

Montessori Memo

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Research for practitioners, researchers, and community members



MONTESSORI MEMO™

A quarterly, curated memo of peer reviewed research and policy papers accessible and contributed to by a broad community of Montessori and non-Montessori researchers and practitioners via our virtual community found in the *Montessori Forward* app.

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RESEARCH: MONTESSORI

Title Language Games Children Play: Language Invention in a Montessori Primary School

Citation

Gobbo, F. (2019). Language Games Children Play: Language Invention in a Montessori Primary School. Handbook of the Changing World Language Map, 1-14.

Link https://link.springer.com/content/pdf/10.1007/978-3-319-73400-2_167-1.pdf

Summary/Abstract This chapter illustrates the main results of a language laboratory held in a Montessori primary school in Milan, Italy, during 7 years. Pupils (age: 9–11) are guided in the collective invention of a secret language, using all their linguistic repertoire present in class – including minority and home languages. The structure of the language is highly influenced by the language of instruction (in our case, Italian), but, at the same time, it differs from that because its aim is to be secret. In other words, the invented language is shared among the class members only, who know how to decipher its alphabet and grammar, unlike other schoolmates. Secrecy permits the inventor to insert elements from other languages, resulting in an a priori language contact. During the process of invention, participants increase their metalinguistic awareness and thus their understanding of the languages they are studying formally – in our case, Italian and English. The Montessori method fosters a “learning-by-doing” approach and an active interdisciplinary cross-fertilization (called Cosmic Education). In fact, pupils may use the secret language to create an imaginary country – usually an island – and conceive a utopian society, putting together notions of natural sciences (for instance, orography) and social sciences, in particular, to describe the ideal human society speaking their secret language. The chapter also includes reflection on how this language laboratory can be applied in other educational contexts, maintaining its original character of being a serious game for learning.

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The Center for Montessori Studies collaborates across the Montessori community, Association Montessori International and American Montessori Society, and values the institutional collaborations with and among KU Center for Montessori Research, National Center for Montessori in the Public Sector, and Montessori Public Policy Initiative.

Title Shunned and Admired: Montessori, Self-Determination, and a Case for Radical School Reform

Citation

Lillard, A. S. (2019). Shunned and admired: Montessori, self-determination, and a case for radical school reform. *Educational Psychology Review*, 1-27.

Link <https://link.springer.com/article/10.1007/s10648-019-09483-3>

Summary/Abstract School reform is an important national and international concern. The Montessori alternative school system is unique in that it is well-aligned with the science of healthy development and learning, has strong social–emotional *and* academic outcomes, is virtually unchanged in over a century, can be applied across all the school years, and still attracts considerable attention and allegiance—yet it remains “on the margins” (Whitescarver and Cossentino *Teachers College Record*, 110, 2571–2600, 2008) of the bulwark educational system, as often shunned as admired. Why does Montessori persist (and increasingly in the public sector) and why does it elicit such sharply contrasting reactions? This article reviews several reasons why it is admired, such as evidence of Montessori’s effectiveness, its alignment with educational psychology research, and its broad scope. The points of research alignment are presented as natural corollaries of Montessori’s central premise: independence, or self-determination. After discussing these extrinsic and intrinsic reasons why Montessori is admired, the article concludes with speculation as to why it is also shunned—namely its incommensurability with conventional education culture and what might be a consequence: frequent poor implementation. The incommensurability of evidence-based alternatives with the conventional system is also posed as a reason for radical school reform.

Title Integrated STEM in practice: Learning from Montessori philosophies and practices

Citation

Livstrom, I. C., Szostkowski, A. H., & Roehrig, G. H. (2019). Integrated STEM in practice: Learning from Montessori philosophies and practices. *School Science and Mathematics*.

