

Montessori may promote adult well-being

A new study suggests powerful long-term effects



BY **DAVID AYER**

Dr. Angeline Lillard and her team at the University of Virginia are out with another study showing the benefits of Montessori (*An Association Between Montessori Education in Childhood and Adult Well-being*).

Montessori education, public or private, was found to be strongly associated with “general well-being” and significant components of the construct: **happiness, meaning, and self-confidence; engagement and seeking challenge; and social trust and sense of community.**

The study has seen some coverage in *Forbes* and *Psychology Today*, among other outlets. “Childhood Montessori Associated with Adult Well-being” is essentially the headline, and for many in the Montessori world it was just one more confirmation of what we feel like we’ve known all along.

But perhaps you are wondering just what is meant by “well-being”, how researchers could possibly measure it, and what it is about Montessori that could be driving the association. MontessoriPublic took a look under the hood of this dense and statistically complex study to find out what’s going on.

What is well-being?

Well-being generally is “what is good for a person” at least according to the Stanford Encyclopedia of Philosophy, and as you can imagine, there’s



Self-determination and meaningful activity promote well-being

plenty of debate among philosophers about just what that means. But in psychological research, it’s a well-studied and extensively defined concept, even while there are a range of mostly overlapping constructs and measures for the idea.

Lillard and her team use the definitions “how people think and feel about their lives” and “the felt experience of health, happiness, and flourishing”. That is to say, people who feel pretty good about their lives, all things considered, have well-being. But it’s not just subjective: Higher levels of well-being predict personal and professional success, increased creativity, physical health and longevity, and life satisfaction. So, it doesn’t just feel good to feel good about your life—it’s actually good for you!

Why Montessori?

So why (as a matter of scientific inquiry) did the researchers look at Montessori education in relation to

well-being later in life? Well, as the paper succinctly puts it, on careful examination, “*Montessori pedagogy has features that enhance well-being contemporaneously and predictively, including self-determination, meaningful activities, and social stability.*” That is to say, Montessori education has all these qualities we already know enhance and predict well-being. Maybe it’s worth checking out?

The first feature is **self-determination**—a hallmark of Montessori education, in which children largely chose their own activities. Choice, sense of control, and agency have been shown to predict “intrinsic motivation, self-efficacy, happiness, and sense of competence,” all elements of well-being. The absence of external motivations, tests, and grades also supports self-determination. So, the authors tell us, “*We hypothesized that adults who formerly attended Montessori schools*

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would show higher general well-being, including self-confidence, and be more apt to seek challenge and be engaged with their work.”

Montessori classrooms also feature **meaningful activities**. “*Montessori offers children meaningful activities, by which we mean activities for which the underlying reasons are clear, and thus give people a sense of purpose,*” the paper says. Obviously, self-chosen activities are inherently meaningful to the child choosing them, and this makes up a big chunk of a child’s Montessori experience. Children also take part in meaningful community care and self-care such as cleaning, meal preparation, dressing, etc.

Academic materials embody meaning in the materials themselves: the object representing the number 1,000 is literally 1,000 times larger than the object representing a unit. Meaningful activities drive higher engagement, which also increases well-being. So, the researchers hypothesized that increased engagement in school would translate to increased engagement throughout life, and that “*meaningful activities in the school years could translate to a general sense of meaning in life and happiness, and thus be related to general well-being.*”

The third feature of interest was **social stability and cohesion**. Mixed age classrooms with three-year groupings (“looping” in education jargon) keep children and adults together for long periods of time, fostering social-emotional development and sustained relationships. Looping has been shown to support positive relationships, self-confidence, and academic performance, and of course collaboration among students and with teachers is more prevalent in these classrooms. All of these factors are related to general well-being, so, the authors suggest, “*the strong social stability in Montessori schools could also predict higher general well-being later.*”

Montessori drives well-being in children...

So. Montessori education has characteristics that very plausibly might predict well-being later in life. Is there any existing research to support this idea, and to disentangle it from the selection bias arising from the socio-economic characteristics of children in (mostly tuition-based) Montessori schools? It turns out that there is. Lillard and her colleagues have been able to conduct several “natural experiment” studies over the last two decades, comparing children who attended lottery-admission public Montessori programs with similar children who applied for admission but were randomly excluded. The results:

In terms of self-determination and its benefits, the studies showed better academic performance and mastery orientation. In terms of social skills, they showed better social cognition and behavior, and a stronger sense of community. They also indicated more developed executive function. Academic performance, mastery orientation, social skills, and executive function all predict higher well-being.

... but what about after they grow up?

Montessori certainly seemed to have caused (and not just be associated with) well-being, or at least its components, in these children. But does it have an effect into adulthood?

