



# Second Language Corner for Children’s House: A Practitioner–Researcher Journey Into Bilingualism in Montessori Education

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**Abstract:** This work reports, from a qualitative research perspective, the development of an English Corner project for a preschool Children’s House classroom in central Mexico over the course of a 3-year period. It shows the transition of a language specialist over six consecutive periods of work, from a traditional understanding and practice of teaching English as a second language to young learners into a more comprehensive one of the Montessori Method. The analysis of my own practice is used to recover insights through a reflective process with the intention to develop a second language (L2) Montessori program for 3- to 6-year-olds that aligns better with Montessori pedagogy. Variables such as instruction time, setting, group constitution, materials, and teaching and learning strategies allowed for certain aspects to arise as leading points of interest for the focus of the analysis and the methodological and pedagogical adaptations that followed each period. This paper is an attempt to fill the gap between the need to deliver a second language effectively in Montessori education and the lack of guidance for doing it the Montessori way; it is especially for practitioners who do not have a Montessori background but also for Montessori-trained teachers for whom more-specific preparation would aid their practice. I also hope to stimulate further research in the field of second language acquisition and multilingualism in Montessori education at every level of education.

Second language (L2) learning in Montessori education is not new; however, there is very little published literature about this aspect of the Montessori curriculum (Jendza, 2016; Rosanova, 1997; Winnefeld, 2012; Wysmulek, 2009). Despite the significant growth of research interest in Montessori education (Bagby et al.,

2014), only one study about languages (Campbell, 1998) has been reported in literature reviews of Montessori education and practice (Bagby, 2007; Bagby & Jones, 2010; Bagby et al., 2014). More recently, the first stage of a participatory action research study examining foreign language in the Montessori environment was

published (Jendza, 2016), and another one investigating multilingual competence in Montessori education (Consalvo & Tomazzoli, 2019) is currently being carried out, also for the Elementary (ages 6–12) level. Only a few Montessori publications have reported on the matter of languages within Montessori education (Berger & Eßwein, 2016; Fafalios, 2007; Rosanova, 1998) and on Montessori-based experiences in the field of autonomous language learning (Berger, 2019a, 2019b; Winter, 2020). This scarcity of published research reflects the limited literature in this field of Montessori education and the nature of the knowledge available.

Currently, there is no official or established curriculum or model for second language acquisition (SLA) within Montessori education. Instead, in accordance with what Winnefeld (2012) and Consalvo and Tomazzoli (2019) have found, variety exists in Montessori approaches to language learning, although the approaches may share common features. The way in which certain trends are more likely to be found in certain regions may be, in part, a response to local governmental policies, as is the case in Germany (Winnefeld, 2012). This practice leaves every school with enough freedom to implement a variety of L2 programs as part of the Montessori education they offer.

### **Second Language Acquisition**

Different SLA theories offer explanations and evidence for how language learning occurs. Menezes (2013) reviewed the main SLA theories and presented her own interpretation of SLA as a complex system in which the previous contributions of SLA theories are recognized. Behaviorism has shown us some important differences between acquisition of a first language and SLA. Acculturation has helped us understand the effectiveness of immersion programs. Universal grammar theory expanded our understanding of language acquisition, showing language as an expression of the individual's mind. Krashen's (1985) input hypothesis, based on the notion of comprehensible input and aided by providing adequate sheltering, offered a plausible explanation for the acquisition of grammatical structures. Interactionist SLA theories introduce the role of the social aspect of language and language learning that are conceived as social practices within these frameworks (Menezes, 2013).

Specific practices of language teaching and learning use one or more of these underlying language-learning theories, regardless of how conscious teachers are of these

theories and their concepts. Language practitioners and the strategies they implement with their students may shift or become integrated into teachers' understandings of their discipline and, in turn, influence and modify their beliefs and practices in subtle or radical ways. Similar to how students reach the "edge of chaos," in other words, the narrow zone between order and chaos in which systems learn and evolve (Ockerman, 1997) for SLA (Menezes, 2013, p. 409), teachers, as active learners of their trade, are also influenced by more than what happens in their classrooms. This is especially true in contexts, such as Montessori environments, where a great deal of disturbance exists between what teachers learned in their training and the way the Montessori Method works, forcing teachers to abandon a zone of stability and leading to self-organization. Dealing with discrepancies and anomalies between what they learned and what they experience in this context, especially if it is new to them, sometimes provokes creative responses to overcome the clash between their belief system and what their practice demands, with the goal of reaching a coherent equilibrium in a particular classroom.

### **Language Area in Montessori Education**

Language, which includes oral language, writing, and reading, is one of the four areas in which the Children's House Montessori curriculum is organized. There are materials and practices to support each child's language development, through individual work and interacting with others in relevant opportunities for language use. Maria Montessori observed the natural development of first language acquisition in the child and developed the language area of the Montessori Children's House curriculum following that sequence. She attempted to mimic the subconscious way in which children acquire their first language, moving forward to writing and then reading, while favoring self-expression and enhancing vocabulary enrichment and refinement. According to Dr. Montessori's pedagogy, children find nutrients for the development of their mind, body, and personality in their surroundings, and languages can be part of it.

*The tiny child's absorbent mind finds all its nutriment in its surroundings. Here it has to locate itself, and build itself up from what it takes in. Especially at the beginning of life must we, therefore, make the environment as interesting and attractive as we can. (Montessori, 2007a, p. 87)*

The prepared environment in the Children's House is designed to allow learning to occur naturally. Children who are learning benefit from the absorbent mind that naturally assists them in learning from their environment. The sensitive period of language directs the child's attention to this particular aspect in the stimuli of their environment. The absorbent mind that Dr. Montessori observed in early childhood allows children to learn languages of any social context, regardless of number and presumable complexity (Montessori, 2007a).

*A special mechanism exists for language. Not the possession of language itself, but the possession of this mechanism which enables men to make languages of their own, is what distinguishes the human species. Words (in any language), therefore, are a kind of fabrication, which the child produces, thanks to the machinery, which he finds at his disposal. (Montessori, 2007a, p. 108)*

### **Second Language Learning in Montessori Education**

Dr. Montessori did not explicitly discuss in her work a specific approach to SLA, although she was well aware of the existence of "English medium schools" in India, which would now be called English-language immersion schools (Rosanova, 1997). She was also believed to be in favor of young children learning a foreign language and preferred the direct conversational method, using games, songs, pictures, and charts (Stevens, 1913, as cited in Bronsil, personal communication, June 22, 2020).

