

BUILDING KNOWLEDGE ON SOFT SKILLS DEVELOPMENT IN EARLY CHILDHOOD: APTNESS OF GUIDING A QUALITATIVE ANALYSIS OF THE MONTESSORI METHOD

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Abstract

While the significance of soft skills is greatly enhanced by the nature of work and life in the 21st century, the growing demand for them is met with increasing scarcity. Though experts agree that soft skills development interventions best have a focus on early childhood education, practically applicable consolidated knowledge on individual soft skills development during this stage is much lacking. In sight of that knowledge on such abstract phenomena can only be drawn through extensive research undertakings of the empirical nature, a strategic approach was adopted in this study for the required knowledge accumulation. Under the explanatory sequential mixed-methods approach, a quantitative benchmarking analysis paved way for a multi-methods qualitative analysis of an empirically developed standard method of early childhood education: The Montessori Method. This paper mainly argues for the selection of this method for the study from among other key classic methods of early childhood education: Waldorf and Reggio Emilia. Both the confirming results from the benchmarking analysis and the abundance of findings from the thematic analysis further support the selection of the Montessori Method as the subject of the qualitative inquiry of authentic program elements that contribute to the development of individual soft skills in early learners.

Keywords: Soft Skills, Early Childhood Education, Montessori Method, P21 Framework

INTRODUCTION

Background: ‘21st-century soft skills’, the widening demand-supply gap, and the best stage for developmental interventions

In today’s knowledge-based information-driven global economy, routine jobs that used to largely call for knowledge, experience, technical skills, and basic cognition are swiftly getting replaced by technology through automation, thereby causing human work to increasingly shift toward what computers and artificial intelligence cannot yet do: non-routine physical tasks requiring meticulous attention; acquiring and making sense of new information and then communicating and applying them for decision-making; influencing others; and solving problems for which standard rules or operating procedures do not yet exist (Levy & Murnane, 2013). This leads to possession of certain skills that belong to a cluster of interrelated and interdependent skills (Bjorklund-Young, 2016) popularly called ‘soft skills (SS)’ which enable working with the abstract; handling complex contextual information; and making ethical

judgements which are essential for strategizing, creative decision making, and crisis management: tasks better performed by humans themselves rather than assigned to computers and artificial intelligence, becoming the key determinant of both entrepreneurial success as well as career success in all white, blue, and pink collar jobs in the 21st-century economy (Brown & Hesketh, 2005; Autor, 2015; Holmberg-Wright & Hribar, 2016; Luckin & Issroff, 2018).

Aiming for reduced staff turnover, increased productivity, and higher client/customer satisfaction (The Southeast Michigan Council of Governments [SEMCOG], 2012), 21st-century employers all around the world are increasingly reported as seeking soft-skills-rich employees for jobs from the top to bottom (Cunningham & Villaseñor, 2016; Wiburg, 2012; Burnett & Jayaram, 2012; Nickson et al., 2012). Meanwhile, managerial skills of the ‘soft’ quality are found to be the driving factors in creating wealth and success in an organization, making such skills a success factor for entrepreneurship and organizational management (Holmberg-Wright & Hribar, 2016).

Yet, despite that the call for SS in the labour market has been rapidly escalating, employers all over the world have been complaining of the lack of SS which is increasingly evident in the new entrées to the job market (McLaughlin, 1995; American Society for Training and Development, 2012; United Nations Educational, Scientific and Cultural Organization, 2012; International Labour Office, 2013). Not being limited to just the new-entries to the job market, these vital core skills are sadly found to be also lacking in even the experienced employees as well as managers and entrepreneurs across diverse nations (Mourshed et al., 2012). This demand-supply gap in SS keeps on widening from generation to generation, calling for remedial action to be taken in the world of work in form of vigorous on-the-job training as a last resort (Tulgan, 2015).

When approaches to SS development during education are examined for finding reasons for the decades’ worth of efforts by national education systems having failed to bridge this demand-supply gap, it comes to immediate attention that almost all such efforts are focused on secondary and tertiary education for reason of immediate usability in job-related contexts (Gordon et al., 2009; Ananiadou & Claro, 2009). Many facts cry out “too late!” for all such delayed interventions and point at Early Childhood Education (ECE): the very first stage of formal education, as the best time for introduction and embedment of such skills in learners.

