

Apr 23rd, 6:00 PM - 6:15 PM

Building Depth of Understanding in and Appreciation of Mathematics Based on Adolescent Brain Research

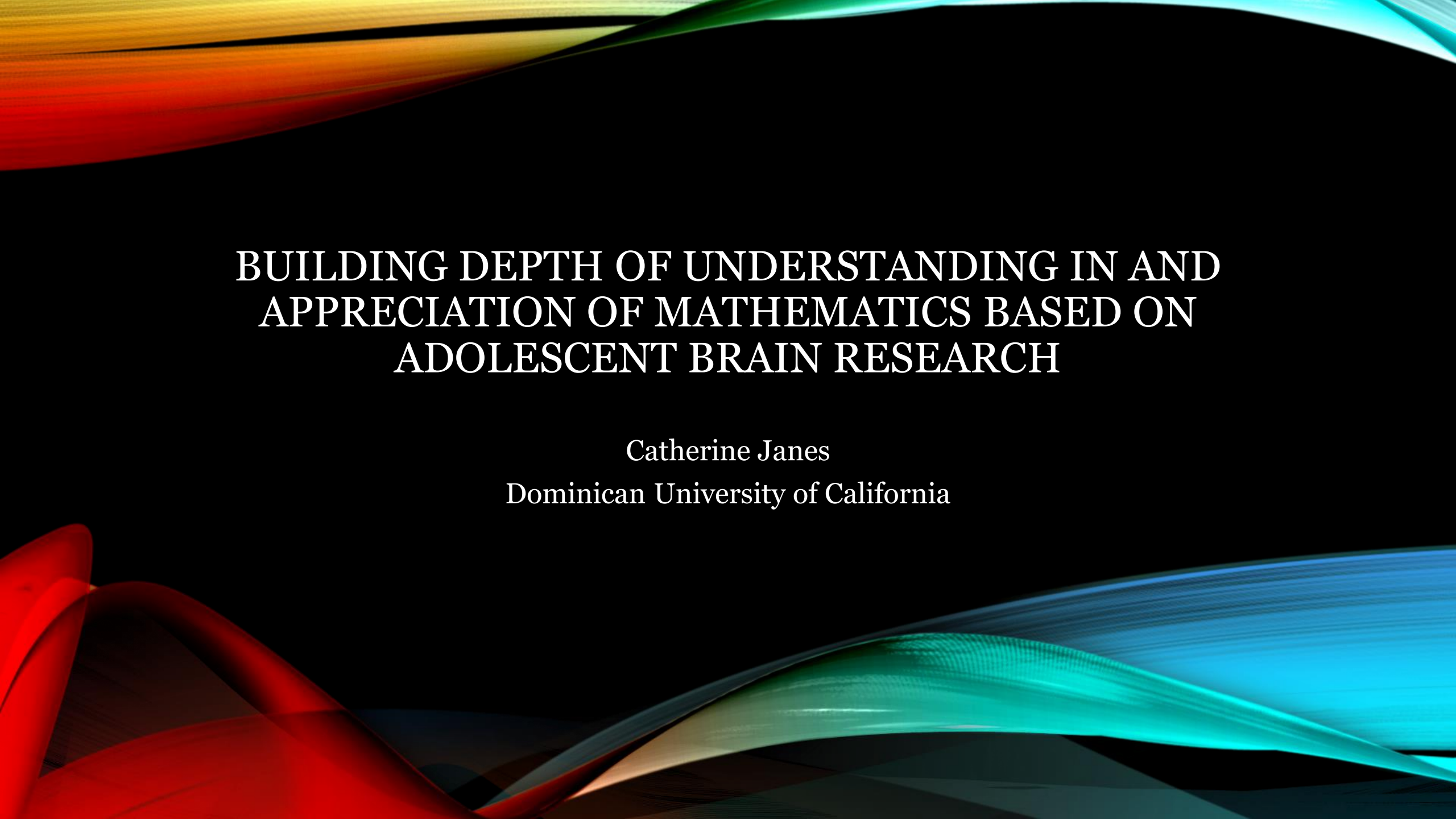
Catherine Janes
Dominican University of California

Survey: Let us know how this paper benefits you.

Janes, Catherine, "Building Depth of Understanding in and Appreciation of Mathematics Based on Adolescent Brain Research" (2015). *Scholarly and Creative Works Conference 2020*. 1.

<https://scholar.dominican.edu/scw/scw2015/Guz202/1>

This Event is brought to you for free and open access by the Student Scholarship at Dominican Scholar. It has been accepted for inclusion in Scholarly and Creative Works Conference 2020 by an authorized administrator of Dominican Scholar. For more information, please contact michael.pujals@dominican.edu.