Nevertheless, the transferability of the strategies and materials of the Montessori language area was not specifically applied in SLA. The urge to include L2 programs in Montessori schools arrived a bit later, partly as a result of evolving societies and their contemporary needs. In our current globalized society, SLA is an even more essential part of education, including Montessori education.

Given the lack of literature on SLA in Montessori settings and few references to it in Dr. Montessori's writing, Rosanova's (1997) report on early childhood bilingualism in a Montessori Children's House is particularly relevant. Rosanova drew from language acquisition and bilingualism literature to develop a foreign-language-immersion Montessori program for 3- to 6-year-old children in a Montessori setting.

Based primarily on the stages of SLA proposed by Alvarez-Martina et al. (1984, as cited in Rosanova, 1997), Rosanova identified four typical developmental stages

children in the Montessori environment go through while becoming bilingual: pre-production, early production, speech emergence, and intermediate fluency. He observed and recorded these stages both in individual children and in the classrooms, until both became bilingual. Assisted by the principles of Montessori pedagogy, children could communicate effectively in what was once a foreign language, and the classroom naturally supported this language acquisition (Rosanova, 1997). The absorbent mind that characterizes children in early childhood allows them to learn more languages when they are available in their social context; that is, if there is a second language in the environment, the child is perfectly capable of absorbing it naturally and effortlessly, as long as this happens during the first 6 years of life. It is necessary to incorporate whole-language strategies when developing L2 programs in Montessori settings as they provide useful clues that help children guess meaning from objects, daily routines, and their prior knowledge.

*If the teacher's words cannot always be understood, then it is absolutely critical that the environment speak. The level of competence and commitment to Montessori principles needs to be higher than what one might expect in a monolingual Montessori program. (Rosanova, 1997, pp. 13–14).*

The child's natural motivation to learn is referred to as *normalization* in Montessori literature. It derives from children's ability to concentrate, assists their own development, and is especially critical for language learning because it entails a willingness to tolerate ambiguity and search for meaning (Rosanova, 1997). Following Krashen's (1985) comprehension hypothesis, Rosanova called these early attempts to guess the meaning of unknown words "guessability."

### **Language and Literacy Acquisition in Early Childhood and Bilingualism**

Snow's (1983) findings on language and literacy acquisition guide the physical and historical context for children during infancy to rely less on highly contextualized interactions and to show increasing decontextualization in the development of these skills. This is related to the guessability that children gain when exposed to a language that was foreign in the beginning and later became understandable through context and their own attempts to find meaning.

Cummins's study (1996, as cited in Fafalios, 2007) on language and identity distinguished three ways to acquire and develop a second language: (a) *simultaneous bilingualism*, which applies to children who are exposed to and develop different languages at more or less the same time; (b) *successive bilingualism*, which applies to children whose home language is well established and who learn a second language when they come to school; and (c) *receptive bilingualism*, which refers to children who are able to understand two languages but express themselves in only one (Cummins, 1996). Cummins's findings were consistent with what Fafalios (2007) observed in bilingualism in Montessori contexts. The stages of a classroom becoming bilingual are similar to those of individuals. Rosanova found that, just as an individual in a group becomes bilingual, the social environment also becomes bilingual as it consolidates over time. The bilingual process for first and subsequent generations of children in that community can be differentiated, as there are more resources and exposure to the target language now.

*The first children to reach the third year from within the children's community are pioneers. . . . But the second group of children to reach the third year within the children's community have seen their predecessors at work [in terms of a bilingual environment]. . . . This is an astonishing and important accomplishment because the younger children are now being exposed to episodes of full sentences and connected narrative which are neither directed by nor centered by the teacher. (Rosanova, 1997, pp. 19–20).*

The social aspect of the Montessori environment and its effect on the individual learner is key to the essential elements of Montessori education, also referred to as the *Montessori trinity*, which includes setting children free in a prepared environment with a specially trained teacher (Montessori, 2012).

### **Constructive Alignment and the Importance of Materials in Montessori Education**

John Biggs's (2006) *constructive alignment theory* proposed to align the objectives of intended learning outcomes with teaching methods and learning and assessment tasks. The use of specially designed materials is part of effective implementation of the Montessori

Method. Montessori materials create a gestalt for each area and classroom, balancing purpose, progression, and the redundancy and interweaving nature across them (Lillard, 2008).

In traditional Montessori classrooms, the only materials available to students are those created by Dr. Montessori herself (Lillard, 2008). Bringing other materials into the Montessori classrooms poses important concerns (Lillard, 2008, 2011, 2012; Lillard & Heise, 2016). However, because of the lack of Montessori materials for SLA, there is an urgent need to explore how alternative or supplemented materials can be used without damaging the integrity of the Method, perhaps eventually becoming Montessori materials that support the developmental SLA needs of children or assist in the process of becoming bilingual.

Montessori educators are encouraged to follow the child and use observation in the classroom to discover how to best support each child's development and to explore their own professional interests. Epstein (2012) proposed the observation CORE (Connect, Obtain, Reflect, Engage) as a way to accomplish this. The freedom to passionately explore how to implement English as a second language (ESL) in a Montessori Children's House was the starting point of my inquiry. Some general knowledge about the Montessori Method informed this study, particularly in relation to the four areas of the Montessori curriculum and materials designed specifically for those areas, rather than didactic materials or teaching resources and basic linguistic notions of SLA in early childhood.

### **Different Models of Implementing Languages in Montessori Schools**

Over the years, schools have responded in an array of ways to the ever-increasing need to provide language education. The need for SLA strategies raises the question of how to implement language learning in Montessori schools in a way that better responds to the principles of the Montessori Method.

Based on the information provided by a number of practitioners directly involved in language learning in Montessori schools and other Montessorians knowledgeable on the topics of bilingualism, multilingualism and SLA, Table 1 shows the different models that have been identified (Rosales Chavarría, 2019).

**Table 1***Language-Learning Implementation Models in Montessori Schools* (Rosales Chavarría, 2019)

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

*Note.* 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 school constitutes their L2 and the additional language can in turn be their third language.

