

Montessori Education and Practice:

A Review of the Literature, 2007–2009

By Janet H. Bagby and Natalie A. Jones

This literature review, a continuation of the first one published in *Montessori Life* (Bagby, 2007), identifies articles published in non-Montessori professional periodicals that included information about Maria Montessori and/or the Montessori method of education. While conducting the current search, we discovered 12 articles published prior to 2007 that were not annotated in the original review. Those articles are included in this review, along with the ones published within the last 3 years.

Since 2006, there have been an additional 25 articles published that meet criteria stated above; this suggests an increase in Montessori-related research in the United States and the international community. As with the original review, nearly half of these articles were published in educational periodicals. The remaining articles appeared in publications representing various disciplines (i.e., medicine, religion, and gerontology).

Besançon, M. & Lubart, T. (2007). *Differences in the development of creative competencies in children schooled in diverse learning environments.* *Learning and Individual Differences*, 18, 391–399.

This two-year study examined creativity development in first through fifth graders in four Parisian schools. Two sites used traditional pedagogy and two used alternative pedagogies, specifically Freinet and Montessori. Overall, students who attended a Montessori or Freinet setting performed higher on creativity tests, and Montessori school students achieved higher levels of creativity over the 2-year study period than students in the other three schools.

Blank, J. (2009). *Situated in school scripts: Contextual early childhood teaching.* *Teaching and Teacher Education*, 25, 251–258.

This qualitative case study of two elementary teachers in a public Montessori magnet school focused on the use of scripts, which are defined as “situated ways of speaking” about a teaching practice. The teachers describe their experiences with various scripts, including the Montessori methodology, the passing of No Child Left Behind, and public school traditions.

Bone, J., Cullen, J., & Loveridge, J. (2007). *Everyday spirituality: An aspect of the holistic curriculum in action.* *Contemporary Issues in Early Childhood*, 8(4), 344–354.

An early childhood Montessori *casa* in New Zealand was the setting for this qualitative study exploring everyday spirituality, which “recognizes the extraordinary in the ordinary.” The authors capture the key narratives and actions of the preschoolers on the first day back from a two-week break, illus-

trating the spiritual elements in the Montessori environment.

Capps, D. (2008). *Mother, melancholia, and humor in Erik H. Erikson’s earliest writings.* *Journal of Religion and Health*, 47, 415–432.

Through analysis of Erikson’s work, Capps explains the origins of melancholia and describes humor as an antidote to melancholia. While undergoing psychoanalysis with Anna Freud, publishing early articles, and teaching school, Erikson also studied the Montessori method.

Cossentino, J. (2005). *Ritualizing expertise: A non-Montessorian view of the Montessori method.* *American Journal of Education*, 111(2), 211–244.

Through classroom observations, Cossentino explored the “rituals” of a Montessori classroom. She explains the traditional techniques (rituals) used in Montessori pedagogy and describes how these techniques reflect broader Montessori principles, such as independence. Cossentino emphasizes the importance of rituals as related to educational experiences.

Dohrmann, K., Nishida, T., Gartner, A., Lipsky, D., & Grimm, K. (2007). *High school outcomes for students in a public Montessori program.* *Journal of Research in Childhood Education*, 22(2), 205–217.

In this quantitative study, researchers compared the achievement of two groups of Milwaukee high school students—one group having attended a Montessori

school from pre-K through fifth grade, and a matched peer group that attended non-Montessori schools. Results indicated that attending a Montessori school had significant positive effects on math and science performance.

Duckworth, C. (2006). *Teaching peace: A dialogue on the Montessori method.* *Journal of Peace Education*, 3(1), 39–53.

Maria Montessori envisioned her educational philosophy as a pathway to a peaceful world. Within this perspective, Duckworth focused on Montessori's pedagogy while profiling five Montessori schools in Washington DC, Thailand, and India. The featured schools incorporate a sense of "international-mindedness"—tolerating diversity to cultivate harmony between countries.



Farné, R. (2005). *Pedagogy of play.* *Topoi*, 24, 169–181.

In this article, the origins and value of play are explored. Farné credits Montessori with creating "one of the most important pedagogical innovations" with her manipulative learning activities. He also discusses the influence of Montessori's method, as well as Piaget's and Dewey's philosophies of learning by doing, on the development of children's museums. "Pedagogy of Play" stresses the responsibility of education to provide enriching environments to cultivate the natural discovery of play in children.

Foschi, R. (2008). *Science and culture around Montessori's first "children's houses" in Rome (1907–1915).* *Journal of the History of the Behavioral Sciences*, 44(3), 238–257.