**BUILDING DEPTH OF UNDERSTANDING IN AND
APPRECIATION OF MATHEMATICS BASED ON
ADOLESCENT BRAIN RESEARCH**

Catherine Janes

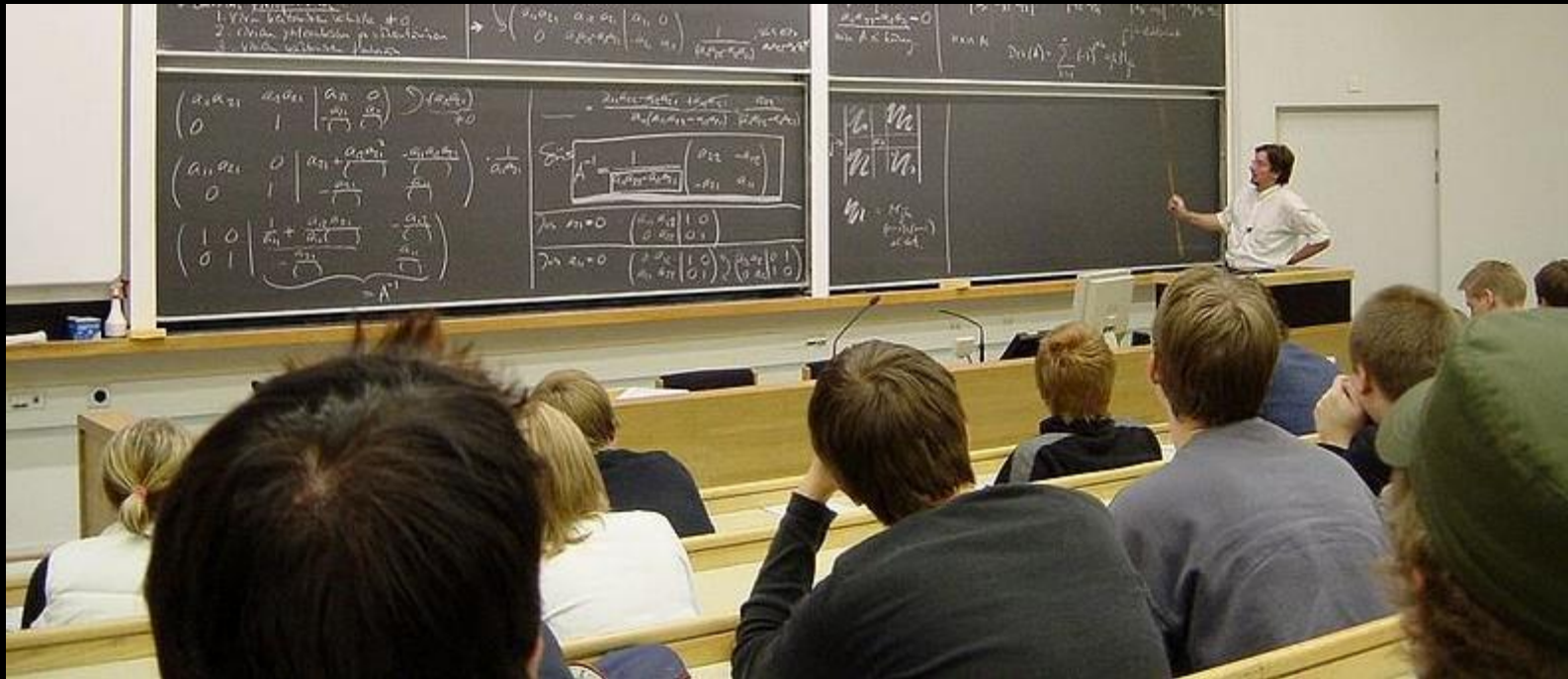
Dominican University of California

- History of Math Education
- Social Constructivism
- Teenage Brain and Adolescent Development



Gears Brain 2[Clip Art]. Retrieved April 17, 2015, from: URL (<http://pixshark.com/brain-gears.htm>)

HISTORY OF MATHEMATICS EDUCATION



[Untitled photograph of math lecture]. (2011). Retrieved April 17, 2015, from: URL (<http://dailycaller.com/2011/12/16/thousands-to-potentially-see-pell-grant-cut/>)

$$\begin{array}{r} 36 \\ \times 24 \\ \hline 744 \\ + 720 \\ \hline 864 \end{array} \quad \begin{array}{l} (4 \times 36 = 144) \\ (2 \times 36 = 72, \\ \text{with a } 0 \text{ added in} \\ \text{the ones' position}) \end{array}$$

Masnick, M. (Creator). (2011). *The way we used to multiply* [clip art], Retrieved April 17, 2011, from: URL (<https://www.techdirt.com/articles/20110310/03354413427/changing-way-that-math-is-taught-to-children.shtml>)

SOCIAL CONSTRUCTIVISM



[Untitled photograph of collaborative learning]. (2013). Retrieved April 17, 2015, from: URL (<http://edge.ascd.org/blogpost/5-tips-to-make-your-collaborative-learning-plans-effective>)



[Untitled clip art of teamwork]. (2014). Retrieved April 17, 2015, from: URL (<http://joelcadwell.blogspot.com/2014/11/building-blocks-compelling-image-for.html>)

TEENAGE BRAIN AND ADOLESCENT DEVELOPMENT



[Untitled photograph of a teenage brain]. (2011). Retrieved April 17, 2015, from: URL (<http://www.treatment4addiction.com/drugs/society/teen-brain/#>)



[Untitled photograph of a teens socializing]. (2013). Retrieved April 17, 2015, from: URL (<http://teensofhs.blogspot.com/2013/01/socializing.html>)

NEXT STEPS



[Untitled photograph of a person about to step]. Retrieved April 17, 2015, from: URL (<http://orchardcommunity.org/next-steps/>)

REFERENCES

- Blakemore, S. (2007). Brain development during adolescence. *Education Review*, 20(1), 82-90.
- Ellis, M. W., & Berry, R. Q. I.,II. (2005). The paradigm shift in mathematics education: Explanations and implications of reforming concepts of teaching and learning. *Mathematics Educator*, 15(1), 7-17.
- Lau, P. N., Singh, P., & Hwa, T. (2009). Constructing mathematics in an interactive classroom context. *Educational Studies in Mathematics*, 72(3), 307-324.

REFLECTIONS QUESTIONS



Little Girl Reflecting [Photograph]. (2014) Retrieved April 17, 2015, from:
URL (winnersdrinkmilk.com/2014/01/a-successful-new-years-resolution-does-it-exist/)