Link <https://onlinelibrary.wiley.com/doi/abs/10.1111/ssm.12331>

Summary/Abstract In theory, STEM (interdisciplinary science, technology, engineering and mathematics) is cross-disciplinary and situated in real-world problem-solving contexts. In practice, STEM disciplines are often implemented separately using contrived contexts. This paper examines theoretical and empirical aspects of Montessori middle school science in the United States, and its alignment with the conceptual framework of integrated STEM. We selected Montessori adolescent environments because the Montessori philosophy involves interdisciplinary application contextualized in purposeful work and learning. Our research sought to investigate how Montessori middle schools have designed their science programs, and to situate these findings within the current landscape of STEM education and reform-based science. Based on the results of our survey of 96 U.S.

Montessori middle schools, we argue Montessori offers an integrated educational approach that meaningfully situates academic disciplines to mirror local and global challenges, well supported by theory and literature on STEM and situated learning theories. We assert that integrated STEM happens organically in many Montessori middle schools, and takes place through authentic work in communities of practice. Our research communicates the value of looking outside traditional school settings to examine alternative formal education spaces, like Montessori classrooms where integrated STEM happens organically.

Title Developing Instruments to Measure Montessori Instructional Practices

Citation

Murray, A. K., Chen, J., & Daoust, C. J. (2019). Developing Instruments to Measure Montessori Instructional Practices. *Journal of Montessori Research*, 5(1), 75-87.

Link <https://journals.ku.edu/jmr/article/view/9797>

Summary/Abstract Researchers who study any intervention must rule out potential alternative explanations for their results by establishing that the program being investigated is implemented with fidelity. Various instructional practices are attributed to the Montessori Method because the term is not legally protected, meaning any school can say it is Montessori regardless of the degree to which it adheres to practices generally understood to represent Montessori education. Researchers have used a variety of tools to measure the fidelity of Montessori environments they study, but most of these tools lack an extensive psychometric foundation or are labor intensive, requiring in-person observation. The purpose of this study was to examine the psychometric properties of instruments that were developed to measure Montessori implementation through Early Childhood (EC) and Elementary (EL) teachers' reported instructional practices. Findings supported three hypothesized dimensions of Montessori implementation (structure, curriculum, and freedom), which worked fairly well in describing practices. While the properties of these instruments are promising and provide preliminary supporting evidence, results of this analysis suggest further refinement of the items in these instruments is necessary with larger and more diverse samples. While we do not suggest that these are finalized tools, we believe they provide a valuable starting point that is a vast improvement over the requirement of investigators to develop their own instruments as part of each Montessori study they design. The authors hope other researchers will incorporate these instruments into their studies to help build a robust body of evidence supporting their use.

Title Montessori Meets British Columbia's New Curriculum: Incorporating Montessori Principles into Public School Classrooms

Citation

Weir, S. (2019). Montessori Meets British Columbia's New Curriculum: Incorporating Montessori Principles into Public School Classrooms.

Link <http://dspace.library.uvic.ca/handle/1828/10877>

Summary/Abstract At a time in which technology is both pivotal and ever-changing, the need for students to become independent and passionate learners has never been more important. With the unveiling of British Columbia’s new curriculum, it has become evident that preparing students for a future riddled with constant change, instant communication, and immediate information is paramount. As such, the redesigned curriculum focuses on personalized learning, flexible learning environments, and inquiry-based learning as just a few of its cornerstones. Ironically, Maria Montessori recognized these same needs over one hundred years ago. This paper is intended to provide insight as to the parallels between BC’s new curriculum and the Montessori approach. As we move towards classrooms rich in both learning experiences and pedagogy, it is hoped that educators interested in the Montessori approach may implement some of the ideas within this document.

RESEARCH: RELATED

Title Women’s participation in peace processes: a review of literature

Citation

Adjei, M. (2019). Women’s participation in peace processes: a review of literature. *Journal of Peace Education*, 1-22.