In this detailed narrative, Foschi describes the circumstances that led Montessori to become a pedagogical expert and develop the Montessori method. He chronicles Montessori's challenges and triumphs with the Children's House and elaborates on her diverse expertise in psychology, education, science, and medicine.

Hunter, W. L., Strasburger, V. C., Snyder, D. M., & Stein, M. T. (2006). *Max: Concern with social skills, language, and excessive TV viewing in a 3-year-old.* *Journal of Developmental and Behavioral Pediatrics*, 27(6), 488–492.

Max, a 3-year-old Montessori student who has severe temper tantrums, repetitive language habits, and limited social skills was the focus of this case study. Four doctors give their diagnostic impressions and discuss concerns with Max's lifestyle, primarily his watching five hours of television a day. Each doctor provides suggestions for how they would proceed with the case.

Iwanowski, P. S., Stengel-Rutkowski, S., Anderlik, L., Pilch, J., & Midro, A. T. (2005). *Physical and developmental phenotype analyses in a boy with Wolf-Hirschhorn Syndrome.* *Genetic Counseling*, 16(1), 31–40.

The authors present a case study of a 22-month-old boy with Wolf-Hirschhorn Syndrome—a rare genetic condition affecting many physical and mental traits. They conducted a systematic analysis of the physical and developmental characteristics of the condition to better define the syndrome. Researchers observed the boy interacting with a therapist in a Montessori environment.

Jacobson, L. (2007). *Taming Montessori.* *Education Week*, 26(27), 30–32.

This article addresses the conflict between No Child Left Behind (NCLB) and Montessori's educational method. Since NCLB requires high-stakes testing, many public Montessori schools now incorporate timed workbook activities and tests. Comparisons of achievement data for public school Montessori and non-Montessori students for one district are discussed.

Lei, D. & Wiegand, B. (2005). *A classification of teacher interventions in mathematics teaching.* *ZDM*, 37(3), 240–245.

Montessori's quote "Help me to do it myself" provided the theme for these German researchers' evaluation of teacher interventions during "students' independence-oriented solution processes." Based on the results of the study, a framework for conceptualizing teacher interventions is included.

Lillard, A. & Else-Quest, N. (2006). *Evaluating Montessori education.* *Science*, 313, 1893–1894.

This quantitative study examined cognitive/academic and social/behavioral skills in students attending Montessori vs. non-Montessori schools. Participants were 59 Montessori students and 53 non-Montessori students, in 5- and 12-year-old age groups. The data indicated significant advantages among Montessori students in both age groups.

Lin, L., Yang, M., Kao, C., Wu, S., Tang, S., Lin, J. (2009). *Using acupressure and Montessori-based activities to decrease agitation for residents with dementia: A cross-over trial.* *Journal of the American Geriatrics Society*, 57(6), 1022–1029.

Residents with dementia in Taiwanese care facilities received varied combinations of acupressure and Montessori-based activities in research measuring agitation. The Montessori activities included scooping, pouring, squeezing, fine motor skills, environ-

mental care, and personal care. The researchers reported positive effects and a significant decrease in the agitated behaviors with the treatment groups using the interventions.

Lopez, Y. (2008). *The state of geographic education in selected elementary schools in Metro Manila, Philippines.* *International Research in Geographical and Environmental Education*, 17(4), 344–357.

This study compared curricular programs and their effectiveness in teaching geography to fourth-grade students in Manila. Public, private, and Montessori schools were included in the study. In addition, the researchers compared the basic education curriculum of the Philippines and the Montessori education method. Results indicate that private school students attained significantly higher scores on a geographic achievement test. However, the shortage of learning materials in the other schools may have influenced the outcome.

MacDonald, B. (2009). *The symbol of spiral for collaboration: The key to renewal and revitalization.* *Exchange*, September/October, 74–76.

MacDonald, a 23-year director of a Montessori school, discusses how she delegates and shares responsibilities in an effective and creative way. The benefits of using a spiral to describe management and the processes that evolved from this symbolism are explored. Experienced teachers, parents, and staff are all part of an interconnected network that builds upon the foundation of the school and creates a stronger and more positive school climate.

McCusker, M. & Van Doren, S. (2007). *Aggressive play: Contributing factors of parental roles on 3-6-year-old boys.* *College of Saint Elizabeth Journal of the Behavioral Sciences*, 1, 27–30.

McCusker and Van Doren examined the relationship between parenting style (authoritative, permissive, or authoritarian), aggressive play, and aggressive language in boys attending a suburban New Jersey Montessori school. Researchers surveyed the parents and observed the 31 children during playtime with gender-neutral toys. The data show no significant correlations between parenting style, aggressive acts, and/or language in preschool boys.

