori legacy in "Montessori Everywhere."[9] That was an incredible experience. It endorsed for me the reason why Montessorians need to work together, not be separate. There is a value in sharing our experiences. And what Simone Davies[10] achieved by organizing "Montessori Everywhere" has been phenomenal.

And the fact that, at the time, we were able to fundraise for the Black Montessori Education Fund[11] in the United States, was a particular and powerful feature of the initiative. We engaged with over 6,000 educators during the day of celebrations. And it was all done on voluntary basis. It was all done very spontaneously in a very short timescale. And we all worked very hard to make it possible.

In 2020 I accepted the invitation to become the President of Montessori Europe[12] because I couldn't quite see my Montessori career ending by retiring. And I also felt that

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[9] Montessori Everywhere is an organization or rather (as they prefer to be called) a group of Montessori friends around the world who created it to connect, celebrate, and challenge themselves. In August 2020, they joined forces to make an event to celebrate Dr Montessori's 150th birthday and raised over US$20,000 for the Black Montessori Education Fund. From this event ME has become a movement, connecting global Montessori community. Montessori Everywhere is organized by: Andy Lulka of Integrating Montessori, Simone Davies of The Montessori Notebook, Dr Ayize Sabater of the Black Montessori Education Fund, Tammy Oesting of ClassrooMechanics, Barbara Isaacs from Montessori Europe, Gabriel Salomão of Lar Montessori, Ochuko Prudence Daniels from Momahill Montessori School, Nigeria, Sue Pritzker (retired) Head of School at Childpeace Montessori School and supported by: Seemi Abdullah of Trillium Montessori, Wendelien Bellinger from Montessori Musings, D. Ann Williams of Montessori for Social Justice, Miroslava Vlčková of Lead Montessori, and other Montessori friends (Montessori Everywhere online).

[10] Simone Davies – Montessori expert, AMI Montessori teacher with nearly 20 years' experience, owner of Jacaranda Tree Montessori in Amsterdam where she's been running her own parent-child classes since 2008, mother of two young adults raised in a Montessori way, author of the book *The Montessori Toddler* and co-author with Junnifa Uzodike of *The Montessori Baby* and *The Montessori Child* (The Montessori Notebook online).

[11] Black Montessori Education Fund, founded by Dr. Ayize Sabater I, is a bold initiative launched from the energy of the Washington DC protests in 2020, which highlighted the need for a more equitable educational landscape in the US, and the impetus to use education as a means of liberation for the Black community. The BMEF celebrates Black educators, including past Black Montessori supporters and leaders such as Mary McLeod Bethune, and promotes Dr. Montessori's holistic philosophy within the Black community in efforts to increase Black engagement with the transformative Montessori approach. The organization promotes equitable access to Montessori education, which, unfortunately, has become synonymous with privilege and the higher class. Dr Sabate says – this was not what Dr. Montessori had in mind when she developed her revolutionary educational method more than 100 years ago in Italy. Yet, in the modern-day US, Black children make up only 6% of the population in Montessori schools. The fund aims to change that and to bring Montessori back to its roots by removing the financial barrier that contributes to the under-representation of Black educators, children, and families in Montessori programmes. We actively work to provide resources, mentorship, advocacy, and safe spaces for Black educators, educational pioneers, and families in Montessori (Black Montessori Education Fund online).

[12] Montessori Europe – the organization registered in 2003; however it originated with some of the ideals related closely to European unification (EU). The initiation group realized that the main goals of the European Union are connected with peace and Economic Cooperation of European countries. Educational

Montessori Europe needed a new energy. And that's why I committed to helping to bring new ideas to Montessori Europe.

[JJ]: I can see Barbara that you devoted most of your life to Montessori. And it's quite difficult for me to basically accept the fact that this happened by accident. [laugh]

[BI]: Absolutely!

[JJ]: Okey, but I still think that there must be something special in Montessori that actually keeps you doing that?

[BI]: Oh, yes.

[JJ]: So, my question would be: what is so special in Montessori that you have actually decided to devote a large part of your life to it?

[BI]: It is because Montessori cherishes the child. She has got quite a romantic notion of the child. I feel the energy which she dedicated to children. And I absolutely share in that. The idea that we serve the child is, for me, a very powerful message because we have an opportunity to help children become decent human beings. And I believe that as the world evolves and as we have progress into 21st century supported by the speedy development of AI that idea of supporting the development of caring aware human beings is vital.

