More

How Adults Can Help Children

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Presentation for the Montessori Asia Conference, May 2017
Montessori Practices: How we can help the children

• Background
• Introduction to my book
  • 3 principles, studies supporting them, and implementing in a classroom
• Study on the importance of the Montessori materials
• Study on pretend play
My Montessori History

• Attended as a child ages 3 to 6
• Strong Montessori family (Paula Polk Lillard)
  • Helped in mother’s classroom, read drafts of her books
• In my early 20s, took Assistants to Infancy training
• Believed probably some good things in Montessori and some things need modernizing. Wary of religious fervor Montessori attracts.

• Graduate School in Developmental Psychology:
  • Noticing a lot of support for Montessori in research
Own children -> Montessori
At my children’s Montessori school, when I

- Liked what was going on
  I told my family and learned
  it was real Montessori

- Did not like what was going on
  and I told my family,
  they explained it was not real or
  authentic Montessori
Example of a non-authentic practice used in some Montessori Elementary (6-12) classrooms

• Checklist sort of work journal
  • Children had a clipboard with a paper showing major subject areas
  • They had to check off each area (e.g., “Math work—done”) and
  • Were not allowed to have ‘free choice’ until checked off every area

• Has many problems, including that children worked superficially to get things checked off; they did not deeply concentrate on work
This led me to read more of Montessori’s original writings, and then to write book

• I wanted people in Montessori to realize that the practices Dr. Montessori recommended in her books are supported by research, and that changes to those practices are often not improvements.

• Also I wanted people in Education and Psychology who were inventing “new” educational methods that work better to know that Montessori often already includes those methods and more
2017, Oxford University Press
Chinese edition in progress, expected 2019
CHONGQING SOUTHWEST CHINA NORMAL UNIVERSITY PRESS CO., LTD.
Nine Montessori Principles Supported by a Lot of Research

1. Movement and cognition are closely entwined

Map of Australia

Ipad app of Australia

Eisen & Lillard, submitted; research funded by American Montessori Society and Brady Foundation, won the Association for Psychological Science Al Bandura Prize for Best Graduate Student Research 2017
Showed the app or gave the Montessori lesson. 
32 5-year-olds had 20 mins then tested on states.
Results

Memory for Australian States

- **Puzzle Condition**
- **App Condition**

Score

<table>
<thead>
<tr>
<th></th>
<th>Recognition</th>
<th>Recall</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Puzzle</strong></td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td><strong>App</strong></td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

* p < 0.05  ** p < 0.01
One of the greatest mistakes of our day is to think of movement by itself, as something apart from the higher functions. Mental development must be connected with movement and be dependent on it.

(Montessori, 1949)
From: FBS Public Relations publicrelations@forestbluffschool.org

Subject: boys doing binomial and trinomial equations using cubes and beads.

Date: February 20, 2016 at 6:36 PM

To: alillard@detmer.net
Implications for Montessori Practice

• Have a full set of Montessori materials for the age level

• Only have Montessori materials

• Have light furniture that children can move
  • Walk on the line; also the Silence
Nine Montessori Principles Supported by a Lot of Research

1. Movement and cognition are closely entwined
2. People thrive when they have a sense of choice and control over their own lives.
   • Deci and Ryan: Self-Determination Theory (has very strong support)
Rovee-Collier

• A child who could not move first mobile does not figure out that he is able to move a new mobile

• Even at 2 months old, sense of control/agency transfers to a new situation

See also Watson & Ramey (1972)
Life is based on choice, so they learn to make their own decisions. They cannot learn through obedience to the commands of another.

(Montessori, 1989, p. 26)
Implications for Montessori Practice

• Do not use checklists!
• Give children choices about which material to use
  ➢ WITHIN LIMITS (see my book, Montessori’s books)
  ➢ Choices must be constructive for the child and society
• Note the Montessori materials are all about choices
  • Which sound cylinder goes with which, for example
  • Develop intelligence by having children “judge, reason, and decide”
Nine Montessori Principles Supported by a Lot of Research

1. Movement and cognition are closely entwined
2. People thrive when they have a sense of choice and control over their own lives.
3. Self-regulation is the most important characteristic to develop in young children.
Age 4 self regulation predicts age 32 outcomes

Moffitt et al. (2011) *Proceedings of the (US) National Academy of Sciences*
The task of education is to fix the wandering mind of the child upon an object. When we succeed in our aim, it as as though the child saw the object for the first time. The child concentrates upon the object with such enthusiasm, as though it was something the child had been seeking for a long time - As though to form the unity of the personality. (Montessori, 1994, p. 159)
Implications for Montessori Practice-to promote concentration