Ohtoshi, T., Muraki, T., & Takada, S. (2008). *Investigation of age-related developmental differences of button ability.* *Pediatrics International*, 50(5), 687–689.

Researchers observed buttoning ability in children aged 36–83 months, focusing on age and sex differences. The study used a buttoning/unbuttoning tool derived from a Montessori material that consisted of a front piece of a shirt with five buttons on a wooden frame. Unbuttoning and buttoning time decreased with age, and girls unbuttoned significantly faster than boys at age 3.

Pankhurst, S. (2008). *Proposal by Sylvia Pankhurst for an Ethiopian women's college, 1959: A suggested curriculum for a college of education for young women.* *Gender and Education*, 20(1), 67–75.

In this historical paper, Pankhurst proposed basic requirements for educating young women in Ethiopia. She asserted that the Montessori method best captured these essential skills in a classroom and recommended teachers apply them to their curriculum. The areas of interest included Practical Life, speech, language (English and Amharic in Ethiopia), drawing, art, music, history, geography, science, physical education, reading, and mathematics.

Rathunde, K. & Csikszentmihalyi, M. (2005). *Middle school students' motivation and quality of experience: A comparison of Montessori and traditional school environments.* *American Journal of Education*, 111, 341–371.

This quantitative study examined affective characteristics in 290 middle school students in Montessori and non-Montessori environments. Results showed that Montessori students reported higher social-emotional scores (e.g., intrinsic motivation, flow experience) than the non-Montessori students during school-related tasks. All students performed relatively the same when engaged in nonacademic activities.

Rathunde, K. & Csikszentmihalyi, M. (2005). *The social context of middle school: Teachers, friends, and activities in Montessori and traditional school environments.* *Elementary School Journal*, 106(1), 59–79.

This study, which focused on how middle school students view their learning environments, peers, and teachers, was conducted with the same participants as in the preceding article description. Compared to students in non-Montessori schools, Montessori students had more positive perceptions of their teachers and learning environments. In addition, Montessori students were more likely to call their classmates their friends while at school.

Rule, A. & Kyle, P. (2009). *Community-building in a diverse setting.* *Early Childhood Education Journal*, 36, 291–295.

Rule and Kyle describe a southern magnet school's transition to racial integration while also implementing a new Montessori curriculum. The school used several forms of community-building strategies, including high parental involvement and faculty-bonding exercises, to facilitate the

transition. These strategies helped create a supportive climate in which parents, teachers, and students had positive, open communication.

Rule, A. & Welch, G. (2008). *Using object boxes to teach the form, function, and vocabulary of the parts of the human eye.* *Science Activities*, 45(2), 13–22.

In this study, object boxes provided a tactile experience for students learning about the human eye. Using the Montessori theory of hands-on learning, the object boxes were designed for science activities. The results indicated that students were more enthusiastic and retention was greater when using Montessori-type methods in science classes. The article includes instructions for creating manipulatives to teach elementary students the form and function of the human eye.

Saracho, O. & Spodek, B. (2009). *Educating the young mathematician: The twentieth century and beyond.* *Early Childhood Education Journal*, 36, 305–312.

These authors reviewed the history of mathematics education as related to early childhood education during the past century. Pioneers in the field, such as Froebel, Montessori, and Piaget, are credited with the early math educational movement in the United States. The article concludes with recommendations for revising current mathematical education practices.

Schneider, N. & Camp, C. (2002). *Use of Montessori-based activities by visitors of nursing home residents with dementia.* *Clinical Gerontologist*, 26(1), 71–84.

This study explored how the use of Montessori activities in the treatment of nursing home residents with dementia may increase their voluntary interaction with visitors. Pre- and post-data showed that residents, when

engaged in Montessori-based activities, exhibited a 40% increase in involvement with the visitors and a 69% decrease in passive engagement.

Skrainer, M., Malone, M., Camp, C. McGowan, A., & Gorzelle, G. (2007). *Research in practice I: Montessori-Based Dementia Programming®.* *Alzheimer's Care Quarterly*, 8(1), 53–64.

The article summarizes several studies that successfully used Montessori-Based Dementia Programming (MBDP) to engage persons with dementia in meaningful activities with others. Personnel trained in MBDP included staff members, family members, volunteers, and persons in the early stages of dementia in nursing homes, assisted living facilities, and adult day-care programs.



Jude Keith Rose Photography

Soundy, C. (2008). *Young children's imaginative play: Is it valued in Montessori classrooms?* *Early Childhood Education Journal*, 1–3.