The extent to which each model is distributed among Montessori schools is yet unknown. However, each model responds to particular social contexts and circumstances. The models depend on the needs and characteristics of the communities they serve, the knowledge and abilities of the teachers, and the possibilities that these and other variables, such as available resources and level of priority given to this aspect of the curricula, play in schools' decisions. It is the teachers and management teams in every school who decide the approach favored, or actually chosen, to deliver language education, and to what extent, in each classroom and in the school.

Nevertheless, we lack a strong theoretical and empirical foundation to align SLA theories and methodologies with Montessori education principles and practices to be able to further our understanding of this area of the curriculum that has grown and developed for decades without much formal attention. This study demonstrates how the Montessori trinity works for SLA using the results observed in the early stages of L2 lessons given outside the Montessori classroom, as well as after the Montessori classroom became a prepared environment for SLA.

## Methods

### Statement of the Problem

Individual teachers and communities have been developing their own practical approaches to teaching languages in Montessori education. However, this knowledge has been neither broadly disseminated

nor formally developed to create a body of knowledge that could lead to a shared curriculum or standardized practices. Instead, there are a variety of ways, based on a somewhat trial-and-error approach, which may share common features (Consalvo & Tomazzoli, 2019), or a disconnect between the Montessori Method and the traditional methodologies employed for L2 in Montessori schools (Wysmulek, 2009). Regional efforts have been made to provide certified Montessori teachers with optional professional development in foreign language learning (Winnefeld, 2012). At the heart of this study, then, is the absence of appropriate programs that contribute both to the development of the Montessori methodology and language-learning theory and strategies.

This work is an attempt to contribute to the field of language learning within Montessori education, particularly for the first plane of development, that is, Early Childhood from 0–6 years of age. It is a practitioner–researcher account based on my own journey as a language specialist. It shows the transition from a traditional understanding and practice of teaching ESL to young learners to a more comprehensive one that relies on and is rooted in Montessori pedagogy. This study details the process, stages, and variables that arose in developing an L2 program for a Children's House classroom (i.e., preschool and kindergarten level) in a Montessori school in central Mexico, as it shifted from an L2 lessons model to an L2 Corner over the course of 3 school years (i.e., 2015-2018), eventually becoming an immersion program.

### **Site of the Study**

The study school is a private Montessori school in central Mexico; there are no public Montessori schools in the country. It is one of several Montessori schools in Mexico that provide Montessori education at the preschool and kindergarten levels. During the course of the study, the school had a population of approximately 100 students across all levels. The Children's House class had between 28 and 32 preschool and kindergarten children between 3 and 6 years of age; the children shared one classroom in the 3 consecutive school years of this study.

### **The Experiences of the Practitioner–Researcher as a Bilingual Educator**

I started my practice in mainstream settings, teaching ESL to adults and children in Mexico. I began my journey in the field of languages in Montessori education as an L2 assistant for an Infant/Toddler community classroom. I then served as an L2 assistant and language specialist in a Children's House classroom before coordinating the English program for the study school for 1 school year. The next year, I became the ESL teacher for the Children's House classroom and gave up my coordinator role when I started this research project.

I experienced successive bilingualism by attending bilingual schools since childhood, with Spanish as my first language and English as my L2, and I mostly came to the position of ESL teacher in Children's House from a practitioner–researcher stance; I also had some knowledge of SLA teaching and learning methods, experience raising two bilingual children enrolled in Montessori education, and general knowledge of the Montessori Method gained during my experience and preparation as an Association Montessori Internationale 3–6 assistant.

### **Research Design**

The research methodology of this study falls within the framework of qualitative research, which entails an interpretive approach. This allows for the object of study to be flexible to the context and changing needs of the study. I faced some of the challenges that come with undertaking investigations in plurilingual educational contexts, such as the need for constant reflection on my own emerging ideologies in relation to language

and language education and handling research data in different languages (Dooly & Moore, 2017). I am both the researcher and the teacher in the study, and I was seeking results that were beneficial to my educational practice. I also interacted with all stakeholders during the aspects of the research process that addressed specific issues or problems; therefore, this study can be considered participatory action research in the field of education (Jacobs, 2016). It is also a case study that adheres to the core notions of qualitative inquiry (Farrell, 1994), which has gained popularity as the main tool of investigation in ESL in some Asian countries. Finally, the study uses reflexivity to communicate what I have learned from the field by proposing logical transferability of the findings to the reader (Park & Lee, 2010).

### **Participants**

This study involved second-year (Y2) and third-year (Y3) children of the Children's House class in 2015–2016 and the whole class (first-year [Y1], Y2, and Y3 students) of the Children's House in 2016–2017 and 2017–2018. Parents were informed that my work in Children's House was intended to develop an ESL program for the school, and I would provide ESL instruction for their children.

Most children were native speakers of Spanish, and English was their target language. English was chosen as the target language because we wanted the children to have the future opportunities knowledge of English could bring (Cummins, 1996). Three children were simultaneous bilinguals because of the bilingual constitution of their families; two of these children had mothers who were native speakers of English, and the mother of the other child was a native speaker of Portuguese. All three mothers spoke their native languages to their children. One child was a successive bilingual to whom English was spoken at home. At the beginning of the study, the three children who knew English from home presented themselves as receptive bilinguals; that is, they fully understood English but chose to express themselves in Spanish in social contexts with children who were predominantly from Spanish monolingual families. Although many parents were bilingual because of the socioeconomic backgrounds of the families in the school, most spoke Spanish at home, with some extracurricular exposure to the target language through trips, TV programs, English lessons, films, and music.