• Use the Montessori materials, adjusted for children’s developmental level so they are deeply interesting
• Have 3-hour periods in the morning and again in the afternoon when children are free to choose their own work without interruption
• If a child is disrupting other children’s concentration, that child must be kept near the teacher to protect the concentration
Nine Montessori Principles Supported by a Lot of Research (see my book for more)

1. Movement and cognition are closely entwined
2. People thrive when they have a sense of choice and control over their own lives.
3. Self-regulation is the most important characteristic to develop in young children.
4. We learn and do best when we are interested.
5. Extrinsic rewards reduce motivation over the long haul.
6. Children learn well from peers.
7. Learning is best when the context is meaningful.
8. Some adult interactions are more optimal for development.
9. Children do best when the environment has order.
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Children do best when teachers limit classroom to full set of Montessori materials

What Belongs in a Montessori Primary Classroom?

Results from a Survey of AMI and AMS Teacher Trainers

By Angela S. Lillard

Montessori@amiusa.org
www.amiusa.org

What Belongs in a Montessori Primary Classroom?

Materials:

By Angela S. Lillard
University of Virginia
12/11/05 AMI/AMS Environment Award
• 172 children ages 3 to 6
• 5 Montessori Schools (14 classrooms)
  • 3 Classic classrooms
  • 11 Supplemented classrooms
• 2 Conventional Schools (~8 classrooms)
Percent of Montessori Material Available/Used

- Classic: Materials Available - 100%
  - Materials in Use - 100%

- Supplemented: Materials Available - 60%
  - Materials in Use - 40%
School Year Change: Self-Regulation

\[ F(2, 170) = 11.09, \, p < .01 \]
School Year Change: Reading

\[ F(2, 169) = 4.17, \quad p = .02 \]
School Year Change: Vocabulary

\[ F(2, 168) = 4.08, \ p = .02 \]
School Year Change: Math

Kruskal-Wallis: 6.37, p < .05
The material should be limited in quantity... Evidence should certainly modify the notion that a child is helped in proportion to the number of educational objects that are placed at his disposal. The confused multitude of objects with which he is surrounded only aggravate the chaos of his mind.

(Montessori, 1906/1967, p. 105)
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What about play?

• There is not good evidence that pretend play helps development.
• Pretend play is fun and very creative, but is it all children should do?
• We asked the question, What do they want to do?
Children’s Activity Preferences

This girl is pretending to bake cookies. See, these are pretend cookies.

This girl is really baking cookies. See, these are real cookies.

Which would you rather do? Would you rather pretend to bake cookies or really bake cookies?

Taggart, Heise, & Lillard (in press) Developmental Science
Method

• 100 children ages 3 to 6 (average age 4 years, 10 months)
• 9 choices of pretend and real activities presented in a book
• Boys saw a book of boys; girls saw a book of girls

• Children were asked which activity they would rather do, and why
9 Activities: Would you rather really or pretend to...
(All things US children commonly pretend do to and can really do)

- Bake cookies
- Fish (“go fishing”)
- Eat ice cream
- Feed a baby
- Ride a horse
- Drive a tractor
- Talk on a telephone
- Cut vegetables
- Wash dishes
Choices made by 100 children ages 3 to 6

Children's Preference

- Pretend
- Real
Changes with Age

3-year-olds

4-year-olds

5-year-olds

6-year-olds

Pretend
Real
Why do children prefer real activities?

• Want to be useful (40%)
  • “We could learn how to feed babies in case my mom becomes a babysitter and I help”

• Enjoy the activities (38%)
  • “Because I like to cut vegetables.”

• When a child said he or she preferred pretend, the most common reason was because they felt incapable of or afraid of or would be prohibited from doing the activity for real
  • “I might pull up a shark or a big dangerous other thing [if I were really fishing].”
Follow Up Studies

• Was not just that our real pictures looked more fun - children in another study said the pictures look equally fun.

• It’s not just the pictures we used: Children in another study still preferred real even when exact same picture was used, described as pretend or real.

• On going study: it’s what really do, not just what claim would rather do based on a book.
It was the children themselves who showed that they preferred...the small ‘real-life’ utensils to toys...Having given the child real things in a real world, we expected to see [the child’s] joy and delight in using them. But actually we saw far more than that. The child’s whole personality changed, and the first sign of this was an assertion of independence. It was as though [the child] were saying: ‘I want to do everything myself’.

(Montessori, 1967, pp. 169-170)
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Conclusions

• Dr. Montessori made brilliant observations about children that are still true today.
• Montessori seems to be the best system we have for helping children.
• Read her books carefully, every day, and follow what she said.
• If you are looking for modern scientific evidence about it, my book can help.
• See www.montessoriguide.org
• Articles at Montessori-science.org

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