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policy, especially when it comes to non-traditional approaches to education, played only a minor role. Besides that, the development and spreading of Montessori movement in many European countries led to the need for a higher level of self-organization. In the late 80s and 90s the Iron Curtain collapsed, and it was very clear for the European, local and national Montessori organizations that East and West European cooperation was going to be a native issue for Montessori Europe from the very beginning. In the year 2000 people from several European countries thought that, for further development of Montessori pedagogy in Europe it would be good to establish a united European Montessori platform. The initiation informal group consisted of: Gudula Meisterjahn Knebel and Rainer Völkel from Germany, Clare Healy from Norway, Małgorzata Miksza, PhD from Poland, Herbert Haberl from Austria, Kristina Wennerstroem and Britta Bring from Sweden, Aileen O'Brian from Ireland, and Christopher Zanon from Switzerland. They started to discuss this idea, met on several meetings throughout Europe and in 2003 Montessori Europe was registered. The first seat of Montessori Europe was in Switzerland, but in 2005 the registration country was changed to Germany, where it is still today. The main ideas behind the creation of Montessori Europe, which is still a pillar of the organization, include establishing and promoting Montessori pedagogy throughout Europe, supporting sustainability and research in education, and giving voice to children and adolescents. The organization has come a long way since the inception and continues the work, engaging at all levels throughout Europe and beyond. Nowadays the most important aims are oriented at ensuring that Montessori pedagogy engages with the political, social, and educational challenges of our times in order to be able to support the children of today, preparing them for the world of tomorrow. The current board has turned its attention to extending the network function of Montessori Europe, facilitating the connection of Montessorians across Europe and beyond to critically engage with Montessori values and practice in the service of the child. As the mission of ME states: Together, we are stronger, as we work together to face the global challenges that confront us. In this context, the United Nation's Sustainable Development Goals (SDGs) are the challenges of our time and provide a blueprint for peace aligned to Montessori's work (Montessori Europe online).

[JJ]: So, Barbara, you mentioned something that I find really intriguing. Because you're talking about decent human being. Could you tell me a little bit more? So, what do you understand by a decent human being?

[BI]: It's really tricky because it's such a general term and for me it means somebody who is aware, who really cares about others and thinks about others and our planet. I don't expect perfection, but I expect that those persons somehow feel for others. Somehow, they can anticipate what situations may be like for other people. I think this is particularly relevant to current climate situation because we are somehow not able to articulate for our children or for the community that what we do in the Western world has got an immediate impact on people around the world. The way how we exploit our resources impacts on what happens to the people in the Pacific, to happens to people in Africa. We have somehow lost the sight of the fact that we are one global community. For me this is an important message which is very closely linked to the Montessori view of cosmic education, I feel very attuned to the idea that we need to care about others, we need to understand the interdependence of all of us. And that we have got responsibility for the planet. Those three things remain the most powerful messages I have taken from my Montessori teacher training. I felt a deep connection with the principles of Cosmic education from the moment I learned about them on my Montessori course in 1983. Today, I understand Cosmic education, not in the context of the elementary curriculum, but as a philosophy of life.

[JJ]: I have to say that the idea of discovering your cosmic task is for me personally very powerful.

[BI]: I think that we often consider that our cosmic task is somehow elevated above our daily lives. For me, it is more fundamental. I think that everybody has got a cosmic task. It sounds a bit fancy, but even the sweeper in the street has got something to contribute to their community. And we are not teaching the children to value what this sweeper has to give us. We had a glimpse of it during COVID when we were entirely dependent on people who were making our lives possible in the challenging times – the cleaners, the carers, the nurses and doctors. But we have very quickly forgotten about that interdependence within the community; that we need to value every contribution, that makes our lives possible today. I think that kind of respect for others, for whatever they do, is totally missed in education. Totally missed. I see it as valuing the potential of each person, not only their academic potential – but their potential as a human being.

[JJ]: Barbara, I would like to ask you about adult preparation. You mentioned a little bit that it is impossible to serve the child without the knowledge of the development of the child. But if you could tell me a little bit more what. What do you find important or even essential in adult preparation to the role of Montessori adult?