Since well-being is an inherently self-reported characteristic, the next step was to ask people. The researchers assembled a sample of 1905 respondents to an internet survey, about half of whom had attended a Montessori school for at least two years, with the rest having attended conventional schools. Respondents answered questions on 18 established scales used to

measure aspects of well-being. These included (with sample items):

- six *Psychological Well-being* scales, with items such as “I am good at managing the responsibilities of daily life” and “When I look at the story of my life, I am pleased with how things have turned out so far”
- two *Social Well-being* scales: “I can predict/make sense of the world”, “I feel close to people in my community”
- a *Satisfaction with Life* scale: “In most ways my life is close to my ideal”
- a *Meaning in Life Questionnaire*: “My life has a clear sense of purpose”
- a *Subjective Vitality* scale: “I feel alive and vital”
- a *Short Need for Cognition* scale: “I really enjoy a task that involves coming up with new solutions and problems”
- a *Mindful Attention Awareness* scale: “I find it difficult to stay focused on what is happening in the present” (a high score means that is almost never true)

In addition, researchers gathered demographic and school history information from participants. Respondents were asked about what type of school they attended (Regular/Traditional, Montessori, Homeschool, Waldorf, Reggio Emilia, Other Alternative), but not until the end of the survey.

Factor analysis—four factors emerged

This is where the paper, and the research and expertise behind it, get quite technical. The raw data set consisted of nearly 2,000 responses on eighteen scales each comprising multiple items—hundreds of thousands of data points. How can psychologists make sense of this sea of information? The answer is factor analysis, a sophisticated statistical technique which finds correlations and associations within

the vast set of individual responses and can reduce the variables to a manageable number of unmeasured but statistically valid underlying factors.

Based on prior research, the team initially hypothesized three “latent clusters”: one concerning **happiness, meaning, and self-confidence**; one concerning **engagement and seeking challenge**; and a third concerning **social trust and sense of community**. Factor analysis validated these clusters, and suggested a better fit to the data with a four-factor model, splitting the first cluster into **self-confidence** and **general well-being**.

This is to say, at the risk of massive oversimplification, that if you build a model where answers to questions on various scales “hang together” in this four-cluster way, it does a pretty plausible job of predicting the actual results. Using this model, every survey respondent was assigned a score on each of these four variables.

Does Montessori matter?

The next step was to compare scores on these four clusters with demographic and school attendance data from the survey. Demographic data enabled the researchers to control for gender, race, age, childhood socio-economic status (SES), and private schooling. The paper states the basic finding succinctly:

Montessori attendance significantly predicted higher scores on all four latent variables: General Well-being, Engagement, Social Trust, and Self-confidence. This makes theoretical sense, in that Montessori schools have features that are related to these aspects of well-being.

Maybe it's private school parents

The team didn't stop there, continuing to ask questions of the data. Perhaps it's not at least two (and an average of eight) years of Montessori which

predict well-being, but some other unmeasured variable, such as having parents who seek out alternative school. Since parents who chose private school could be assumed to have this characteristic, the team looked at just the private school respondents, of which some attended Montessori schools and some did not. Even in this group, and even controlling for age, gender, race, and childhood SES, “having attended Montessori for at least 2 years (and an average of 9 years) was significantly associated with higher well-being on three of the four factors: General Well-being, Engagement, and Social Trust.”

Or maybe it's Montessori parents

But maybe there's something about parents who chose Montessori specifically (public or private) that drives well-being. This is a tricky variable to isolate. However, since Montessori is less available in elementary and higher grades, the length of time spent in Montessori could be used. Parents who chose Montessori for young children, but were not able to continue through higher grades would presumably be similar to Montessori parents who were able to keep children in Montessori for longer, so comparing across number of years in Montessori could isolate just the Montessori effect, if there was one. The result here (again controlled for SES, etc.):

the duration of Montessori was significant for two of the four factors (General Well-being and Engagement). For all four factors, the direction was positive: being in Montessori school for longer was associated with at least slightly higher scores on all factors.

The company we keep

At the end of the day, even a study as comprehensive as this can only show an association between Montessori

education and adult well-being, and the authors are at pains to make this clear. To establish causality, it would be necessary to randomly assign children to Montessori and non-Montessori conditions and follow them through to adulthood. No study with such a broad scope is likely to be undertaken in the foreseeable future. Although, the handful of randomized “lottery-control” studies do show positive immediate outcomes for Montessori children, and a larger national study is currently under way.

Still, considering the associations that are piling up between Montessori and academic achievement, standardized test scores, executive function, and outcomes for children of color, among others, it makes sense to ask if Montessori is more than just a fellow traveler with these outcomes, and might in fact be the driving force.

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