For one, as these skills are important not only for career success but also for success in all other life’s domains: education, family, social, and citizenship (Majid et al., 2012; Tsey et al., 2018; Lee, 2012), they all are adversely affected by their belated introduction in life. Besides, “*the foundational capabilities on which subsequent development builds*”- all emotional, social, regulatory, and moral, are mostly laid by the time a child is of five years old (The US National Research Council and Institute of Medicine, 2000, p 5), which makes delayed interventions less effective. There is also evidence that adulthood earnings, through “*gains in non-cognitive measures*”, are positively related to learning environment quality during ECE (Chetty et al., 2011). Heckman and Carneiro (2003) confirm that investments in ECE interventions with an

extended target on non-cognitive skills development yield much higher economic returns than human development investments at any other stage in life, and provided that these skills “*form early in the life cycle and account for racial, ethnic, and family background gaps in schooling and other dimensions of socioeconomic success*”, advise the focus of their development efforts to be shifted to ECE. Also, according to Berger (2020), such early interventions can be strongly predicted to have significant long-term effects on individual human capital accumulation given that introduction to a certain skill at an initial stage of life leads to that same skill being improved in a later stage (self-productivity of a skill) as well as to strongly enhance the production of a number of other skills over time (cross-productivity of skills).

It is indisputable that the foundations of skills, especially those of such abstract quality, are best laid at the earliest years of life when skills are actively acquired and frequently utilized (Guerra et al., 2014) and while the individuals are still greatly malleable (Kautz et al., 2014). Furthermore, provided that developing basic human characteristics and skills is a life-long process (Bloom, 1966), early introduction allows learners to put these skills to work in realizing their educational attainments while leaving adequate time for them to apply, practice, advance, and master them throughout later childhood and adolescence (SEMCOG, 2012), thereby leading these learned skills to be transformed in to concrete habits, aptitudes, and character traits in adulthood through the formation of positive attitudinal and belief systems (Sumanasinghe & Sethunga, 2021).

A knowledge gap: There is simply not enough consolidated evidence-based knowledge on how to develop soft skills during early childhood education

While applauding all SS development initiatives focused on ECE, the focus of educational research in the field around the world must be drawn to find answers to the most daunting issue encountered in ensuring success in such initiatives: figuring out the specific means by which these skills can be effectively implanted in learners of such a tender age. Even though an overwhelming flood of conversations are taking place in different forums on the impact of these skills on education, economic growth, citizenship, quality of life and so on, soon followed by agreement on the need to develop them through educational interventions, there is very limited consolidated knowledge on the specifics related to the development of individual SS which is applicable in actual practice, especially during ECE. In order to create awareness of their importance and support their development, SS have been brought under various 21st-century competency and skills frameworks. Yet when the focus of these frameworks are considered, only one among all such has a focus on ECE: The P21 Early Learning Framework (P21ELF), an extension of the P21 Framework for 21st-century Learning (P21)’ (2006). Two factors stand in support of the P21 framework and subsequently the P21ELF: that P21 is one of the three foundational frameworks that provide universal conceptualizations of 21st-century competences/skills based on which the other more discipline-specific frameworks have been built on, and that it is one out of the only two which address all three key issues concerning the implementation of 21st-century skills in education by providing concrete recommendations to support effective implementation (Voogt & Robin, 2012). Nevertheless, While the detailed learning outcomes listed under each skill in the P21ELF will help recognize children’s

demonstrations of skills acquisitions, and the support guidelines given in its Implementation Guide will help in setting out a general outline for a programme which would be of certain help in generating such student outcomes, it still has much room for improvement when it comes to giving a clear insight and sufficient guidance on individual 21st-Century Soft Skills (21stCSS) development. Whereas the knowledge and guidance provided therein on creating environments for individual skills development may be unquestionably reliable, the knowledge furnished on exact factors that lead and support the development of individual 21stCSS and the related skills development processes is still not sufficient for either effective comprehension of skills formation or effective application.

This is backed by the assertion by Chu et al. (2017) that “*while specifying prioritized learning objectives, all 21st-century skills models are limited in that they do not offer educators the “means” by which to achieve those articulated “ends”*”, which is followed by their call for immediate attention to the need for backing educators and policy makers who undertake the immensely complex process of implementing 21st-century skills education with much more detailed, well-researched knowledge of the specifics.