[BI]: I think that one of the challenges we have as Montessori teacher-trainers is instilling in our graduates that the Montessori course is only a beginning of their journey of knowing the children, particularly if they come to Montessori quite early on in their lives. I have come across so many people who believe that becoming a Montessori teacher or trainer they have achieved something enormous in their life. They have kind of arrived. But to me that is only the beginning. If I think about how I saw children in 1983 when I trained and soon after, and what I understand about children 40 years on, is a totally different thing. I'm still believing in the Montessori vision of the child as a powerful agent of change. But I think I'm a little bit more humble about what I can potentially achieve and the importance of every child that I meet. And I believe passionately that… we need to share with children our belief that they can achieve, that they are powerful, but that they also need to be respectful of the natural resources that we have because we are the custodians of the Earth.

So, it is a mixture of empowerment and responsibility. And for me that element of responsibility in teacher training is important because it is a huge privilege to be able to share what I know with others. And I need to do it to the best of my ability as a trainer. And the other element is that the majority of people who come to Montessori teacher training are adults. They come to it of their own volition. They don't come to it because they have to. They come because they want to know more. And somehow the traditional Montessori teacher training which I received in 1983 did not recognize the fact that I was an adult who had come to the training college with a range of experiences. That I actually lived something. I was willing to pay money and give my time to learn more. It is quite dogmatic in the way how we train Montessori teachers. We tell them how to do things with the children and somehow, we disempower them in their capacity to be thinking human beings responding to the children in our company. Does it resonate with you?

[JJ]: Absolutely, absolutely. Yes, that's why I do believe that university might be one of the places.

[BI]: Absolutely. And you know, that's why through my teacher training career I worked hard to be able to introduce the first Montessori teacher training course related to a university degree in the UK, and some of the graduates of that degree programme certainly demonstrate the capacity to think out of the box, to be able to embrace other ideas and see how these could be incorporated into Montessori education. They don't see Montessori as exclusive. I think that the whole label of Montessori being exclusive in children's education, in teacher education is really misguided… Because in the beginning or in the middle in the first quarter of the 21st century there are so many other people who think about children in the same way as we do, but we don't really engage with them to cooperate and participate in a dialogue in order to join forces to articulate the needs of humanity for the future.

[JJ]: I would like to come back for a moment to this adult preparation thing because if I understand you well, you suggest that we should not overvalue the answer to the question "how" – but perhaps concentrate a little bit more on "why" and "where to." Am I right?

[BI]: Absolutely. So, understanding why this person has come to the course, understanding their own story which led them to be there, sitting in the room and also understanding their individual journey – what they bring with them and also what they get out of their Montessori teacher training – it cannot be wrap up very neatly into one parcel.

Different people get different things from the training and they will take it into their lives and may not work with children but it may affect how they relate to other people. Also, they come to the course with different abilities and sometimes for them the journey is much longer. So, for that reason the importance of instilling in them the idea that this is the first step towards being an effective adult guiding child is very, very important… Currently we don't have sufficient infrastructure within Montessori settings to help those people who come to us at different levels of understanding to support them effectively for the future. So, the professional development, the way how the owners and managers of Montessori settings work with adults is vital. Often graduates are expected to be fully fledged – ready to do the job! You know, if I think about my own personal journey, I was so naive to think that I was capable of running the classroom. All my life I continued to learn from children; I listened to what they had to say to me and I was modest enough to think I need to really engage with their ideas.

Let me just share an experience of my very first week of working as a Montessori teacher responsible for 20 children… At lunchtime one child said to me: "But… Barbara there are many different gods." We used to say grace at the beginning of lunch and her family followed Hindu religion; and she obviously talked to her family about it and they explained to her that the God they worshipped in her family was different but just as important.

To this day I think, how arrogant of me it was to presume that all these children should do what I say without questioning it. This was such an important lesson in my first week in the classroom. I will never forget it. I try not to presume that I know better than the children and I will always want to hear what they have to say. I may be inclined to guide them in a different way. But I will always consider and ponder their ideas. Adults are a powerful influence; the children react to our work in such a spontaneous way and if we are capable of taking in their message, we will empower them to have a voice. This is another important element of Montessori teacher training – we must listen to the children rather than listen to our albums. We all need the guidance and mentoring of more knowledgeable others and this should include children.