Link <https://www.tandfonline.com/doi/abs/10.1080/17400201.2019.1576515>

Summary/Abstract Women play a prominent role in bringing about peace in post-conflict societies. Several studies have found the systematic and representative inclusion of women in conflict resolution processes to significantly increase the chances of sustainable peace. However, women’s contribution to peace processes are often underemphasized or ignored in conflict management research and praxis. It was not until the passage of UN Security Council Resolution 1325 and seven other related resolutions that critical attention was given to women’s role in the peace process. This article provides an in-depth review of the literature on women’s contribution to conflict resolution and peacebuilding. The overall aim is to provide researchers and actors in the global peace market with a distillation of the salient studies and findings from research on women’s involvement in the peace process. Such an effort is necessary to bring together the sparse literature on women’s contribution to peace and to reveal existing gaps in the literature for future research.



Title An Ontological Framework to Improve Surveillance of Adverse Childhood Experiences (ACEs)

Citation

Brenas, J. H., Shin, E. K., & Shaban-Nejad, A. (2019, January). An Ontological Framework to Improve Surveillance of Adverse Childhood Experiences (ACEs). In EFMI-STC (pp. 31-35).

Link https://www.researchgate.net/publication/331160790_An_Ontological_Framework_to_Improve_Surveillance_of_Adverse_Childhood_Experiences_ACEs

Summary/Abstract Adverse Childhood Experiences (ACEs) have been proven to be linked to increased risks of a multitude of negative health outcomes and conditions when children reach adulthood and beyond. To better understand the relationship between ACEs and the associated health outcomes and eventually to plan and implement preventive interventions, access to an integrated coherent actionable data set is crucial. In this paper, we introduce a formal reusable ontological framework to capture the knowledge in the domain of Adverse Childhood Experiences to improve ACEs surveillance and response.

Title Digital Screen Time Limits and Young Children's Psychological Well-Being: Evidence From a Population-Based Study

Citation

Przybylski, A. K., & Weinstein, N. (2019). Digital Screen Time Limits and Young Children's Psychological Well-Being: Evidence From a Population-Based Study. *Child development*, 90(1), e56-e65.

Link <https://onlinelibrary.wiley.com/doi/abs/10.1111/cdev.13007>

Summary/Abstract There is little empirical understanding of how young children's screen engagement links to their well-being. Data from 19,957 telephone interviews with parents of 2- to 5-year-olds assessed their children's digital screen use and psychological well-being in terms of caregiver attachment, resilience, curiosity, and positive affect in the past month. Evidence did not support implementing limits (< 1 or < 2 hr/day) as recommended by the American Academy of Pediatrics, once variability in child ethnicity, age, gender, household income, and caregiver educational attainment were considered. Yet, small parabolic functions linked screen time to attachment and positive affect. Results suggest a critical cost–benefit analysis is needed to determine whether setting firm limits constitutes a judicious use of caregiver and professional resources.

Title ACEs: Evidence, Gaps, Evaluation and Future Priorities

Citation

Steptoe, A., Marteau, T., Fonagy, P., & Abel, K. (2019). ACEs: Evidence, Gaps, Evaluation and Future Priorities. *Social Policy and Society*, 18(3), 415-424. doi:10.1017/S1474746419000149

Link <https://www.cambridge.org/core/journals/social-policy-and-society/article/aces-evidence-gaps-evaluation-and-future-priorities/9327F00FF5E422E9B5C44E23B87E24C4>

Summary/Abstract There is strong evidence linking adverse childhood experiences (ACEs) and poor outcomes in adulthood both in terms of mental and physical health. Gaps in both the evidence base and research priorities still exist. These include understanding how to identify and assess risk in children who have experienced ACEs, and also the development and, importantly, the evaluation of

interventions. Outstanding gaps include whether there are sensitive periods during childhood, the role of resilience/protective factors, the causal relationships, biological mechanisms and relative risk of ACEs for particular negative outcomes. ACEs affect individual children differently and chronic exposure appears to increase the risk of poor outcomes in adulthood, meaning interventions should also be tailored to the individual children, families and communities. Generally, there needs to be better evaluation of interventions and dissemination of this information to ensure that their use is evidence based. More input from affected communities, clinicians, funding bodies and Government departments is required to identify research priorities and ensure gaps in the evidence base are addressed.