A strategic contribution to bridge the research gap: Drawing from a classic early childhood education system through an in-depth multi-methods qualitative analysis

It is inarguable that the core reason for the inadequacy of knowledge on the specific means by which individual 21stCSS can be developed is that these skills are abstract in nature and therefore concrete evidence for their successful development, especially related to Early Learners (EL) who are not yet able to analyse and explain what factors contributed to their skills learning and how, can only be drawn through extensive research undertakings of the empirical nature. Acting based on this insight, a strategic approach was decided to be adopted for the endeavour of accumulating the required knowledge through an in-depth qualitative analysis of an empirically developed standard method of ECE. With its reputation as a holistic method of ECE (Miller, 2011; Brunold-Conesa, 2010), developed and fine-tuned through half a century’s worth of empirical research and tested in diverse backgrounds round the world (Lillard, 2013); together with its continued world-wide popularity as one of the best ECE systems throughout over a century which has not yet diminished (Lillard, 2019c; Association Montessori International [AMI], n.d.-b) under the new educational focus on 21stCSS, the Authentic Montessori Method (AMM) for ECE answered to all the requisites, and was therefore singled out as the subject of the study.

The best candidate for the qualitative analysis: Why Montessori, and not one of Waldorf or Reggio Emilia?

Reggio Emilia, Waldorf, and Montessori remain the three most popular classic ECE methods and are highly regarded and widely adopted around various parts of the world even to the day (Aljabdeen, 2020; Morrison, 2007). They all have a rich history of supporting the educational freedom of young children and are considered to provide inspiration for progressive educational reform (Edwards, 2003). Nevertheless, the MM far surpasses the other two classic ECE methods based on many factors including comprehensiveness, structure, adaptability, and

authenticity, and continues to be the most popular and widespread alternative ECE system in the world. Dr. Montessori's theories regarding child development are often used as a framework to inform most modern educational theories with many of her original ideas being fully incorporated in to ECE setups regardless of the specific program inclinations (Aljabreen, 2020). Therefore, the decision to select the MM for an in-depth study is easily justifiable. The following few paragraphs discuss the reasons for selecting the MM for this specific study in more detail with the facts summarized in the table at the end for ease of comparison.

a. Comprehensive curriculum aimed at whole-child development:

With Reggio Emilia's focus being on art and nature, and Waldorf's on flexible unplanned storytelling, both programs share a special emphasis on the arts (Easton, 1997) and therefore are rather uncomprehensive and unbalanced as holistic education systems. As Reggio Emilia aims to develop all '100 languages of children' (Vakil et al., 2003), it naturally does not privilege literacy and numeracy over other symbolic languages. While its founder Loris Malaguzzi rejected giving such emphasis comparing it to using 'a choking device', given that attaining of educational goals is very time consuming, blindly following the interests of the children as done in Reggio Emilia involves the risk of the system failing to ensuring that the pre-specified academic targets are being reached (Chicken, 2022). The focus of Waldorf ECE also narrows down to mere constructive and creative play, oral language, story, and song as the introduction of reading, writing, and arithmetic is chosen to be delayed until later (Aljabreen, 2020). In strong contrast, mathematics, reading, and writing are all emphasized in the Montessori ECE curriculum, together with sensorial development, practical life, and a range of subject areas such as biology, astronomy, history, geography, and human cultures (AMI, n.d.-c). As this comprehensive and balanced Montessori curriculum, unlike those of Reggio Emilia and Waldorf, is designed to facilitate whole child development: the core concept behind the modern phenomenon of 21stCSS, it is the best classic ECE system to involve in a study focused on SS development in EL.

b. Well Structured as a cohesive curriculum:

Neither Reggio Emilia, nor even Waldorf for that matter, is acceptable as being sufficiently structured for strong child development. Reggio Emilia's view of acquisition of knowledge as rhizomatic and complex "*like a tangle of spaghetti*", (Dahlberg & Moss, 2005 in Chicken, 2022), is in strong contradiction to the modern views of knowledge acquisition: linear, diverging, predictable, and manageable (Chicken, 2022). Waldorf also solely relies on indirect and unproven methods of education such as *Eurythmy* and storytelling for enhancing all subject areas including speech, writing, music, mathematics, literature, history, creativity instruction, and cultural exposure (Ogletree, 1997; Morrison, 2007), which does not allow nor call for a structured curriculum. Therefore, neither of the methods present a cohesive structured curriculum which uses designated educational materials and provide proof of goals and skills resulting from the specific educational method used. Meanwhile, the Montessori curriculum is extensively interconnected among its wide array of subject areas (Lillard, 2019), and the top down approach it adopts for giving knowledge makes it easier to interrelate points of

knowledge across learning domains. The curriculum is also interconnected within subject areas by means of indirect preparation for future learning (Lillard, 2013, 2019). Unlike Reggio Emilia and Waldorf, its detailed, planned, and structured learning environments also include specific didactic materials each which have been developed to attain clear age-bound developmental goals for children of preschool age through their use (Aljabreen, 2020). Also contrary to the greater freedom of the Reggio Emilia or Waldorf models that may deprive the child of opportunities to learn certain important academic skills, the Montessori method allows the child “*freedom within structure and structure within freedom*” (Lillard, 2013): freedom given by means of choice within pre-defined boundaries so that their tendency to pursue interests is tactically controlled to ensure a balance in education, which is once again bound by internal structure in each choice by means of specific procedural method which leads the child to accuracy and exactness in activity. This unified and consistent structure in the Montessori curriculum makes it both worthy of study and suitable for methodical analysis, which makes it the best candidate for a qualitative analysis.