**Table 2***Phases in the Transition Process From an L2 Lessons Model to an L2 English Corner Model*

Phase & date	Location	Modality	Time allocated	Group composition	Main features	Themes for analysis focus
1: Sept.–Dec. 2015	Studio	L2 lesson with fixed groups, times	90 min., 2 days / week; 45 min. then 30 S per group	Y2–Y3 (2 groups: 12 S each, then 3 groups of 8 S each)	Wide scope of themes & activities; little recall of vast content. Limited semantic categories; need of materials	
2: Jan.–June 2016	Studio	L2 lesson with fixed groups, times	90 min., 2 days / week; 30 / group	Y2–Y3 (2 older S groups, 1 nonleaver group)	Class structure: Opening/closing & middle variable activities. Production of L2 materials; level / age criteria	
3: Sept.–Dec. 2016	Library	L2 lesson with fixed groups, times	90 min., 2 days / week; 30 / group	Y2–Y3 (1 group of younger S, 2 new S and older S from previous year)	Role of nonleavers from previous year; materials alone in classroom shelves, L2 curricula for 2nd & 3rd yr; need for mediation with materials	
4: Jan.–June 2017	English Corner	L2 corner in classroom	4 hr, 2 days / week	Y1–Y3 mixed (groups of 4–6 S)	Being in the Montessori classroom, Y1 satellite learners; Y3 busyness	
5: Sept.–Dec. 2017	English Corner	L2 corner in classroom	4 hr, 3 days / week	Y1–Y3 mixed (groups of 4 S)	Fixed work session structure: opening, rhymes/songs/poems, book, memory, game. Attendance analysis; Y3 learning outcomes	
6: Jan.–June 2018	English Corner	L2 corner in classroom	4 hr, 3 days / week	2 older S groups Y1–Y3 mixed (groups of 4 S)	Different session structure for leavers	Introduction of reading & writing in L2 for Y3 / leavers

Note. S = students; Y1 = first-year students; Y2 = second-year students; Y3 = third-year students, 2nd & 3rd yr = second and third years of student's experience in Children's House classroom; English Corner = English Corner in Children's House classroom, part of the prepared environment. \* Older students were students in their last year of Children's House and moving into the next level for the next school year.

There was a collaborative and supportive relationship among the Montessori teachers, the principal, and the parents that made this study possible. Some parents even helped make materials for the English Corner. The school community knew that I was undertaking a research project in addition to my practice as an ESL teacher for the Children's House classroom. (I ceased coordinating the school's language program when I took on the ESL teaching role.) Other adjustments during the course of the study included location changes, the cohort of children considered for ESL, and the amount of time allocated for English instruction (see Table 2 for a more detailed description of these changes). At the end of the research project, I presented the study findings to the school community.

### Data Collection and Analysis

Data collection and analysis are interwoven in qualitative research, so a number of sources were used to collect information and guide the research process. I started as an L2 practitioner with a keen interest in reflecting upon my practice and an enormous desire to find a Montessori way for teaching and learning English in the Children's House. I started keeping detailed notes of what I did and recorded my insights from that experience, which influenced my decision-making in my own practice. These notes created a *thick description* (Geertz, 1973) from a grounded approach of data collection and analysis through an extended period of fieldwork that took place over the course of 3 consecutive school years. This process was informed by multiple data sources, many of which were directly related to my practice with the children in the classroom. These sources included day-to-day data input such as lesson plans, field diary entries, and a journal to exchange information with the rest of the class team or meetings notes; thematic writings on a specific topic to direct my analysis or the focus of my work on a particular aspect; and periodic reports that described my practice, prepared near the end of every semester of work. The semester reports organized the insights I had gained through reflection; they also proposed suggestions and alternatives to further the objective of developing an L2 program for preschoolers that aligned with Montessori principles. Before the start of the next term, I presented and discussed these reports with the classroom teachers and the school's principal for both informational and decision-making purposes.

## Research Findings: Six Phases of the Journey

The results for this study are presented in chronological order according to phase; each phase is approximately six months and corresponds to the first and second semesters of each school year. The phases emerged from the need to make adjustments that reflected the knowledge I gained during the previous phase, moving us forward in the development of an ESL program for Children's House.

Each phase in Table 2 includes (a) a description of the main characteristics considered during the period of time, (b) the focus of the analysis for that working period, and (c) a reflection on the outcomes that provided insight based on the experience with the children and that supported the decision-making process for the next stage in the implementation process.

Early in the study, I created a general vision for the L2 program for Children's House that I wanted to design:

*That children progress in their competence to use the English language to communicate. The dream (vision) is that the L1 process in which they acquire the ability to read and write, through their work with the materials, would be similar to that of L2.*

When I read this statement now—after having made the journey of attempting to turn this vision into a practical approach to language learning—it strikes me how little I knew then of what it would take to transform not only my practice, but also my understanding of the intricate relationship involved in the Montessori trinity (i.e., the child, the prepared environment, the prepared adult), particularly related to a second language.

### Phase 1

L2 lessons took place in the school's studio. Defining the groups' size and composition, as well as the timing of sessions, was a compromise within the established teaching framework. Children were initially divided into two groups (and later three) for consecutive L2 lessons outside the Montessori classroom. Only the Y2 and Y3 children took part in the ESL lessons. The Y1 children of this class were not considered for L2 provision beyond the opportunities the bilingual Montessori teacher provided for all in the time-allotted model scheme (see Table 1 for a description of this language-learning implementation model in Montessori schools).

A wide range of topics and vocabulary was introduced in Phase 1. Songs and stories from children's books were used for vocabulary and language structures. I intended to provide a variety of opportunities for children to listen to certain vocabulary, both isolated and in context. I used lesson plans that considered several aspects: date, number of students in each lesson, theme and vocabulary to be studied, materials, objective, activities, and reflection. I used the same format for all consecutive lessons. Soon, opening and closing songs marked the beginning and end of the lesson, while the other activities varied.

After evaluating children's learning near the end of the first period of the study, I was surprised to learn that children recalled very little of the vast vocabulary that had been presented. To achieve the desired learning outcomes, I knew I had to (a) be consistent in using the vocabulary I wanted them to learn throughout the sessions (I no longer thought of these sessions as traditional L2 classes), (b) continue the reading and singing they enjoyed and that offered language input in context, (c) provide more opportunities for language output, and (d) incorporate materials that would support my work for more than just a particular session.

The need for materials that I could continue to use with the children and whose limited semantic categories would allow more repetition to take place became a parallel endeavor to the work I did with the children in the classroom in the next phase.

## Phase 2

Of the three groups working in the studio at designated times, two groups were composed of older children in their last year in Children's House and one of children who would continue for another school year, allowing some continuity in the latter group. The composition of these groups highlighted the need to create expected learning outcomes for Y1, Y2, and Y3.

The work during the L2 sessions continued with a similar structure to the previous period, which included several components.