[JJ]: As you know Barbara this is very close to my heart as well but I will try to be a little bit more practical, okay?

[BI]: I know, I know. The whole notion of cherishing the child in Montessori context is romantic.

[JJ]: Yes. So, if we agreed that listening to the child is very important in the preparation of the adults then my question would be: how to do it in Montessori training?

[BI]: I think you have to begin by respecting the adult learning to become a teacher. You as a teacher need to receive some of the validation that you are supposed to give to the children and this is where the mismatch is. The training of the teachers is quite doctrinaire. This is how you have to do it. This is how the presentation works. No! How the children received the presentation matters but the adults are not the only teachers. Children come to understand the working of the materials by watching other children or by their own capacity to problem solve and we don't respect that capacity to problem solve, often as adults, we have got no capacity of interpreting what the child is doing. A while ago I observed in a centre for children with special needs in Syria and a Montessori student was working with a two-year-old child who was interested in taking the cylinders out of the block and letting them roll to the ground because each one of the cylinders made a different sound. She was very embarrassed by the fact that the child didn't do the activity as she showed him and when I said to her: "Look at his face! He just loves the sound of the cylinders. He's not doing it as you showed him but he's getting something out of it, and you need to respond to that. He is interested in sounds, so what other activities could you offer that will develop this capacity or this interest in the sounds" and she had no idea how to do it. It's because we focus so narrowly on the use of the materials; the observations we make only focus on how well the child is using the material not in how they are using it and why. Can you see? And this is so frustrating if only we could just look at the children.

[JJ]: You know that at this moment many people would probably say each material in Montessori prepared environment has got its specific objective and therefore should be used in a specific way.

[BI]: Yes, and that's what we teach in the training. As adults need to understand the benefits of the material to be able to interpret what the child may be learning, but Montessori never told us that the children have to use it in the way how we show them. It is in the focus of the training which make the Montessori teacher trainees so dependent on the use of the material rather than on understanding the children and the way why and what they do with the materials. I think – that is the flaw of the Montessori teacher trainers and maybe the fact that once you become a trainer you stop working with children is the key limitation to the training. Because if you continued to work with children or continued to be able to observe with the children, you would see that the children have other ways of how to use the materials. Our 15 months old granddaughter absolutely loves the cylinders. She understands the principles of why certain cylinders only fit in certain holes and she uses the principles of trial and error, she is learning about one-to-one correspondence because she looks for the right hole. She will not be able to do it in a sequential manner, but does it

manner at this stage? The main principle of the cylinder is the one-to-one correspondence, and how the cylinder block guides the child's understanding of this principle.

[JJ]: So, if you had to give some advice on how to construct a curriculum for a teacher training programme, then what would you include there?

[BI]: I think that the key to the teacher training is in the length of it. I think that one year is not enough. You need to give the basic foundation in the one year. And people need to understand how the materials work, but they absolutely need the learning from the child in a subsequent year to be able to begin to think critically about what the children do and what they can learn from it.

For me maybe the most challenging element of the Montessori teacher training is the final examination. The practical examination when you have to demonstrate your capacity to use the materials. I think in an ideal world I would like people to attend the first year and get a temporary certification, and then go and work with children. And then have a conversation about what I have learned during the second year of working with children about the use of the Montessori materials and what it means to children and, about the meaning of honouring the voice of the child. At present there does not seem to be a conversation about what the child has done or what I have learned from the children. And yet without that capacity to learn from the children you cannot have that humility that Montessori talks about. We all need to be able to somehow recognize that we are not the all-powerful element of the learning for the child that the child is the powerful element and you are only in the service of the child's learning. Does that make sense?

[JJ]: Yes, of course. Barbara, I would like to ask you about the challenges that you see in Montessori as theory or as a concept of education but also in the community of Montessorians.