c. Flexibility in the curriculum which enables adaptability over time and location:

Alternative educational models may introduce cultural ideas and methods which are different to those already offered within and across national contexts. Where direct transfer of such an approach may not be advisable due to possible cultural differences, adaptability of the model to fit the receiving culture is the key to successful adaptation (Aljabreen, 2020). A model’s lack of adaptability in certain local and community contexts due to cultural appropriateness and application barriers may call for exploration of possibilities for either combining parts of various alternative approaches to make new approaches or for incorporating just parts of such models to existing models to improve mainstream education (Nordlund, 2013). Both the Reggio Emilia and Waldorf methods are easily adoptable due to their loose structures and the focus on arts: a universal language by itself. Meanwhile, it is just a misunderstanding which has led the MM to being called a rather rigid curriculum, when in fact the flexible attitude which stems from the Montessori philosophy itself is reflected in practice through the complete cultural adaptability of its practical life curriculum and makes it highly adoptable as a whole ECE curriculum (Miller, 2011; Duckworth, 2006). Given that child development can be understood only in light of the cultural practices and circumstances pertaining to the times they live in, factors that change with location and time (Rogoff, 2003 in Aljabreen, 2020), the MM which is both time and location proven due to its high adaptability is the ideal ECE method to be focused on for any non-time-specific and non-location-specific study such as this.

d. Educational method based on the founder’s own educational philosophy:

Though both Rudolf Steiner and Maria Montessori were naturally influenced by ideas of others, the theoretical bases which their methods were built on were their own educational philosophies (Morrison, 2007; Lillard, P.P., 1972). In contrast, Reggio Emilia method of education was developed by Loris Malaguzzi basing on a theoretical base formed by directly drawing from a number of educationists and psychologists such as Vygotsky, Piaget, Dewey, Bronfenbrenner, Bruner, and Gardner (Edwards, 2003). As Dr. Montessori was also a prominent educationist who preceded Malaguzzi by about half a century, her influence also

can be clearly seen in the Reggio Emilia method. Given that the educational method under study being based on a coherent philosophy is central to a research focused on the direct and indirect learning outcomes of that particular method, in this aspect, both Waldorf and Montessori ECE systems appear to be suitable for a study of the proposed nature.

e. Founder's educational philosophy was based on a strong knowledgebase in all areas of education, child development, and subject-specific knowledge:

Factors such as the founder's knowledge in the areas of educational theory, child development, as well as all-around subject-specific knowledge are all key to developing a sound educational philosophy which can give birth to an effective educational system. But Malaguzzi, initially a primary and elementary teacher and an educational psychologist who only later became an early childhood educator (Moss, 2016), was moreover qualified with only basic degrees in education and psychology. Even though Steiner in comparison was a trained scientist and a great philosopher who also worked as both an artist and an architect, he also lacked in the aspects of having never trained as an educator or worked with young learners.

In contrast, Dr. Montessori who was already qualified in the multiple areas of paediatrics, psychology, engineering, and natural sciences and had hands-on experience with educating dumb children and training teachers of special education even by the point when her attention was drawn to the education of the normal child, then set off to extensively study and gather two centuries' worth of accumulated knowledge on educational pedagogy, anthropology, and special education before embarking on her lifelong journey of ECE (AMI, n.d.-a). The 360-degree knowledge and experience she had gathered gave her a broader perspective on education and child learning, and enabled her to develop a more comprehensive and balanced method of whole-child education than the others. This makes it highly probable for the MM to contain more secrets to developing SS in EL, thereby making it the best candidate for the related in-depth qualitative study.

f. Part of a larger plan of continued education:

Unlike Montessori and Waldorf, Reggio Emilia program is limited to the early childhood years (Edwards, 2002) with its sole focus on toddlers and preschool children. Given that education does not end at six years of age, and education up to a certain age therefore must take to consideration its role in supporting education continued beyond that age, this makes it weaker in philosophy compared to Montessori and Waldorf: the ECE curricula and programs of both which are parts of larger curricula and programs extending up to university education (Montessori, 1948; Attfield, 2022). As this makes them both more effective than Reggio Emilia in the long run, it makes them both suitable for a study focused on effective ECE.