- Nonvariable activities
  - Opening routine
    - Good morning song
    - Greeting
    - Counting

- Goodbye routine
  - Goodbye song
  - Individual assessment task (the addition to my practice for this period)
- Variable activities
  - Presentation
  - Singing time
  - Reading time
  - Game

Each session also offered a brief individual assessment task to estimate students' learning and provide further use of the target language that had been the focus of the session.

A basic vocabulary syllabus was organized around selected semantic categories: body, food, actions (i.e., verbs), clothes, school objects, animals, and transportation. I discussed with the classroom teacher the chosen categories, the vocabulary selection, and the Montessori characteristics of the materials. Parents helped produce the materials.

The task of making materials to support children's L2-acquisition needs paralleled the implementation and development of specific procedures for their use with the children. I had to think about materials for L2 using the same steps Dr. Montessori had taken to develop the materials she proposed for the Montessori classrooms: identify the developmental need they align with, observe the children with the materials, revise and refine them, and have a clear purpose for each material separately and in relation to other materials (Lillard, 2008).

By the end of the school year, the objects and materials used during the L2 sessions were brought into the regular classroom. However, children were not independently using the materials. I then created a proposal for L2 materials—not just the objects used during the L2 session—to go into an English Corner inside the classroom the following school year. That set of materials comprised vocabulary cards, songs, rhymes, poems, books, and games.

## Phase 3

The studio was no longer available, so the L2 sessions were relocated to a designated area in the school library. At the start of the school year, I adapted my lesson plans to consider aspects brought to my attention by a professional development opportunity. I planned each

session according to what had happened in the previous one and stayed on one topic as appropriate. Through their engagement in the activities and what they said, the children gave me cues about what did and did not work, which provided valuable information about their perceptions and understandings.

Working with mixed groups in a 5:3 ratio (i.e., five children who were already familiar with the L2 session structure and three newcomers to the school or previous students who were old enough to be part of the cohort considered for ESL services) helped the newcomers to adapt and settle promptly. Groups of mixed ages and abilities are a common feature of Montessori classrooms; for the L2 sessions, this mix meant that the children who already knew the routine were ready and willing to assist their peers in translating or communicating the expectations of the activities. Phrases like “*Yo no entiendo inglés*” (“I do not understand English”), “*No se qué está diciendo*” (“I don’t know what she’s saying”), and “*No se qué hacer*” (“I don’t know what I should do”) soon faded out. However, after the L2 session dynamics were clear to all, I failed to offer a new way for the more experienced learners to naturally progress in the target language. Motivation in the older children had clearly been present in the beginning of the school year but faded, in my view, because of a lack of progression in the materials and activities. This circumstance presented an opportunity to consider differentiated L2 curricula for Y2 and Y3 children and to start thinking about how the experience with the L2 could evolve from what they had learned in the first year of exposure to the target language. I also perceived that children were aware of their own knowledge of the L2. The children who had been in the English sessions the previous year were convinced they already knew English, although they were able to produce only simple words and short phrases. The other children said they did not know English yet, despite having linguistic resources at their disposal, such as a wider range of vocabulary.

The materials for the L2 lessons were stored in what we began calling the “English Corner” in the Montessori classroom and consisted of a couple of shelves where they were displayed. Before each lesson, each child was asked to take some materials from those shelves for our work in the L2 session and then to put them back after our L2 work outside the classroom. This activity gave them extra practice to meaningfully use the target language and was certainly better than keeping these

non-Montessori objects in the Montessori classroom. However, this practice required that I take a different approach to presenting materials to the children in the prepared environment of the Montessori classroom: for children to continue to develop their learning of the target language, the materials had to be presented and available for independent practice.

The new circumstance of being in a shared space in the school library, but directing this work only to Y2 and Y3 children, allowed the shared environment to become the Children’s House classroom instead. This development gave the Y1 children— not the other Elementary children in the library during the L2 sessions—the chance to be onlookers and made exposure to a second language available in a prepared environment. My presence in the Children’s House classroom started making the environment bilingual, although this program was not, at that time, intended to be an immersion program.

#### **Phase 4**

Moving into the Children’s House classroom was a significant change for the research project. The English Corner became a tangible part of the prepared environment. There was a period of adjustment for all— children and adults—within the now-common space of the classroom, and I was very respectful and observant of the natural flow that accompanied this new habitus.

The groups remained as they were before (i.e., only for Y2 and Y3 children), but this initial arrangement did not last long. Instead, small groups of four to six children were spontaneously formed by children who came to me in the English Corner to participate in an L2 session using the available L2 materials. As the number of interested children exceeded the number of possible group sessions, the time available for the English Corner was extended from 3 hours per week to 8 for the same 2 days. This new arrangement also considered Y1 children, who were particularly curious about my presence. They maintained a safe distance until they became acquainted with me and the work that the rest of the children in the class did in the English Corner; I called these Y1 children *satellite learners*. They approached the English Corner cautiously but with great interest, declining to participate until they were ready to join the L2 sessions. Y3 children, on the contrary, did not come very often.

Letting each child naturally approach the English Corner—or not—felt particularly important during this

period, as children seem to better know what they need and can manage; this was also true for me, especially in this stage of the process. The activities children chose freely also gave me relevant information about their interests and how I could explore those interests. I could observe the child in the natural environment provided by the small part of the Montessori classroom I focused on, in other words, the English Corner within the Children's House classroom.

Children in the study school were mainly successive bilinguals, that is, children whose home language was well established and who learned the L2 when they came to school; a few children came from bilingual families and exhibited receptive bilingualism at this point of the study. Without having the creation of an immersion bilingual environment in mind, the stages recalled by Fafalios (2007) served as a reference for my expectations of children's acquisition of the target language. These stages allowed me to measure progress within this framework. I expected to see these stages at a slower pace, because of the predominantly Spanish-speaking social context and because we were in the L2 classroom for a limited time each week.

### Phase 5

From the beginning of the school year, the English Corner was set up as part of the classroom environment and comprised several components: a round mat for sitting; songs, rhymes, and poems; memory baskets; games; books; and an observation chair.

Expanding the children's exposure to the target language—especially because English was not the dominant language of the community—supported increasing my time in the classroom for the next school year to 3 subsequent days. Therefore, a third day for the English Corner was added, which extended the time for L2 provision from 8 hours per week to 12, over 3 consecutive days, and made it available to all children in the class (i.e., Y1, Y2, and Y3 students). The L2 sessions had a fixed sequence of activities, and groups were limited to the first four children who came to the English Corner.