[BI]: I think our challenges are the fact that we operate within the private sector, that all the teacher training is offered privately with some exceptions when it's linked to university degrees. I think that creates a very exclusive idea of success. The financial aspect of running private teacher training is directly linked to number of enrolled students and the number of graduates, their success is also linked with the unique offerings of the college and how these are promoted and marketed. The training colleges are in competition with each other which is very deeply ingrained in the Montessori world… graduates feel deep allegiance to the place where they have trained – these allegiances close doors rather than open then in the spirit of co-operation and learning from each other. It works totally against the idea of being in the service of the child. It works totally against the idea that we need to learn from each other, that we need to cooperate. It works on the premise of competition rather than cooperation and I think that until we begin to really cooperate with each other and honestly recognize the strengths and weaknesses of each institution we will continue to have problems.

In 1989 or in 1990 I was asked to head the Montessori Centre International[13] which was a collaboration between St. Nicholas and London Montessori Centre and I trained at Saint Nicholas but for many years I worked at London Montessori Centre and because of that experience I was asked to lead the newly formed organization and it meant that I was able to draw on the strengths of the two organizations and it also meant that it was an opportunity to create a new approach to teacher training. This enabled us to work with London Metropolitan University on creating a degree level course with Montessori in its name. We were the first organization to get Montessori teacher training recognized on the framework of national early years qualifications. Um, but it was only possible because we drew on the strengths of the two organizations and we continued to learn and build on the initial learning. The whole idea of collaborative spirit is essential for Montessori to continue, and that collaborative spirit needs to extend beyond the Montessori community. We need to look at what other people are doing. You know, there is history that Montessori herself built on learning from others. When I look at some of the Fröebel gifts[14] I see how much Montessori borrowed from him. And what about the influence and Sequin[15] and Itard[16] on her approach?

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[13] Montessori Centre International (MCI) was established in 1998 through the collaboration of London Montessori Centre, founded by Lesley Britton, and Montessori St. Nicholas Charity, merging the work of two internationally acclaimed Montessori centres. Originally based in Balderton Street, London, MCI later relocated to St John's Wood, offering blended learning Montessori training for educators worldwide. Since 2020, MCI has focused on collaboration with Host and Beacon Centres, to prepare their own delivery models across the UK and overseas. (Montessori Global Education online).

[14] Fröebel created a set of "Gifts" to support children's learning and development in his kindergarten in Germany in the 1840s. These Gifts include six sets of cubes, spheres and cylinders and included one of the first sets of wooden blocks developed specifically for young children to explore, create and play with. The Gifts are central to Froebelian practice (Froebel Trust, *Froebel's Gifts…* online).

[15] Édouard Séguin (1812–1880) – a French physician and educationist born in Clamecy, Nièvre. He is remembered for his work with children having cognitive impairments in France and the United States. He studied at the Collège d'Auxerre and the Lycée Saint-Louisin Paris, and from 1837 studied and worked under Jean Marc Gaspard Itard, who was an educator of deaf-mute individuals, that included the celebrated case of Victor of Aveyron, also known as "The Wild Child". It was Itard who persuaded Séguin to dedicate himself to studying the causes, as well as the training of individuals with intellectual disabilities. As a young man, Séguin was also influenced by the ideas of utopian socialist Henri de Saint-Simon. Maria Montessori was hugely inspired by many of his ideas, and followed his work by including most of the principles related to the construction and use of sensorial material. Around 1840, he established the first private school in Paris dedicated to the education of individuals with intellectual disabilities. In 1846, he published *Traitement Moral, Hygiène, et Education des Idiots* (The Moral Treatment, Hygiene, and Education of Idiots and Other Backward Children). This work is considered to be the earliest systematic textbook dealing with the special needs of children with intellectual disabilities (Wikipedia, *Édouard Séguin* online).

[16] Jean Marc Gaspard Itard (1774–1838) –a French physician born in Provence. He is perhaps best known for his work with Victor of Aveyron. Itard, without a university education and working at a bank, was forced to enter the army during the French Revolution, but presented himself as a physician at that time. After successfully working as an assistant physician at a military hospital in Soliers, in 1796, he was appointed deputy surgeon at Val-de-Grâce (Hôpital d'instruction des armées du Val-de-Grâce) military

And there seems more Montessori has borrowed from Fröbel. Standing[17] makes reference to him in context of cosmology and the basis for Cosmic education, his idea of the child being part of the earth and the part child being part of the universe. It hasn't necessarily come from Montessori. She developed it and she created it into something else, we do not develop our ideas and understanding of the world in isolation. We are always evolving our ideas in relation to others. For example, we can learn from Rudolf Steiner[18], and how he saw children and their developmental progression from the earliest, to the elementary, to the adolescent. He had a very good model of understanding what children need. So, drawing

hospital in Paris, and in 1799, physician at the National Institution for Deaf Mutes. Maria Montessori studied his approach and followed many of his suggestions related to education (Wikipedia, *Jean Marc Gaspard Itard* online).