g. Exact method of education is extensively elaborated and clearly documented by the founder:

Steiner gave thousands of lectures on a range of topics like agriculture, medicine, spirituality, and social reform and wrote dozens of books (Redwood, 2022) including those related to education such as *Essentials of education*, *The roots of education*, *The spirit of the Waldorf*

school, The foundations of human experience, Practical advice to teachers, and The kingdom of childhood. Yet unfortunately, not much of publicized writings which provide detailed accounts of either how his educational philosophy on ECE was formed or how he converted that philosophy in to a concrete educational method, and which clearly elaborate his exact method can be found. Though Malaguzzi authored just a handful of books on the topic of his approach to ECE, majority of which are in fact handbooks containing collections of writings and speeches he gave at training occasions, conferences, and conventions, very little of what he wrote or said about ECE is available in English (Cagliari et al., 2016). But Dr. Montessori, whilst writing copiously on the various topics which defined her life's work: education, child development, humanitarianism, and social change, also wrote extensively and elaborately on both the gradual formation of her educational philosophy through her unique approach of 'following the child' and the subsequent development and continued refinement of her method aimed at successfully educating the child of three-six years of age (AMI, n.d.-a). These extensive writings by Dr. Montessori allow to gain a clear insight in to both her educational philosophy and her specific method of education, an essential for securing a deeper understanding of the elements which are related to both its direct and indirect learning outcomes. While making available ample authentic content for analysis, the direct access these writings allow to the thought processes of the founder makes the MM most suitable for an in-depth qualitative analysis of an abstract concepts such as SS development.

h. The educational method tested and refined through empirical research by the founder:

The MM which was developed by Dr. Montessori based on her observation of the child's natural development in a prepared environment was continually tested and refined through experimentation throughout half a century before her death (Lillard, P.P., 1972). In comparison, the original curriculum and teaching methodologies developed by Steiner over a mere period of three months during the establishment of the first Waldorf School in 1919 is what still forms the basis of the pedagogical approach taken in Waldorf education all around the world (Stehlik, 2008). Given that Steiner lived only six years after the introduction of his method, he couldn't have anyways had time to empirically test and improve his method as done by Dr. Montessori. As Reggio Emilia was not developed by Malaguzzi alone, but with the involvement of many others, and his program was absorbed in to the government system soon after its development (Edwards, 2002), 'the refinement of the authentic method through empirical research conducted by the founder' proves to be irrelevant. Therefore, the extended refinement of the MM by its founder via empirical means makes it the most proven method of ECE, and therefore the most suitable for an in-depth study steered in search of knowledge.

i. Time and location tested by the founder with focus on the development of the universal normal child:

Both Reggio Emilia and Waldorf systems of education arose in the aftermath of armed conflict to cater the resulting need to rebuild society (Cagliari et al., 2016; Barns, n.d.). Therefore, they reflect a particular contextualized value position each as their objectives align with certain socio-cultural and political backgrounds specific to each. Whereas the original focus of both

these systems fell on children of a certain point of time who went under certain unique conditions, the MM which arose out of Dr. Montessori's desire to improve education of the normal child is not bound by anything but their age. The natural manifestations of the normal child being a universal phenomenon, the MM for ECE which has its roots in Dr. Montessori's empirical observations of the normal child (Lillard, p.p., 1972) is generally applicable to all children of that specific age regardless of either time or location of their existence. This fact tested and proven by Dr. Montessori makes the MM the best choice for a study focused on ECE and skills development in general.

j. Preserved authenticity of the program:

Due to its informal and liberal approach to ECE, preservation of the authenticity of the method was never a concern for Reggio Emilia. Therefore, it entails neither teacher certification nor program accreditation. Also as time elapses, Reggio Emilia which lacks in both sound philosophy and program structure continues to expand the use of materials so as to include everything possible in the child's learning and development (Wien, 2008 in Aljabreen, 2020), thereby leading the modern programs to be termed 'Reggio-inspired'. But Waldorf and Montessori, both of which are formal educational models, practice means such as formal teacher training, teacher certification, program accreditation, and continued supervision and authorization for preserving the authenticity of their programs. Going a further step forward in authenticity, not just the method of education, but also the materials used are kept authentic throughout the years in the Montessori program. Based on that Dr. Montessori had confirmed that the didactic material developed by herself and her collaborators are sufficient to comprehensively cover all age-bound natural learning requirements (Montessori, 1989 in Lillard, 2012), authentic Montessori is unique in its continued use of materials designed over a hundred years ago with strictly no additional materials used in the program (Aljabreen, 2020). The AMI, the organization Dr. Montessori established to protect the authenticity of her program, has by now grown to become a global network. The guaranteed authenticity of the AMI Montessori ECE program in all aspects including materials used, teaching methods, teacher role, physical classroom arrangement, and disciplinary practices makes the MM the ideal candidate for an in-depth multi-method qualitative analysis for reasons of the expectable compatibility between the original writings by Dr. Montessori and the inputs from current AMI ECE practitioners.

