MONTESSORI AND CREATIVITY

THE IMPACT OF MONTESSORI ON CREATIVE POTENTIAL

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BACKGROUND

Creativity is commonly acknowledged as the ability to produce original works (Paulus & Nijstad, 2003; Runco & Jaeger, 2012). Considered as one of the most important skills for childhood development (Kaufman & Sternberg, 2010; Runco, 2004), creativity contributes to an individual's problem-solving and innovative ability, which play a crucial role in personal growth and professional development (Besançon & Lubart, 2008). Kaufman and Sternberg (2010) define creativity as "the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context" (p. 49). This definition suggests that creativity is not a personal trait, but an ability that can be influenced by contextual or broader cultural resources, such as pedagogy and educational environment. Studies on creative ability have demonstrated the impact of educational context (Besançon & Lubart, 2008; Besançon, Lubart, & Barbot, 2013). Traits of school environment can either foster or suppress children's creativity development, including instructions from teachers, tasks and exercises, and classroom space (Besançon & Lubart, 2008; Besançon et al., 2013).

RESEARCH METHODS

The sample was comprised of 148 third-grade students at two rural public schools in the southeastern United States. Of these, 77 attended a Montessori public school and 71 were enrolled in a traditional public school. The Evaluation of Potential Creativity (EPoC)—developed by Lubart, Besançon, and Barbot in 2011—is a validated assessment that measures creative potential through examining both divergent and convergent thinking. The EPoC assessment is standardized and requires students to produce original drawings based on a specific set of stimuli. Researchers had students complete one divergent-exploratory task and one convergent-integrative task during the first session and then another divergent-exploratory task and convergent-integrative task in a second session approximately one to two weeks later. Using detailed EPoC guidelines, researchers scored every task from each session and then combined these scores into one final score.

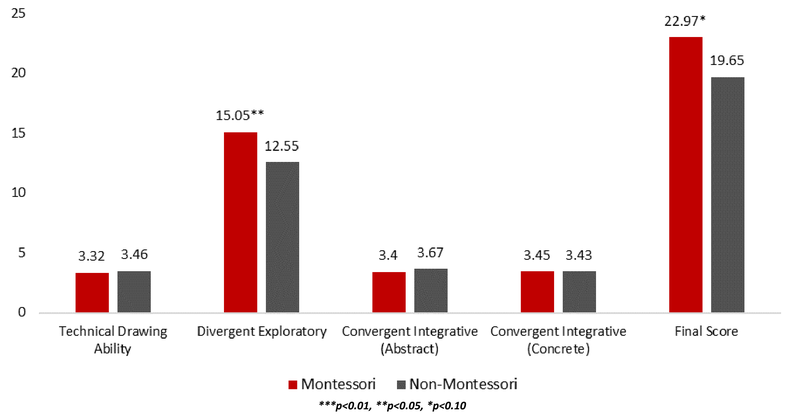
RESEARCH QUESTION

To what extent do students in a public Montessori school differ from students in a public non-Montessori school on an assessment of creative potential?

FINDINGS

To get a sense of the differences in raw EPoC scores, researchers performed multiple bivariate, difference-in-means tests to examine the relationship between school type and students' scores before adjusting for student demographic factors. These results are presented in **Figure 1**. Initial results show that Montessori students perform better on divergent-exploratory tasks and exhibit a higher final scores than non-Montessori students.

Figure 1: EPoC Scores of Montessori and Non-Montessori Participants



***p<0.01, **p<0.05, *p<0.10

While these results are suggestive of a Montessori advantage, there are demographic differences between the two groups. Thus, a multivariate analysis was used to analyze these scores. After controlling for demographic factors, Montessori students scored 2.28 points higher on the EPoC. This is a statistically significant difference at the two-tailed, p<.10 level. To get a sense of the magnitude of this difference, researchers re-estimated the regression using standardized scores as the dependent variable. Using this approach, researchers found that Montessori students score .28 standard deviations (s.e. = 0.16) higher than non-Montessori students. This is a substantively large difference.

Figure 2 demonstrates that Montessori students scored 2.63 points higher on the divergent-exploratory score than non-Montessori students. This means that Montessori students, on average, drew 2.63 more pictures than non-Montessori students after getting the abstract and concrete stimuli. The differences between the two groups was small and not statistically significant for technical drawing ability and the convergent-integrative outcomes.

Figure 2: Examining Components of the EPoC Assessment

	Divergent-Exploratory	Convergent-Integral (Abstract)	Convergent-Integral (Concrete)	Technical Drawing Ability
Montessori	2.63** (1.25)	-0.37 (0.24)	-0.02 (0.21)	-0.14 (0.28)
Poverty	-0.36 (1.62)	0.22 (0.29)	-0.33 (0.26)	-0.16 (0.34)
Special Education	-2.11 (1.52)	-0.43 (0.38)	-0.19 (0.27)	0.09 (0.40)
ESL	2.51 (2.99)	-0.91 (0.59)	-0.84* (0.50)	-1.23** (0.48)
Female	-0.86 (1.27)	0.25 (0.24)	0.41* (0.22)	0.79*** (0.28)
Black	-1.13 (1.97)	-0.13 (0.37)	-0.10 (0.27)	-0.47 (0.37)
Hispanic	-2.13 (2.37)	0.02 (0.58)	0.42 (0.45)	0.62 (0.41)
Other Race	4.61 (5.13)	-1.24*** (0.37)	-1.15*** (0.23)	-1.21 (0.84)
Constant	13.58*** (1.56)	3.63*** (0.27)	3.57*** (0.26)	3.29*** (0.35)
Observations	148	148	124	148
R-squared	0.05	0.07	0.08	0.10

Robust standard errors in parentheses
****** p<0.01, ** p<0.05, * p<0.10***

REFERENCES

Barbot, B., Besançon, M. & Lubart, T. 2015. Creative Potential in Educational Settings: Its Nature, Measure, and Nurture. *Education* 3-13 43(4): 371–81.

Besançon, M. & Lubart, T.. 2008. Differences in the Development of Creative Competencies in Children Schooled in Diverse Learning Environments. *Learning and Individual Differences* 18(4): 381–89.

Besançon, M., Lubart, T., & Barbot, B. 2013. Creative Giftedness and Educational Opportunities. *Educational and Child Psychology* 30(2): 79-88.

Runco, M. A., & Jaeger, G. J. 2012. The Standard Definition of Creativity. *Creativity Research Journal*, 24, 92-96.

Kaufman, J. C., & Sternberg, R. J., eds. 2010. *The Cambridge Handbook of Creativity*. New York: Cambridge University Press.

Lau, Sing et al. 2013. Bicultural Effects on the Creative Potential of Chinese and French Children. *Creativity Research Journal* 25(1): 109–18.

Paulus, P. B. & Nijstad, B. A. 2003. *Group Creativity: Innovation through Collaboration*. Oxford University Press.