[17] Edwin Mortimer Standing (1887–1967) was a close friend and assistant to Maria Montessori for over thirty years. Born in Madagascar to Quaker missionaries Lucy and Herbert Standing, Standing was educated at Cambridge University. After working as a tutor in India in the early 1920's, Standing converted to Catholicism in 1923 and spent the next three decades directing Montessori teacher training courses in Italy, India, and the United Kingdom. He authored several books, including *The Child in the Church: Essays on the Religious Education of Children and the Training of Character* (co-authored with Montessori; Sands Publishers, 1930), *Maria Montessori: Her Life and Work* (Academy Library Guild/Plume, 1957) and *The Montessori Method: A Revolution in Education* (Academy Library Guild, 1962). In the summer of 1962, Standing came out of retirement from his home in Cork County, Ireland to accept an invitation from William J. Codd, SJ, Professor of Education at Seattle University. Originally, Codd invited Standing to the university to help teach a special four-week summer session on Montessori education. Standing and Codd decided instead to inaugurate a permanent center for Montessori studies at Seattle University. Their goal was to promote the Montessori movement in the Pacific Northwest. After his death in 1967, the bulk of Standing's notes, manuscripts and ephemera became the nucleus for scholarship and research for courses taught through the E.M. Standing Montessori Studies Center (circa 1968–1978) (Archives West online).

[18] Rudolf Steiner (1861–1925) was an Austrian-born spiritualist, lecturer, and founder of anthroposophy, a movement based on the notion that there is a spiritual world comprehensible to pure thought, but accessible only to the highest faculties of mental knowledge. Attracted in his youth to the works of Goethe, Steiner edited that poet's scientific works and from 1889 to 1896 worked on the standard edition of his complete works in Weimar. During this period he wrote his *Die Philosophie der Freiheit* (1894; "The Philosophy of Freedom"), then moved to Berlin to edit the literary journal "Magazin für Literatur" and to lecture. Coming gradually to believe in spiritual perception independent of the senses, he called the result of his research "anthroposophy," centring on "knowledge produced by the higher self in man." In 1912 he founded the Anthroposophical Society. Steiner believed that humans once participated more fully in spiritual processes of the world through a dream like consciousness, but had since become restricted by their attachment to material things. The renewed perception of spiritual things required training the human consciousness to rise above attention to matter. The ability to achieve this goal by an exercise of the intellect is theoretically innate in everyone. In 1913 at Dornach, near Basel, Switzerland, Steiner built his first Goetheanum, which he characterized as a "school of spiritual science." After a fire in 1922, it was replaced by another building. The Waldorf School movement, derived from his experiments with the Goetheanum, by the early 21st century had more than 1,000 schools around the world. Other projects that grew out of Steiner's work include communities for persons with disabilities; a therapeutic clinical centre at Arlesheim, Switzerland; scientific and mathematical research centres; and schools of drama, speech, painting, and sculpture. Among Steiner's varied writings are *The Philosophy of Spiritual Activity* (1894), *Occult Science: An Outline* (1913), and *Story of My Life* (1924) (Britannica 2024).

on the history of education in these three very important spheres enables us build on a solid foundation for the future.

[JJ]: This all sounds really inclusive. Collaboration is always better than competition as I get it.

[BI]: Yeah.

[JJ]: But the question is: Is it in any way possible when the knowledge is treated as commodity, and also Montessori training is a commodity? In other words, is it possible to collaborate in neoliberal world?

