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 community found at www.Montessori-Forward.org.

HOW TO GET INVOLVED

Individual researches, practitioners, and community members are encouraged to recommend peer reviewed research and policy papers that you find relevant via the form found on www.*Montessori-Forward.org*.

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.

RESEARCH: MONTESSORI

Title   The long-term benefits of Montessori pre-K for Latinx children from low-income families

Citation

Summary/Abstract   This study used covariate adjusted regression techniques to compare the third-grade outcomes of low-income Latinx children who attended Montessori pre-K programs ($n = 161$) with those who graduated from more conventional programs ($n = 4975$) in Miami-Dade County, Florida. Children who experienced one year of Montessori education demonstrated stronger pre-academic skills at the end of pre-K and, in turn, performed better on standardized assessments of math and reading in third grade than those who did not. No differences emerged in students' identification as gifted and talented nor in third-grade GPA. Taken together, these findings suggest that the benefits of one year of Montessori at age 4 may carry forward over time and to the extent that they do, these benefits are attributed to the fact that Montessori graduates entered kindergarten more ready academically. At the same time, however, the persisting benefits of Montessori were 60–70% smaller four years after program exit and were less robust than the end of pre-K outcomes.

Title   Montessori intervention for individuals with dementia: feasibility study of a culturally adapted psychosocial intervention in Pakistan (MIRACLE)

Citation

Summary/Abstract   Globally, nearly two-thirds of people with dementia reside in low and middle-income countries (LMICs), yet research on how to support people with dementia in LMIC settings is sparse, particularly regarding the management of behavioural and psychological symptoms of dementia. Understanding how best to manage these symptoms of dementia with non-specialist approaches in LMICs is critical. One such approach is a nonpharmacological intervention based on the Montessori method. To evaluate the feasibility and acceptability of a culturally adapted, group-based Montessori intervention for care home residents with dementia and their study partners, who were paid care workers in Pakistan This was a two-stage study: a cultural adaptation of the Montessori intervention and a single-arm, open-label, feasibility and acceptability study of 12 participant dyads. Feasibility and tolerability of the intervention and study procedures were determined through the recruitment rate, adherence to the protocol and acceptance of the intervention. Qualitative interviews were undertaken with the study partners. A pre–post exploratory analysis of ratings of behavioural and psychological symptoms of dementia, functional ability and quality of life were also conducted. The recruitment and retention rates of people with dementia were acceptable, and the intervention was well tolerated by participant dyads. Findings show a reduction in agitation levels and improvement in mood and interest for the activities. Feasibility studies of low-cost, easy-to-deliver and culturally adapted interventions are essential in laying the groundwork for subsequent definitive effectiveness and/or implementation trials for dementia in LMICs, where awareness and resources for dementia are limited.

Title   Emotion recognition development: Preliminary evidence for an effect of school pedagogical practices

Citation

Summary/Abstract   While emotion recognition is shaped through social interactions from a child's early years through at least late adolescence, no emphasis has thus far been given to the effects of daily experiences at school. We posited that enriched, more diverse, and less competitive social interactions fostered by some pedagogical practices may contribute to emotion recognition

processes in children. Here, we investigated differences in emotion recognition among school children experiencing the Montessori versus traditional practices. Children performed two tasks; one measuring the impact of social context on fear-surprise perception, and one measuring their bias toward happiness or anger. Results suggest that children experiencing traditional practices show a higher sensitivity to fear-recognition, while children attending Montessori schools show a higher integration of social cues and perceive expressions of happiness for longer durations. Such preliminary findings call for replication and further research to determine which pedagogical features from the Montessori method may explain these effects.

Title   The effect of Montessori technique-based big book to improve early reading skill and learning motivation for fourth grade students in elementary school

Citation

Istiq'faroh, N., & Ahdhianto, E. (2020). The effect of Montessori technique-based big book to improve early reading skill and learning motivation for fourth grade students in elementary school. *Journal of Xi'an University of Architecture & Technology*, *12*(8). http://www.xajzkjdx.cn/gallery/18-aug2020.pdf

Summary/Abstract   The low level of reading comprehension in elementary school students can certainly affect their learning motivation in the learning process. To overcome this problem, this study aims: to investigate the effect of the Montessori-based Big Book on understanding Early Reading Skills and Learning Motivation. Quasi-experimental design was applied in this study. There were 26 students (14 males and 12 females) from SDN Pucang 4 as an experimental group and 23 students (13 males and 10 females) from SDN Pucang 2 were included as a control group. Data analysis in this study used an independent sample t-test with a significance level of 0.05. The results showed that students in the experimental group had higher scores better than the control group. This shows that the Montessori-based Big Book significantly promotes understanding of Early Reading Skills and Learning Motivation in the experimental group compared to control group students.