My presence in the classroom became more regular than before, providing more opportunities for the children to engage with the target language. This new circumstance required me to interact with the other adults in the classroom more.

My earlier observation and adaptation period greatly contributed to the clarity that normalization comes first

(i.e., having a harmonious environment comes before any other learning can happen effectively), so I shared with the other adults in the class my beliefs about the priorities of assisting children in their development. My understanding of the child in a mature Montessori classroom had increased, allowing me to concentrate on developing the target language. In practical terms, I was mostly able to speak only English with the children, while the rest of the teachers communicated with them in Spanish; the other adults supported my work by facilitating an eloquent environment. Normalizing the environment can be challenging in the early stages of Montessori immersion programs: it is harder for teachers to communicate effectively with children using a language they don't yet understand (Rosanova, 1997).

Children's confidence in using the L2 grew, and a lot of singing and private talk in English occurred. The teachers had reported this development before, and I now often witnessed it. Everyone in the class had become familiar with sharing a common space and using this other, increasingly comprehensible language, especially within the constraints of the English Corner. We were in what Rosanova (1998) defined as an *early production stage*, characterized by the mentoring and modeling that occurs among children of different ages and abilities and the spontaneous production of simple words and short phrases in response to comprehensible input, as well as the emergence of interpreting among the children.

During this phase, I analyzed the attendance distribution across year groups for that semester, which included low attendance (>30%), medium attendance (31%–60%), and high attendance (61%–80%) of the 25 sessions. I identified three categories of children from this analysis: very interested in the target language, averagely interested, and not interested. Most of the children in the high-attendance cohort, that is, those very interested in the target language, had a clear, self-driven interest in attending; they came to the English Corner sessions at least twice each week. Interestingly, this cohort included the three bilingual children in the class, who eventually came out of their receptive bilingualism to start communicating with me in English in the classroom. This development of the course gave the rest of the children more exposure to the target language and was an important factor in the English Corner's transition into a bilingual environment. Simultaneously, some of the children in the low-attendance cohort—those not interested in the target language—seemed to still be

getting to know their environment, absorbed by the work with other materials in the classroom, or struggling to become fully engaged in activities in general.

Making the English Corner part of the prepared environment of the Children's House classroom from the start of the school year created a significant shift in the development of a bilingual Montessori classroom. The collective and individual experiences in previous stages had contributed to this process. However, it was still not evident to me that the environment was bilingual; my focus was on the development of the children as bilingual, not on the environment. I was not then able to interpret this phenomenon as an immersion process that was happening simultaneously in both the children and the environment. I knew immersion existed as a model for delivering L2 instruction in Montessori schools, and it seemed very far from what I was trying to achieve; however, it was happening right before my eyes.

The attendance analysis raised the possibility of meeting a desired exit criterion for Y3 children, and the need to adjust the session for children who had already learned some English. These variables led me to revisit the idea of adding a group of older children to the next period of work. Including these children in their last year of Children's House would resemble Rosanova's (1997) pull-out recommendation for older children in language-immersion Montessori schools; the youngest children simply do not have the same interests as the older ones. Older children are transitioning to the second plane of development, so their interests and attention span, as well as other factors, can be clearly identified and considered in the activities that are proposed to them.

## Phase 6

Y3 children were divided into two groups of seven children each. At the beginning of the day, the group of older children participated in a different session with more-challenging tasks before the English Corner became available for the rest of the children in the class, maintaining the same routine as in the previous phase. The session for the children in their last year of Children's House experienced slight structural variations that allowed for more language output.

Many new lines of inquiry started to emerge during the Y3 sessions: considerations of variation in the routine, materials that allowed a balance between repetition and new content, and even social and emotional

considerations that seemed particularly relevant to this group.

An expansion of language started to occur as a result of increasing the use of the target language to engage in meaningful activities in which children had more opportunities to express their own ideas in the target language. We were entering Rosanova's (1997) *speech emergence* stage, characterized by the older children beginning to speak in longer phrases, often producing whole sentences.

I began to introduce writing and reading to this group. By the second half of the school year, most of the children knew how to read and write in their L1; some became spontaneously interested in doing so in English too. Vocabulary acquisition was expanded to the written names of classroom objects, which they could start to analyze phonetically.

Y3 children were becoming interested in the English Corner again and wanted to join the older group session, but I was again in a discovery and exploration phase of this new circumstance. It was then that I really started to notice a structural shift in what was happening with the environment in regard to SLA. I still did not consider the environment to be bilingual, but the reality of it was different: a larger number of children felt confident with the target language present in the classroom, could understand more of it, and tried to use it beyond the usual structure of the L2 sessions to communicate with me in English. However, I knew that a deeper knowledge of the Montessori Method, especially of the language area and of SLA, had to accompany my research methods and practice in the future.

I wanted to explore whether the results I had with English were replicable with a different target language. Personal circumstances led me to leave the school after this period of work and immigrate to the United Kingdom, where I continue my research with Spanish as the target language. A Montessori teacher continued the ESL work at the Children's House. I did my best to pass on the knowledge I had gained from my experience to her and encouraged her to note her findings so that we could continue to share the process.

## Discussion

Each phase of the implementation process brought insights and considerations that helped shape the next

stage. The knowledge I gained from this process can shed some light on ideas that may enable teachers to evolve from traditional understandings and practices of SLA in Montessori settings—to move from an individual understanding of SLA to a more social one, aligning better with the Montessori pedagogy.

### **Consistency in the Use of Routines and Materials to Support SLA**

The early definition of a clear structure for the L2 sessions was marked by opening and closing elements like the welcome and goodbye songs, as well as other activities that became familiar to the children. This routine added constancy and continuity to the use of the L2, linking it to specific routines and activities and aiding language acquisition (Snow, 1983). Creating this familiarity between the target language and the associated activities and routines proved highly effective from the beginning.

Another early choice that improved constructive alignment (Biggs, 2006) between the desired outcomes and the methodology and activities leading to them was to create and use materials, among others, that supported limited vocabulary and language structures rather than topics and vocabulary that were broader and not used regularly.