[BI]: For me collaboration is the only way forward. Initially you can say you know, you are AMI trained so you are very unique. You are AMS[19], trained you are very unique. You are

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[19] The American Montessori Society was founded in 1960, in the early, heady days of a movement aimed at redefining educational options in the United States. Americans had been introduced to Montessori education once before, in the early 1900s, but their initial excitement had long since waned. By the 1950s, however, the cultural climate was changing, including a growing discontent with traditional American education. Among those seeking alternatives was a young, aspiring teacher from New York City, Nancy McCormick Rambusch. A recent recipient of a master's degree in early childhood education, and before that, a student of French literature and Romance philology, she was – like Maria Montessori, the founder of the Montessori Movement – charismatic, well educated, and a tireless advocate for children. In 1953, Rambusch's quest for a better approach to educating American children took her to Paris for the Tenth International Montessori Congress, where she met Mario Montessori, Maria's son and her successor as head of the AMI, an organization she had founded to support the Montessori Movement. Mario urged Rambusch to take coursework in Montessori education and to bring the Montessori Method to the U.S. Rambusch embraced the idea, and within a few years was conducting Montessori classes for her own children, and others, in her New York City apartment. In 1956, the Rambusch family moved to Greenwich, CT. There, Nancy became involved with a group of prominent parents who wanted to be deeply involved with their children's education. In 1958, they founded Whitby School – the first Montessori school to open in the U.S. since the initial flurry of interest in Montessori in the early 20th century. The board selected her as head of school. The following year, Mario Montessori appointed Nancy Rambusch to serve as the U.S. representative of the AMI. Six months later, in 1960, and with the vigorous support of parent-advocates, Nancy Rambusch founded the American Montessori Society. The goals of AMS mirrored those of AMI: to support efforts to create schools, develop teacher education programmes, and publicize the value of Montessori education. In 1961, TIME magazine featured Rambusch, Whitby School, and the American Montessori revival in its May 12 issue. The article galvanized the American public, and parents turned to AMS in large numbers for advice on starting schools and study groups. Additional publicity in the popular media, including Newsweek, the New York Times, and the Saturday Evening Post, as well as the publication in 1962 of Rambusch's book, Learning How to Learn, led to dramatic growth in the number of American Montessori schools and students. From the beginning, Rambusch and AMS worked to advance Montessori education into mid-20th century American culture. AMS insisted that all teacher educators have a college degree so that the coursework could, potentially, be recognized by state education departments. AMS also broadened the curriculum for teachers and sought to forge inroads into mainstream education by offering Montessori coursework in traditional teacher preparation programmes. Nancy Rambusch believed there was a need for cultural accommodation. Professor John J. McDermott, a colleague and friend, agreed, arguing that the popular idea of the universality of children displayed a basic naiveté about the interrelationships between a culture and the child's development of consciousness. McDermott also

MCI trained, you are very unique. But when you go to the workplace, we need to be able to see how each one of those approaches has enriched our knowledge and understanding of the children and therefore it would be much, much better for the training organizations to acknowledge that we work independently and we have got our approaches. But the roots of what we try to share are important and we need to preserve the fundamentals in order to thrive as a community because every single time when you begin to talk about the value of Montessori this question: "Oh but this is not a real Montessori therefore it cannot be as good as what I'm doing" totally undermines our work.

Why not to say? "You may not be doing it in the same way, but why is it that you are doing it in this way? What do you think benefits the children"? The question should always be: "What does it give to the children? What can you offer as an educator to the child? What have you learned from those trained by others"? You know, I think what Marlene Barron[20] has given to the Montessori community through her writing for AMS is incredibly valuable. I think what AMI offer us for organization of the classroom and some of the ideas about consistency is very, very important.

We need to respect what each other has to offer but also to acknowledge, that the learning journey is different for each individual graduate of the colleges. So, you can have an exceptional AMI teacher. You can have an exceptional AMS teacher. You can have an exceptional St. Nicholas teacher. But what are we doing about the people who are not exceptional? How do we help them to become better and not just say: "Oh well, they are AMI trained, this is why, it is like that." You know we constantly hide behind the training instead of saying this is your Montessori journey and we are here to help you to be better in the service of children. Is it still very romantic?

[JJ]: It is, yes. And I love it.

[BI]: I'm never going to say anything else.

[JJ]: Me neither [laugh]. How do you see the future of Montessori community Barbara?

[BI]: The main message for me is to work with others. Learn from others. Learn to see what the democratic schools have to offer. See how the home education community works. Lots and lots of people in the world at the moment are drawing on Montessori to educate their children at home and fundamentally I disagree with this idea that children should be

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stressed the need to move Montessori into the public sector so that it would be available to all children, regardless of their circumstances – a conviction that remains a vital underpinning of the organization, along with a belief in the need for adaptability (American Montessori Society online).