Title   Through the Montessori looking-glass: Barriers to implementing a Montessori-based intervention

Citation

Janssen, L. M., Kinney, J. M., & Farfsing, K. M. (2020). Through the Montessori looking-glass: Barriers to implementing a Montessori-based intervention. *Journal of Applied Gerontology*. https://doi.org/10.1177/0733464820938270

Summary/Abstract   Montessori methods are used with individuals with dementia to create meaningful, inclusive, failure-free activities that enhance quality of life. This research qualitatively explored the barriers to implementing a Montessori-based intervention for people living with dementia in a 24-hr memory care setting. A lens comprised of key Montessori values and principles guided a content analysis of field note data to create an overall framework for understanding implementation barriers, which are rarely addressed in the literature. Interestingly, the four themes that emerged as barriers—the absence of respect, interdependence, meaningful activity, and structure—permeated implementation efforts and represent the opposite of Montessori principles. These findings confirm literature that identifies similar barriers across diverse interventions. Findings

underscore the need for formal documentation of implementation barriers and extensive pre-implementation work to accomplish culture change in long-term care.

Title   Effects of a Montessori-based nutrition education program with fruit and vegetable taste testing on intake, preferences, and nutrition knowledge of preschool and kindergarten children

Citation

Vitale, N., & Coccia, C. (2020). Effects of a Montessori-based nutrition education program with fruit and vegetable taste testing on intake, preferences, and nutrition knowledge of preschool and kindergarten children. *Journal of the Academy of Nutrition and Dietetics*, *120*(9), A50. https://doi.org/10.1016/j.jand.2020.06.147

Summary/Abstract   Preschool is an important time for children to learn about healthy eating habits. However, differences exist between programming developed for Montessori classrooms compared to traditional schools. Montessori schools provide a concrete, hands-on learning approach which may be beneficial for nutrition education. This study sets out to assess the effects of a Social Cognitive Theory based nutrition education program+ taste testing on knowledge, intake and preferences of Montessori students aged 4-6 years old.

RESEARCH: RELATED

Title   The importance of cursive handwriting over typewriting for learning in the classroom: A high-density EEG study of 12-year-old children and young adults

Citation

Ose Askvik, E., van der Weel, F. R., & van der Meer, A. L. H. (2020). The importance of cursive handwriting over typewriting for learning in the classroom: A high-density EEG study of 12-year-old children and young adults. *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.01810

Summary/Abstract   To write by hand, to type, or to draw – which of these strategies is the most efficient for optimal learning in the classroom? As digital devices are increasingly replacing traditional writing by hand, it is crucial to examine the long-term implications of this practice. High-density electroencephalogram (HD EEG) was used in 12 young adults and 12, 12-year-old children to study brain electrical activity as they were writing in cursive by hand, typewriting, or drawing visually presented words that were varying in difficulty. Analyses of temporal spectral evolution (TSE, i.e., time-dependent amplitude changes) were performed on EEG data recorded with a 256-channel sensor array. For young adults, we found that when writing by hand using a digital pen on a touchscreen, brain areas in the parietal and central regions showed event-related synchronized activity in the theta range. Existing literature suggests that such oscillatory neuronal activity in these particular brain areas is important for memory and for the encoding of new information and, therefore, provides the brain with optimal conditions for learning. When drawing, we found similar activation patterns in the parietal areas, in addition to event-related desynchronization in the alpha/beta range, suggesting both similarities but also slight differences in activation patterns when drawing and writing by hand. When typewriting on a keyboard, we found event-related desynchronized activity in the theta range and, to a lesser extent, in the alpha range in parietal and central brain regions. However, as this activity was desynchronized and differed from when writing

by hand and drawing, its relation to learning remains unclear. For 12-year-old children, the same activation patterns were found, but to a lesser extent. We suggest that children, from an early age, must be exposed to handwriting and drawing activities in school to establish the neuronal oscillation patterns that are beneficial for learning. We conclude that because of the benefits of sensory-motor integration due to the larger involvement of the senses as well as fine and precisely controlled hand movements when writing by hand and when drawing, it is vital to maintain both activities in a learning environment to facilitate and optimize learning.