Soundy analyzed the imaginary play of three early childhood students following their teachers' reading of a book about trains. While stressing the benefits of imaginary play, she encourages Montessori educators to recognize the value of dramatic play and to incorporate the practice in early childhood environments.

Stewart, R., Rule, A., & Giordano, D. (2007). *The effect of fine motor skill activities on kindergarten student attention.* *Early Childhood Education Journal*, 35(2), 103–109.

The authors conducted an experimental study with public school kindergartners, evaluating the effects of fine motor skill activities on attention span. Montessori's belief that fine motor activity leads to increased attention spans in young children provided the theoretical construct for this research. The researchers reported that girls' attention spans increased when engaged in fine motor activities.

Stewart-Steinberg, S. (2006). *Taking dictation: Maria Montessori's writing method.* *Forum Italicum*, 40(1), 36–60.

This author critiques Montessori's progressive pedagogy, focusing primarily on her classroom writing methods. Stewart-Steinberg discusses constitutive absence and graphic presence, two of Montessori's key writing concepts. Also included is a discussion of the use of the Montessori method by the fascist regime.

Sykes, H. (2006). *Post-foundational thoughts about learning in different registers: Decolonial, cross-cultural, and Montessorian.* *Curriculum Inquiry*, 36(1), 5–13.

In this opinion article, the author discusses three articles, each presenting a distinct learning experience and environment—music in Canada, U.S. citizens in Costa Rica, and children in a Montessori classroom. Cossentino's "Big Work" article provides the Montessori perspective. The author seems most focused on how diverse learning methods can connect or combine, resulting in a more holistic knowledge base.

Tzuo, P. (2007). *The tension between teacher control and children's freedom in a child-centered classroom:*

Resolving the practical dilemma through a closer look at the related theories. *Early Childhood Education Journal*, 35(1), 33–39.

According to this author, Piaget, Vygotsky, Dewey, and Montessori shared similar views related to child-centered education. With that as the theoretical stage, the relation between teacher control and children's freedom in a classroom is explored. This author concludes that high teacher control and high child freedom are not mutually exclusive and can coexist in a child-centered classroom.

Vettiveloo, R. (2008). A critical enquiry into the implementation of the Montessori teaching method as a first step towards inclusive practice in early childhood settings specifically in developing countries. *Contemporary Issues in Early Childhood*, 9(2), 178–181.

This author advocates for the use of the Montessori teaching method as a means of establishing an efficient educational system to serve *all* students, including those with special needs. Vettiveloo believes the curriculum could be useful for developing nations, such as Malaysia, where government legislation does not state specific requirements for special education.

Walsh, B. & Petty, K. (2007). Frequency of six early childhood education approaches: A 10-year content analysis of *Early Childhood Education Journal*. *Early Childhood Education Journal*, 34(5), 301–305.

A keyword search of this journal's published articles between 1995 and 2005 identified the following six



Lighthouse Christian Montessori

approaches to early childhood education as appearing most frequently: Bank Street, High/ Scope, Montessori, Waldorf, Reggio Emilia, and Head Start. Of the six, Head Start was the highest ranking, and Waldorf appeared the fewest number of times. A description of each approach is included.

Whitescarver, K. & Cossentino, J. (2008). Montessori and the mainstream: A century of reform on the margins. *Teachers College Record*, 110 (12), 2571–2600.

This comprehensive case study examines the history of the American Montessori movement over the last 100 years. The authors gather data from interviews with Montessori practitioners and leaders as well as from archival data. They also relate current developments, such as the recent increase of Montessori students in the United States and the “splintering” of the American Montessori movement.

Willis, R. (2009). Playful learning. *History Today*, 59(2), 20–21.

This article begins with a brief history of progressive education in Great Britain. After reviewing the current educational policy, Willis describes a new governmental initiative to reinvest in child-centered learning, particularly in the early years. A discussion of the pioneers in progressive education, such as Rousseau, Pestalozzi, Froebel, Steiner, and Montessori is also included.

Woolsey, K. & Woolsey, M. (2008). Child's play. *Theory into Practice*, 47, 128–137.

Children's natural inclination to play combined with digital technology is the focus of this article. The authors describe several companies that have developed programs that integrate academics with technology. One program, the New Media Thinking Project, created software that incorporates digital Montessori materials.

JANET H. BAGBY is a senior lecturer in the department of educational psychology at Baylor University in Waco, TX. A member of the AMS Research Committee, she received the AMS Outstanding Doctoral Dissertation Award in 2002. Contact her at janet_bagby@baylor.edu.

NATALIE A. JONES is a graduate student in the School Psychology program at Baylor University, Waco, TX. Contact her at natalie_jones@baylor.edu.