[20] Marlene Barron, PhD (1939–2022) had a distinguished career in Montessori education. She founded the Staten Island Montessori School in 1965 and served as its executive director until 2005. In 1979, she became head of school for West Side Montessori School, a role she held for 28 years. Dr. Barron earned degrees from Barnard College, Wagner College, and NYU, where she founded a Montessori teacher education programme. She worked extensively as a teacher trainer and academic adviser, including roles in China. An influential author, she wrote several educational books and received numerous honours (Montessori Life 2022).

educated at home. I think that children need to have the social aspect of school. For me that social element of school is far more important than the academic achievement because we are preparing them for life within the community, not separate from the community. But we need to work together in order to demonstrate to governments that there are some deep-seated values in helping children and recognizing children as individuals capable of contributing to the future. In recognizing that different children learn in different ways and that it is our responsibility as the educational community to help them develop to their potential, and the potential of each individual child is very different and yet, it needs to be valued. It cannot be undermined because it doesn't fit the formula of the present government.

And also I challenge, this whole idea of how we learn in the western world and that is the formula for all the rest of the world to learn. You know, there are still so many children who don't have access to education and Montessori could be the answer. But as long as we are linked to this idea that we need to have the authentic classroom for children to receive authentic Montessori learning we are not going to help those children. Setting up an authentic classroom is not accessible to the majority of people. But empowering the communities to use their resources to help the children learn is really, really important and there are examples of it. In Mexico the Escola Nueva[21] offers this idea that children learn from each other as a format to help the teacher to run school of 40 children. In South Africa I have seen teachers making number rods out of loo rolls because they were accessible. You could paint them and you could make them. So, if we help people understand the principles of Montessori learning we could make Montessori education accessible to more children. But we need to be able to think about moving away from the materials and looking at the principles behind the materials in order to be able to offer it to children around the world.

[JJ]: Yes. Oh, this is a beautiful conversation. Thank you, Barbara! Thank you very much for that. I have a very last question that is related to those people who are at the beginning of their adventure, at the start of their Montessori journey. So, could you please offer some message or advice to them?

[BI]: I still think that the message is: BELIEVE IN THE POWER OF THE CHILD and continue to watch and learn from the children. Do not see your Montessori teacher training as the finite step in your education as an adult. See it as the beginning and continue to read Montessori's writing. There is a lot of contradiction but there is a powerful message of the

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[21] Escuela Nueva was founded in the mid-1970s by Vicky Colbert, along with Beryl Levinger and Oscar Mogollón as co-founders. Colbert's family had a strong involvement in education. Her mother had set up teacher training colleges in Colombia and her grandfather had been Colombia's minister of education. The initiative began with just a few schools in three regions in 1976, and by 1989 the project had grown to 17,948, serving around 800,000 students. The readers may find this interview very interesting. It not only shows the involvement of Vicky Colbert in the transformation of rural schooling in Colombia and beyond (hundrED 2023). The context, values, story, as well as the challenges and successes of this initiative, oriented at bringing quality education to the poor in the Colombian Andes as well as the role of Montessori ideas in it, are beautifully described in a conversation between Steve Inskeep and Anya Kamentez (nprEd 2016).

child as the agent of change. This powerful message of possibility of changing the world through education for me still remains at the heart of Montessori and it doesn't link to the use of the materials. It links to respecting the child, to trying to understand why children do certain things, to trusting in the child's capacity to learn – particularly in the first six years of life when self-image of the child is established. When you help the child feel that they are all powerful individuals… That is so important, and I would say the materials are interesting, but they are not essential. There are other ways to do it. We need to give children opportunity to show you what their levels of interest are. You know, because there are the children who like to manipulate blocks, there are the children who love to work with home activities, there are the children who like to draw and paint. There are the children who love to read or do mathematics, so let's just go with the children. Don't push your curriculum. This idea that you have to tick every box of the Montessori material being done is detrimental to the development of those children. You need to find a way how to make those children learn through the activities they enjoy.

[JJ]: Thank you very much Barbara for this conversation.

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