Moving from highly contextualized interactions to those with increasing decontextualization must align with the development of language skills observed in the child. This is accomplished through interaction—slowly adapting the discourse and challenges, and providing aids for this process.

### **Design of Developmental Materials to Support SLA and the Role of the Adult in the Process**

The relevance of developmental materials in the Montessori Method means that much thought and experimentation in developing and using them is required for them to effectively support the developmental needs of children in every stage of SLA. This process occurs directly through the interactions among adults, the specific materials, and the child; the materials must have a specific purpose both intrinsically and in relation to their sequence of use within a specific curricular area. They also need to align with the different developmental stages of the children in the classroom and support children's individual development and interests, as well as facilitate autonomous learning.

The effect of practice and concentrated effort leads children to learn how to use each material and acquire the skills and knowledge each material was designed to support. After they have reached a certain level of proficiency, they can continue to develop. They can then use this knowledge or share it with others. This result was evident with the L2 songs and vocabulary memory baskets.

### **The Role of Peers in Assisting in the SLA Guessability Process**

Working with mixed groups in the L2, in both age and competence, creates the social conditions for the children who are already familiar with the target language and L2 session structure to assist those new to the target language to adapt and settle promptly. The more-capable children help their peers by translating or communicating the expectations of the proposed activities. They also provide scaffolding that supports the guessability process of children in the early stages, which assists their own language development (Rosanova, 1997). Through this process, children who assist more-novice children can also confirm their own guesses about meaning; guessing meaning is already a stage in the SLA process.

### **Working With Heterogeneous Groups for SLA**

Montessori teachers are trained to use the social constitution of heterogeneous groups to further the educational objectives they enable. However, traditional teacher preparation makes distinctions, by age or level of competence or both, to plan and provide SLA. Bridging the differences between the Montessori Method and other methodologies is important in the transition from traditional SLA understandings and practices to the more comprehensive ones of the Montessori pedagogy.

### **L2 Curriculum for Y1, Y2, and Y3 and the Role of the Social Environment in Supporting Bilingual Montessori Classrooms**

In Montessori classrooms, all materials for Y1, Y2, and Y3 are available simultaneously, and each child progresses through the areas following the sequence of the level of complexity. It is important to use children's prior knowledge of the target language children exhibit and create mechanisms to allow the L2 program for a Y1, Y2, and Y3 curriculum to be delivered cohesively until the classroom becomes bilingual. Therefore, it is not only the individual children but also the social environment itself

that evolves and changes, eventually becoming naturally bilingual when it is properly prepared.

## Conclusions

The transformation of the pedagogical practice followed a natural pace that considered both the self-evolving product of this effort and my own change as practitioner. Research tools and self-reflection were used to support the decision-making process that characterized each stage of this process. Negotiations for time and space allocations were required, as were commitment and trust in the project. English started gaining ground as an important aspect of the curricula, which was reflected in the decisions that directly affected the prepared environment. The interest in prioritizing teaching an L2 to the Children's House children grew, requiring a greater allocation of material and human resources.

This article is a personal account of a particular situation and process. However, it reflects some of the challenges a language specialist practitioner with little knowledge of Montessori pedagogy encountered when inserting herself into an educational model that differed considerably from mainstream language-teacher preparation. It may also assist Montessori teachers who think that more-specific preparation may be desirable for this aspect of Montessori education and who may still struggle to connect the Montessori Method with the field of language learning and the associated practical implications.

This study supports L2 implementation models for Montessori education that posit the target language as integral to the learning environment. The report also shares the hurdles and successes that make integral transition both possible and effective. In this sense, a distinction between limited-scope and wide-scope strategies to integrate languages into the Montessori learning environment becomes pertinent, while also considering the school's priorities and resources.

In terms of SLA attainment levels, the study indeed showed better results as the model became more integrated into the children's usual learning environment. However, the objective of this project was not to measure such differences.

## Limitations

This study was an initial exploration in developing an L2 program for Children's House that aligned with

the Montessori principles. However, it was just the start of something that deserves further development and exploration.

Neither Montessori training, research methods, nor a deep knowledge of SLA theories alone suffices to add to knowledge in this area of the curriculum. We need to move forward toward better understanding and supporting a language-learning curriculum and its teachers. To reach this goal, we need to know all the intersecting aspects that allow us to create specific materials and strategies that reflect the necessary Montessori pedagogical principles.

## Suggestions for Future Research and Practice

I want to take this opportunity to call for other practitioners to share their experiences with teaching languages in Montessori education. I also want to acknowledge all the largely unrecognized individual and collective efforts of language specialists working in Montessori schools over the years, and Montessori teachers interested in language learning. The richness of their efforts has helped build an immense body of knowledge that furthers our understanding of language acquisition in Montessori education. Leading the way should be an openness to other fields of knowledge accompanied by a profound respect for and understanding of Montessori philosophy and principles; we also need to recognize that many different paths may lead to the same destination for language learning.

The relationship of language learning to the notions of cosmic education and peace is particularly relevant in today's world, and Montessori education can also help us bridge this relationship.

