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A Mathematician's Lament: How School Cheats Us Out Of Our Most Fascinating And Imaginative Art Form



Synopsis

“One of the best critiques of current mathematics education I have ever seen.”
•Keith Devlin, math columnist on NPR’s Morning Edition
A brilliant research mathematician who has devoted his career to teaching kids reveals math to be creative and beautiful and rejects standard anxiety-producing teaching methods. Witty and accessible, Paul Lockhart’s controversial approach will provoke spirited debate among educators and parents alike and it will alter the way we think about math forever.
Paul Lockhart, has taught mathematics at Brown University and UC Santa Cruz. Since 2000, he has dedicated himself to K-12 level students at St. Ann’s School in Brooklyn, New York.

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Paul Lockhart became interested in mathematics when he was 14 (outside the classroom, he points out). He dropped out of college after one semester to devote himself exclusively to math. Based on his own research he was admitted to Columbia, received a PhD, and has taught at major

universities. Since 2000 he has dedicated himself to "subversively" teaching grade-school math.

When I began to read Lockhart's Lament, I was skeptical -- particularly with his view of mathematics as more of an art than a science. I am an applied mathematician, and I most enjoy teaching applied mathematics, but after serious and humble reflection, I came to fundamentally agree with Lockhart. Mathematics was developed as an expression of human creativity, and teaching it as such is really the only viable option for most students to be able to appreciate it and therefore fully apply it (if they ever need or want to). As a relatively new mathematics teacher, I appreciate Lockhart's observations of the mathematics curriculum. I taught (college) trigonometry just before reading his Lament for the first time, and I was blown-away (and a little devastated) by the accuracy of his scathing description of that course: "Two weeks of content are stretched to semester length by masturbatory definitional runarounds... students must learn to use the secant function, 'sec x,' as an abbreviation for the reciprocal of the cosine function, ' $1 / \cos x$ ' (a definition with as much intellectual weight as the decision to use '&' in place of 'and.') That this particular shorthand, a holdover from fifteenth century nautical tables, is still with us... is mere historical accident... Thus we clutter our math classes with pointless nomenclature for its own sake." This book is an absolute necessity for anyone who wants to make sure their students actually enjoy mathematics. But be warned, if you view teaching mathematics as just a job, this book probably isn't for you.

Says everything I've ever felt about mathematics in schools. Too bad it's had no effect on math pedagogy. Only a private tutor or a very exceptional math teacher could provide the type of education Lockhart envisions. Typical math drudges in the bureaucratic people-processors we call "public schools?" Not likely. Lockhart's passion for his subject is contagious. For a "math nerd," he's a very good writer. He's funny and at times poetic. This book should be inspiring to anyone with an independent interest in numbers for their own sake. Might also encourage people who are being forced to run the math gantlet in school. Math aside, it's a very entertaining piece of literature. Highly recommended.

Once in a while we read books that we just know are especially important, and that we know we will be thinking and talking about long after reading them. This book is one of them for me. I am a returning adult student, and I am about to finish my training to become a math teacher. Having gone through my education program, my enthusiasm was just about completely drained, and I've been having trouble remembering why I ever wanted to become a math teacher in the first place. Why

would anyone? Paul Lockhart knows, and his book has reawakened my desire to help students discover the joy of mathematics. His argument is concise, and he makes it forcefully. His book is a joy to read, mainly because his understanding of the subject and his passion for it are clear in every page. He reinforces ideas I already had about how school sucks the life out of math (and all subjects), but he also challenges some of my opinions. I think this will happen with most people who read it. Once he finishes making his argument about math education in about the first two-thirds of this short book, he devotes the remaining section to describing what he finds wonderful about mathematics itself. This section should make just about anyone want to become either a mathematician or a math teacher. I want people to read the book for the specifics of his arguments, but I want to discuss one important point that he makes. Many people in math education claim that in order to make math more understandable and interesting to students, we need to show how practical it is and how it is used in everyday life. I've always felt like this idea was wrong, or at least limited in its usefulness in that regard. Well, Lockhart demolishes the idea, essentially claiming that practical uses are simply by-products of math, and that the real excitement and beauty of mathematics is in the abstract, imaginary, and creative world of mathematical ideas that have no specific connection to the everyday. By-products and applications can make math seem boring and secondary to the uses it serves. I agree with him--and much more now after having read his argument. I honestly think just about everyone should read this book. Of course math teachers should, as should anybody involved in math education in any way. But I think people outside of math education should read it too. The specific mathematical ideas discussed in the book do not require a strong mathematical background, and I can't think of a better book that so concisely conveys the nature of the subject and the way it is viewed and misunderstood in society. I'm still not sure I agree with Lockhart's every point, but I love this book. (And I might agree with his every point after more thought and experience in the classroom.)

This graceful rant opened my eyes to the fact that I've never done Math! I never realized math is a creative process. My math teachers handed me the process and had me plug in numbers. There was no discovery involved. I never knew there could be more. No wonder I hated it!

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