k. Presence in Sri Lanka in its authentic form:

Given that Reggio Emilia does not have valid teacher training and accreditation processes, the only authentic Reggio Emilia establishments are located in Northern Italy, in and around the village of Reggio Emilia where the method originated (Chicken, 2022). But authentic Waldorf and Montessori establishments are located all around the world for reason that their authenticity is protected by governing bodies such as The International Association for Steiner/Waldorf Early Childhood Education and the AMI. Yet when it comes to Sri Lanka where the primary data for this particular study were collected, only Montessori has its presence in its authentic form. The Good Shepard Maria Montessori Training Center located in Colombo was entrusted

by Dr. Montessori herself to carry on and safeguard her method of ECE in the country and is an AMI affiliated teacher training center that offers Montessori Primary certification locally. The authentic Montessori program thereby being well established locally acted as an additional plus point for selecting the method for this particular study.

Table 1: Comparison among Reggio Emilia, Waldorf, and Montessori on their suitability to be selected for the study

Criterion	Reggio Emilia	Waldorf	Montessori
Comprehensive curriculum aimed at whole-child development			**
Well structured as a cohesive curriculum			**
Flexibility in the curriculum which enables adaptability over time and location	**	**	**
Educational method based on the founder's own educational philosophy		**	**
Founder's educational philosophy was based on a strong knowledgebase in all areas of education, child development, and subject-specific knowledge		*	**
Part of a larger plan of continued education		**	**
Exact method of education is extensively elaborated and clearly documented by the founder			**
The educational method tested and refined through empirical research by the founder			**
Time and location tested by the founder with focus on the development of the universal normal child			**
Preserved authenticity of the program		*	**
Presence in Sri Lanka in its authentic form			**

METHODOLOGY

This Explanatory Sequential Mixed-methods Study (Ivankova et. al., 2006; Creswell, 2014; Subedi, 2016) was designed in line of the overarching research objective: To evaluate the extent to which the AMM for ECE encompasses the contemporary 21st-century know-how of early SS development, and to explore how various specifics pertaining to the AMM for ECE contribute to the development of individual 21stCSS in EL, the two consecutive phases of which were respectively led by the two research questions:

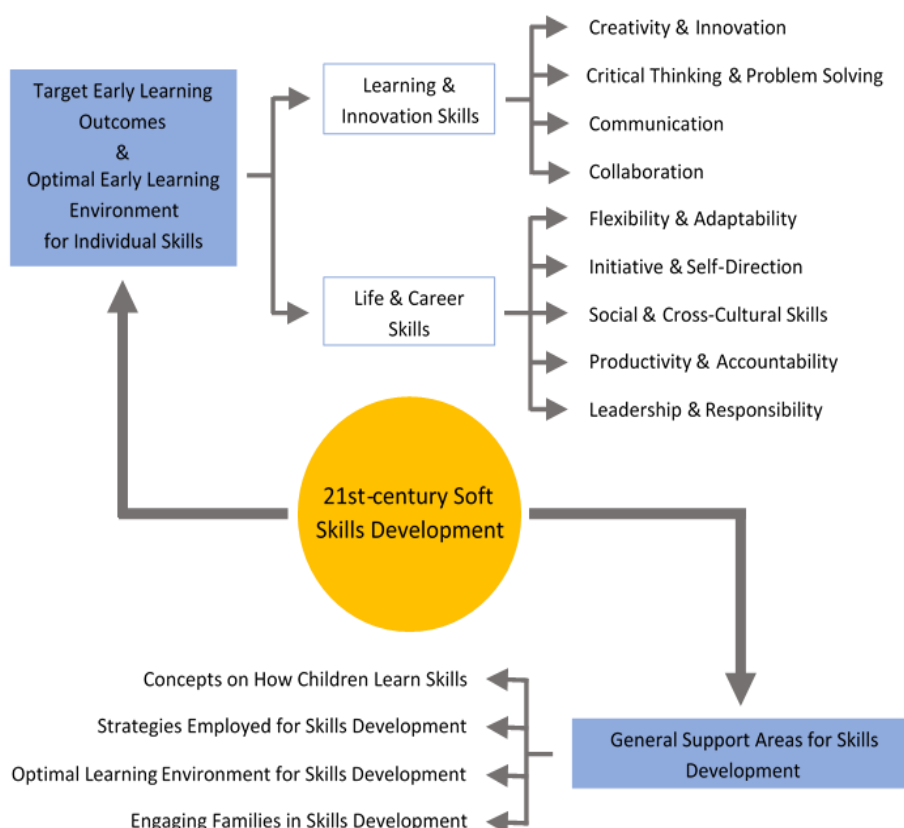
RQ 01 – To what extent is the AMM for ECE in line with the P21ELF in developing 21stCSS in EL?