Title Creating Manipulatives: Improving Students' Creativity through Project-Based Learning

Citation

Ummah, S. K., In'am, A., & Azmi, R. D. (2019). Creating Manipulatives: Improving Students' Creativity through Project-Based Learning. *Journal on Mathematics Education*, 10(1), 93-102.

Link <https://eric.ed.gov/?id=EJ1204815>

Summary/Abstract The purpose of this study is describing the implementation of project-based learning model and analysing the student's creativity improvement in the subject of learning media. We describe the implementation of project-based learning based on our note of the learning syntax during one semester. Then, compared the students' product to measure their creativity improvement in the aspects of originality, novelty, and flexibility. This study used descriptive-qualitative method and involved the students who took the learning media course as its subjects. The results showed that there was an improvement of the students' creativity in the project-based learning implementation. The improvement was measured in the making of the manipulatives. The students' flexibility and novelty were good, while their originality was fair.



Title Educational diversity and ethnic cultural heritage in the process of globalization

Citation

Zhang, J. (2019). Educational diversity and ethnic cultural heritage in the process of globalization. *International Journal of Anthropology and Ethnology*, 3(1), 7.

Link <https://link.springer.com/article/10.1186/s41257-019-0022-x>

Summary/Abstract The inheritance of ethnic cultures is an important subject in the field of educational anthropology. As the most important conduit for the passing along of ethnic cultures, education strongly impacts that inheritance. Today, however, the rate of globalization is rapidly increasing. Whether in domestic or foreign education, or whether for primary or higher education, increasingly severe challenges in education are yielding profound changes. One of the most important developments in education at the present time is the cultivation of diversity. Increased

diversity in education will have a profound impact on the inheritance of ethnic cultures. In light of the current age and contemporary social changes, the significance of the inheritance of ethnic cultures within the process of globalization is magnified. The current work uses the characteristics of educational development toward diversity to analyze the relationship between education and the inheritance of ethnic cultures, and suggests necessary changes in education to promote that inheritance.

POLICY PAPER:

Title The Montessori Preschool Landscape in the United States: History, Programmatic Inputs, Availability, and Effects

Citation

Ackerman, D. J. (2019), Montessori Preschool Landscape in the United States: History, Programmatic Inputs, Availability, and Effects. ETS Research Report Series. doi:10.1002/ets2.12252

Link <https://doi.org/10.1002/ets2.12252>

Summary/Abstract The Day 1 Academies Fund aims to support a network of high-quality, full-scholarship, Montessori-inspired preschools in underserved communities. To provide insight into the fund's pedagogical inspiration, in this report I provide a high-level overview of the Montessori preschool landscape in the United States. This overview includes 5 key programmatic elements of a traditional Montessori approach to teaching and learning in classrooms serving preschool-aged children, the reported availability of Montessori programs that enroll 3- and 4-year-old children, and what is known about enrollees' demographics. To situate this information in the larger, publicly financed, early education policy context, I also provide similar data for state-funded pre-K and federally funded Head Start programs for preschoolers. In addition, I review research on children's outcomes after participating in U.S.-based Montessori preschool and elementary programs. This overview provides some context for understanding how the Day 1 Academies Fund eventually defines the constructs of high quality, Montessori inspired, and underserved. This review also suggests it could be useful for the Fund's stakeholders to undertake short-term research examining the current early education options of families with low incomes living in low-access-to-Montessori states as well as long-term research aimed at expanding the research base on the effects of Montessori programs aimed at preschoolers.



Montessori Memo is a resource found via the **Montessori Forward** app. A modern format for people to learn about Montessori education. **Montessori Forward** is the shared effort of the Center for Montessori Studies, University of Hartford degree programs, and the Montessori Training Center Northeast to sustain a virtual space as well as an intellectual community for researchers and practitioners contributing to Montessori education and research.

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