Title   The effective components of creativity in digital game-based learning among young children: A case study

Citation

Behnamnia, N., Kamsin, A., Ismail, M. A. B., & Hayati, A. (2020). The effective components of creativity in digital game-based learning among young children: A case study. *Children and Youth Services Review*, *116*. https://doi.org/10.1016/j.childyouth.2020.105227

Summary/Abstract   Recent studies regarding digital game-based learning (DGBL) are increasing, having the potential to enable new forms of learning, however, it remains unclear how DGBL applications can impact young students' creativity. The main purpose of this study is to investigate whether DGBL application technologies (tablets and smartphones), can improve creativity skills in preschool children (aged 3–6) and "what the main components effective of creative skills are to enhance learning for young children in DGBL". In this study, the procedure is a case study and the researcher used a sample of apps that were preloaded onto one tablet for seven children aged 3–6 years old in grade Foundation Stage 1 and 2 in a selected Montessori pre-school in Malaysia. In the present study, during using educational digital games by young children, the students' creative thinking process and the relationship between these components based on Analyzing Children's Creative Thinking framework (ACCT) are investigated in order to understand perceptions of creativity skills involved in the learning approach. The findings suggest that DGBL can potentially affect students' ability to develop creative skills and critical thinking, knowledge transfer, acquisition of skills in digital experience, and a positive attitude toward learning as well as provide for deep, insightful learning. The students experienced opportunities for engaging the creative thinking process in their activity and thinking issue understanding and learning in educational digital games. This study provides an outlook for researchers, game designers, developers in the field of DGBL, and creativity. This research provides new insights, advice, and effective suggestions on how to increase creative skills, motivate, and improve learning outcomes and demonstrate learning with DGBL composition in teaching young students.

Title   Community action plans for social justice advocacy: Leveraging the relationship between awareness and action

Citation

Braden, S. K., Lund, M., & Hatch, K. (2020). Community action plans for social justice advocacy: Leveraging the relationship between awareness and action. *TESOL Journal*. https://doi.org/10.1002/tesj.552

Summary/Abstract   Supporting multilingual learners' access to equitable and socially just language education requires more from teachers than a critical stance and language awareness. Teachers of multilingual students must understand how their awareness and ideologies drive their actions and how their actions can generate new awareness both inside the classroom in pedagogical choices and outside the classroom in interactions with families and community partners. To aid teachers in moving through cycles of applying awareness to action, the authors designed the Community Action Plan (CAP) assignment for a family and community engagement course. This article outlines the components of the course curriculum and the conceptual framework that guided its design. The authors also provide a case study of how one novice teacher, Katrina (co-author), navigated the curriculum. They offer suggestions for how language teacher educators might guide in-service and preservice teachers to implement CAPs of various types to promote socially just language education for and with K–12 learners.

Title   Ghosts in the machine: understanding digital citizenship as the struggle of students' souls with classroom technology

Citation

Lucey, T. A., & Lin, M. (2020). Ghosts in the machine: Understanding digital citizenship as the struggle of students' souls with classroom technology. *International Journal of Children's Spirituality*, *25*(2), 91–108. https://doi.org/10.1080/1364436X.2020.1797641

Summary/Abstract   Through this paper, the authors describe the challenge of interpreting and teaching digital citizenship in the classroom. They present digital citizenship as a concept that features a range of applications influenced by teacher and student traits. They begin with an explanation of the advent of digital/screen technology, and describe it as a corporately sanctioned addictive presence. They review the concepts of, Spirituality and digital citizenship, before introducing critical compassion as an additional dimension for understanding digital citizenship and the conditions that influence it. The authors describe a model that depicts critical compassion's relationship to digital citizenship and offers as a basis for strategies that concern teacher training, instructional practice, and professional direction.

Title   Administrating language: The language ideological voices of urban school administrators

Citation

Razfar, A., Rumenapp, J. C., & Torres, Z. (2020). Administrating language: The language ideological voices of urban school administrators. *Urban Education*. https://journals.sagepub.com/doi/abs/10.1177/0042085920959136

Summary/Abstract   Urban schools are becoming increasingly linguistically diverse. However, principals are not adequately prepared to address linguistic variation, and in particular, issues related to African American Language (AAL). This study explores the language ideological voices of urban school administrators. Focus group sessions were conducted with 15 administrators of predominantly African American schools about the function of AAL in their students' lives. Participants demonstrated variation in views toward AAL and struggled to name the language.

These discussions were mediated by multiple, even competing, language ideologies, as they attempted to converse about the use of AAL in schools.

Title   Education for sustainability development via school garden

Citation

Papadopoulou, A., Kazana, A., & Armakolas, S. (2020). Education for sustainability development via school garden. *European Journal of Education Studies*, *7*(9). https://doi.org/10.46827/ejes.v7i9.3247

Summary/Abstract   The garden can be viewed as an imitation of nature in an urban setting. In past times, many educators aware of the importance of nature in the education process were avid supporters of the school garden. Many studies that examined the influence of the school garden in the education process have shown that it offers multiple benefits to the students, one of which is that it furthers experiential learning. Students involved in gardening improve their overall academic performance and increases their interest in learning. It also seems to have positive effects on their overall behavior and on their emotional and social health. In the results of studies, we can also see the students who participated in gardening showed remarkable improvement in their overall physical health, and that they often adopted better nutritional habits. Finally, the school garden can serve as a portal for the students and for the school in general, to introduce them to environmental education and to sustainability in both theory and practice.