RQ 02 – What specific elements pertaining to the AMM for ECE are contributive to the development of individual 21stCSS in EL, and how?

Based on both that the P21 framework's much detailed conceptualization of SS and its much wider adoption compared to all other frameworks (Dede, 2009) make it the best suited framework to work as a 'baseline' or a 'reference point' for a comparative analysis (Chu et al.,

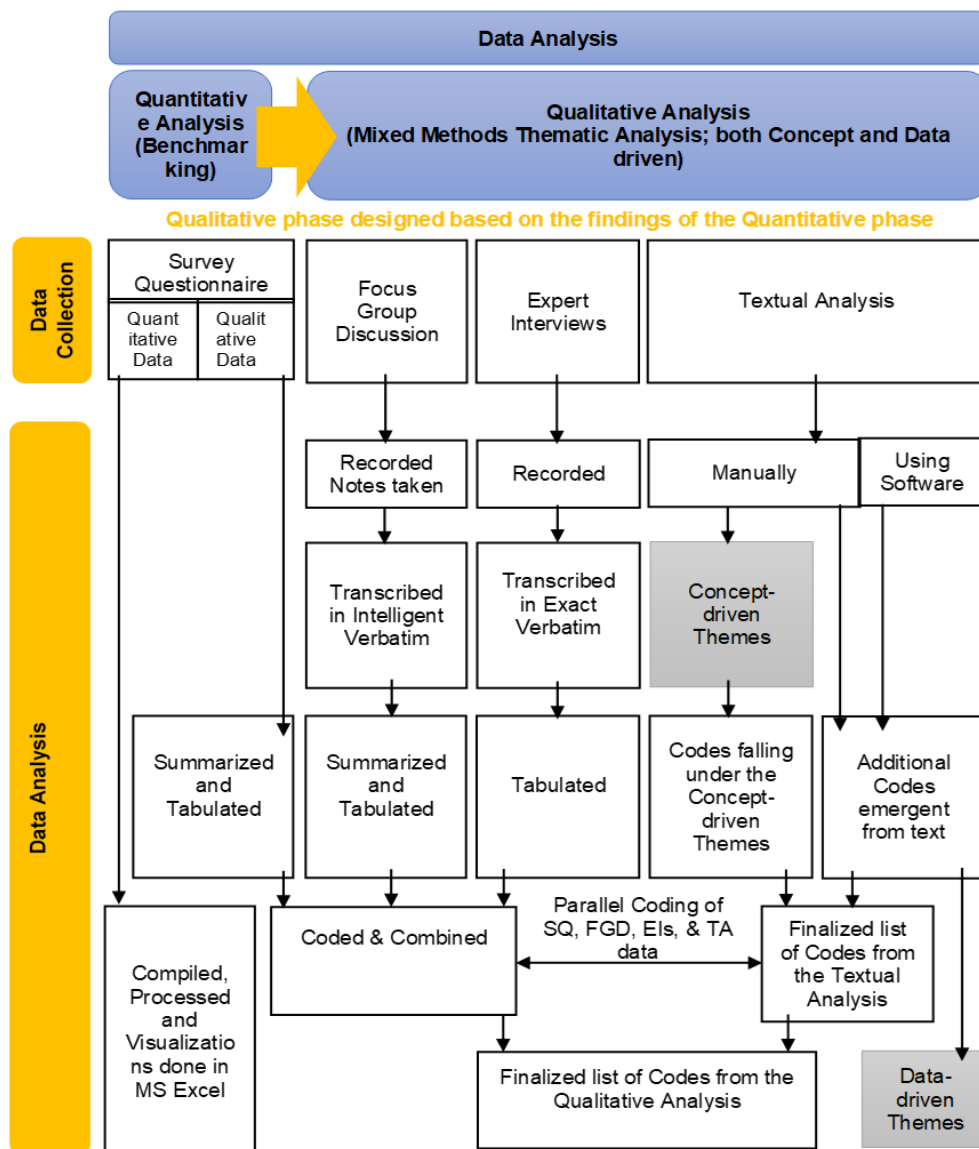
2017), and moreover that it is the only standard SS framework with an extension focussed on SS development in EL, the P21 Framework was selected to map the conceptual framework for guiding the study, and subsequently the P21ELF was used to structure the process of data collection in both phases.