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## Author Information

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## References

- Bagby, J. H. (2007). Montessori education and practice: A review of the literature, 1996–2006. *Montessori Life*, 1, 1–8. [https://amshq.org/-/media/Files/AMSHQ/Research/Resources-for-Research/A-Review-of-the-Literature-1996\\_2006.ashx?la=en](https://amshq.org/-/media/Files/AMSHQ/Research/Resources-for-Research/A-Review-of-the-Literature-1996_2006.ashx?la=en)
- Bagby, J. H., & Jones, N. A. (2010). Montessori education and practice: A review of the literature, 2007–2009. *Montessori Life*, 2, 1–5. [https://amshq.org/-/media/Files/AMSHQ/Research/Journal-Articles/Review-of-the-Literature-2007\\_2009.ashx](https://amshq.org/-/media/Files/AMSHQ/Research/Journal-Articles/Review-of-the-Literature-2007_2009.ashx)
- Bagby, J., Wells, K., Edmonson, K., & Thompson, L. (2014). Montessori education and practice: A review of the literature, 2010–2013. *Montessori Life*, 5, 32–41.
- Berger, B., & Eßwein, L. (2016). *Englisch lernen nach Montessori* [Learning English according to Maria Montessori]. Herder Verlag.
- Berger, B. (2019a). What about young learners? How much autonomy is possible at primary level? *Independence*, 76, 26–28.
- Berger, B. (2019b). Materials that support learner autonomy in primary classrooms. *Independence*, 77, 19–21.
- Biggs, J. (2006). *Teaching for quality learning at university*. Open University Press.
- Campbell, M. H. (1998). Fort Peck combines language immersion with Montessori methods. *Tribal College Journal*, 9(4), 15. <https://tribalcollegejournal.org/fort-peck-combines-language-immersion-montessori-methods/>
- Consalvo, G., & Tomazzolli, E. (2019, March 21–24). *Fostering multilingual competence in a Montessori elementary school context* [Poster presentation]. The Montessori Event, Washington, D.C., United States. <https://amshq.org/-/media/Files/AMSHQ/Research/Conference-Handouts/2019/Poster-Sessions/Consalvo.ashx>
- Cummins, J. (1996). *Negotiating identities: Education for empowerment in a diverse society*. California Association for Bilingual Education.
- Dooly, M., & Moore, E. (2017). Introduction: Qualitative approaches to research in plurilingual education. In E. Moore & M. Dooly (Eds.), *Qualitative approaches to research on plurilingual education* (pp. 1–10). <https://doi.org/10.14705/rpnet.2017.emmd2016.618>
- Epstein, P. (2012). *An observer's notebook: Learning from children with the observation C.O.R.E.* Montessori Foundation.
- Fafalios, I. (2007). *Supporting bilingual children*. Montessori Society AMI (UK). <https://montessorisociety.org.uk/Articles/4333290>
- Farrell, T. S. C. (1994). Exploring EFL classrooms at a Korean university. *English Teaching*, 49, 285–309. [http://journal.kate.or.kr/wp-content/uploads/2015/02/kate\\_49\\_14.pdf](http://journal.kate.or.kr/wp-content/uploads/2015/02/kate_49_14.pdf)
- Geertz, C. (1973). *The interpretation of cultures: Selected essays*. Basic Books.
- Jacobs, S. (2016). The use of participatory action research within education: Benefits to stakeholders. *Word Journal of Education*, 6(3), 48–55. <http://dx.doi.org/10.5430/wje.v6n3p48>
- Jendza, J. (2016). Foreign languages in the Montessori environment: A participatory action research—the first cycle. *Beyond Philology: An International Journal of Linguistics, Literacy Studies and English Language Teaching*, 13, 287–305. [https://fil.ug.edu.pl/sites/default/files/\\_nodes/strona-filologiczny/33797/files/beyond\\_philology\\_no\\_13.pdf](https://fil.ug.edu.pl/sites/default/files/_nodes/strona-filologiczny/33797/files/beyond_philology_no_13.pdf)
- Krashen, S. D. (1985). *The input hypothesis: Issues and implications*. Longman.
- Lillard, A. (2008). How important are the Montessori materials? *Montessori Life*, 20(4), 20–25.
- Lillard, A. (2011). What belongs in a Montessori Primary classroom? Results from a survey of AMI and AMS teacher trainers. *Montessori Life*, 23(3), 18–32. [https://www.researchgate.net/publication/290448065\\_What\\_Belongs\\_in\\_a\\_Montessori\\_Primary\\_Classroom](https://www.researchgate.net/publication/290448065_What_Belongs_in_a_Montessori_Primary_Classroom)
- Lillard, A. S. (2012). Preschool children's development in classic Montessori, supplemented Montessori and conventional programs. *Journal of School Psychology*, 50(3), 379–401. <https://doi.org/10.1016/j.jsp.2012.01.001>
- Lillard, A., & Heise, M. (2016). Removing supplementary materials from the Montessori classroom changed child outcomes. *Journal of Montessori Research*, 2(1), 16–26. <https://doi.org/10.17161/jomr.v2i1.5678>
- Menezes, V. (2013). Second language acquisition: Reconciling theories. *Open Journal of Applied Sciences*, 3(7), 404–412. <https://doi.org/10.4236/ojapps.2013.37050>
- Montessori, M. (2007a). *The absorbent mind*. Montessori-Pierson.

- Montessori, M. (2007b). *The formation of man*. Montessori-Pierson.
- Montessori, M. (2012). *The 1946 London lectures*. Montessori-Pierson.
- Park, C., & Lee, H. (2010). What makes a case study really qualitative? Show me your evidence, please! *English Teaching*, 65(4), 79–101. <https://doi.org/10.15858/engtea.65.4.201012.79>
- Rosales Chavarría, R. (2019, September 6). *Curricula development for learning languages in Montessori settings* [Paper presentation]. LASIG Event, Reforming the foreign language classroom: Empowering students to take ownership. Braunschweig, Germany.
- Rosanova, M. (1997). *Early childhood bilingualism in the Montessori Children's House: Guessable context and the planned environment*. InterCultura Montessori School.
- Rosanova, M. J. (1998). Early childhood bilingualism in the Montessori Children's House (ED409704). ERIC. *Montessori Life*, 10(2), 37–48. <https://files.eric.ed.gov/fulltext/ED409704.pdf>
- Snow, C. (1983). Literacy and language: Relationships during the preschool years. *Harvard Educational Review*, 53(2), 165–189. <https://doi.org/10.17763/haer.53.2.t6177w39817w2861>
- Winter, C. (2020). Creating an environment for learner autonomy. *Melta News*, 99, 1–11. [https://melta.de/wp-content/uploads/2020/06/melta\\_99\\_summer20\\_web3.pdf](https://melta.de/wp-content/uploads/2020/06/melta_99_summer20_web3.pdf)
- Winnefeld, J. (2012). Task-based language learning in bilingual Montessori Elementary schools: Customizing foreign language learning and promoting L2 speaking skills. *Linguistik Online*, 54(4), 69–83. <https://doi.org/10.13092/lo.54.284>
- Wysmulek, I. (2009). Montessori Method in teaching foreign languages. *Наукові записки Національного університету "Острозька академія." Серія «Філологічна»* [Scientific notes of the National University "Ostroh Academy." Philological Series], 11, 446–454. [https://eprints.oa.edu.ua/255/1/11\\_09\\_18.pdf](https://eprints.oa.edu.ua/255/1/11_09_18.pdf)