Figure 1: Conceptual Framework for the Study [Adopted from the P21ELF (P21, 2017) and the P21ELF Implementation Guide (P21, 2017)]



The quantitative data gathered in the initial phase from 42 AMI qualified Montessori ECE practitioners through a survey instrument employing a Likert Scale was analysed using Descriptive Statistics (see Sumanasinghe & Sethunga, 2021). The qualitative data gathered in the second phase through multiple means: 4 Expert Interviews and a 6-participant Focus Group Discussion all involving AMI qualified ECE practitioners followed by an in-depth Textual Analysis of 14 books, 7 of which were authored by Dr. Montessori herself; 41 lectures given by Dr. Montessori; and 29 journal articles together with the qualitative data collected in form of comments during the initial phase of the study, were thematically analysed.

Figure 2: The Methodological Framework for the Study



RESULTS

The findings of the initial quantitative phase concluded that the AMM for ECE is significantly in line with the P21ELF in facilitating the Early Learning Outcomes related to each of the P21 21stCSS, with the exception of a handful of facets which were found to be not in line with the P21 Framework mainly for the reasons of either being irrelevant for comparison or being in contradiction to them due to the unique way of Montessori (see Sumanasinghe & Sethunga, 2021). These finding therefore provided the base to predict the success of the proposed

qualitative in-depth study carried out for the purpose of finding Authentic Montessori Elements (AME) which are contributive to the development of individual 21stCSS in EL, and confirmed the use of all the 9 P21 skills used for the initial phase of the study for driving such a qualitative inquiry. The findings of the consecutive qualitative phase of the study indirectly led to the compilation of a large array of AME, a number close to a 100, which were found to be contributing to the development of individual 21stCSS in the EL. The Thematic analysis had them categorized under 9 specific themes: Physical Environment; Temporal Environment; Social Environment; Teacher Quality; Curriculum Design; Curricular Elements; Teaching Methods and Practices; Traits of Learning Materials and Activities; and Classroom Policies and Practices, with certain elements which could neither be placed under those categories nor could be combined in to form additional categories placed under ‘Other Program Traits’.

The findings in relation to individual SS encompassed ample information as to which individual AME contribute to the development of each of the 9 individual P21 21stCSS in EL, and how. Furthermore, the Thematic Analysis produced evidence pertaining to 19 additional SS: Global citizenship; Teaching/Presentation/Demonstration; Observation/Attention to detail and Prediction/Foresight; Analysis and Synthesis; Imagination; Curiosity/Exploration; Self-discipline/Self-control/Self-regulation/Wilfulness for self-restrain; Concentrated attention; Self-reliance/Independence; Enthusiasm for learning; Self-confidence/Self-esteem; Self-motivation/Achievement orientation/Wilfulness for perseverance; Continuous learning/Life-long learning; Patience; Judgement/Decision making; Orderliness/Methodicalness; Precision/Perfection/Mastery/Exactitude; Practicality; and Memorizing.

CONCLUSION

The confirming nature of the findings of the preceding quantitative benchmarking analysis which brought to light the great extent to which the AMM for ECE encompasses the contemporary knowledge of developing SS in EL paved way for the launching of the succeeding phase of the study which aimed to explore the specific AME which contribute to the development of various individual SS in EL. The decision to use the MM as the subject of this Mixed-methods Study that had been informed by the supportive literature furnished in this paper as setting it apart from among other classic methods of ECE as the best candidate for such an in-depth qualitative study, was rewarded with an abundance of findings during the succeeding qualitative analysis which enabled both the accumulation and the categorical compilation of AME pertaining to the Montessori Primary programme as well as the mapping of those elements with individual SS development: the 9 P21 SS as well as 19 additional SS.

Therefore, both the quantitative and qualitative findings of the study stand as confirmatory evidence of the aptness of having selected the AMM as the subject of the overall study which was led in search of specifics which contribute to the development of individual SS during the stage of formal ECE.

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