

Building Minds, Making Meaning

How Chris Rappleye Uses Neuroscience to Revolutionize English Class

"*Lord of the Flies* is a terrific portrait of what stress does to the brain. The way those executive functions break down is really well observed," shared **Upper School English Teacher Chris Rappleye**. To Rappleye, teaching English and language arts is more than exploring different writers, genres, and writing styles or learning how to read and write well; it centers on making meaning, building relationships, and growing the brain. For 35 years, Rappleye has shepherded the growth and growth mindset of Country Day and MICDS students, with a distinct connection to how reading literature and writing form new neural pathways and develop executive function in the brain.

Despite generations of teachers within his family, his original arc was to be a cardiologist. He changed his mind as an older teen. "In my junior year of high school, I recognized that I liked school, and I liked being in school. When I studied, I pretended to be a teacher and thought, 'How would I teach this?' which was a really effective way to learn things. So, I started asking my teachers if they liked teaching. They were positive about it, and I decided to try it." With an undergraduate history and religious studies degree, he decided to pursue an MFA in the Writer's Program at Washington University. After an opportunity to teach freshman composition as a graduate assistant, he was sold on education. "Some of it I did well, and some of it I didn't, but it did confirm enough that this is something I like to do," he said.

Beyond simply enjoying the role of teacher, Rappleye has always been interested in how people make meaning and what they find meaningful.

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In 2010, Rappleye expanded his knowledge of teaching English by pursuing brain science and mindfulness. A professional development opportunity to attend a "Learning the Brain" conference in San Francisco provided an essential framework for his teaching, and it has become a driver for the majority of the professional development work he's done since then. Rooted in the structure of mind-brain education and health science, which includes mental and physical health, cognitive science,

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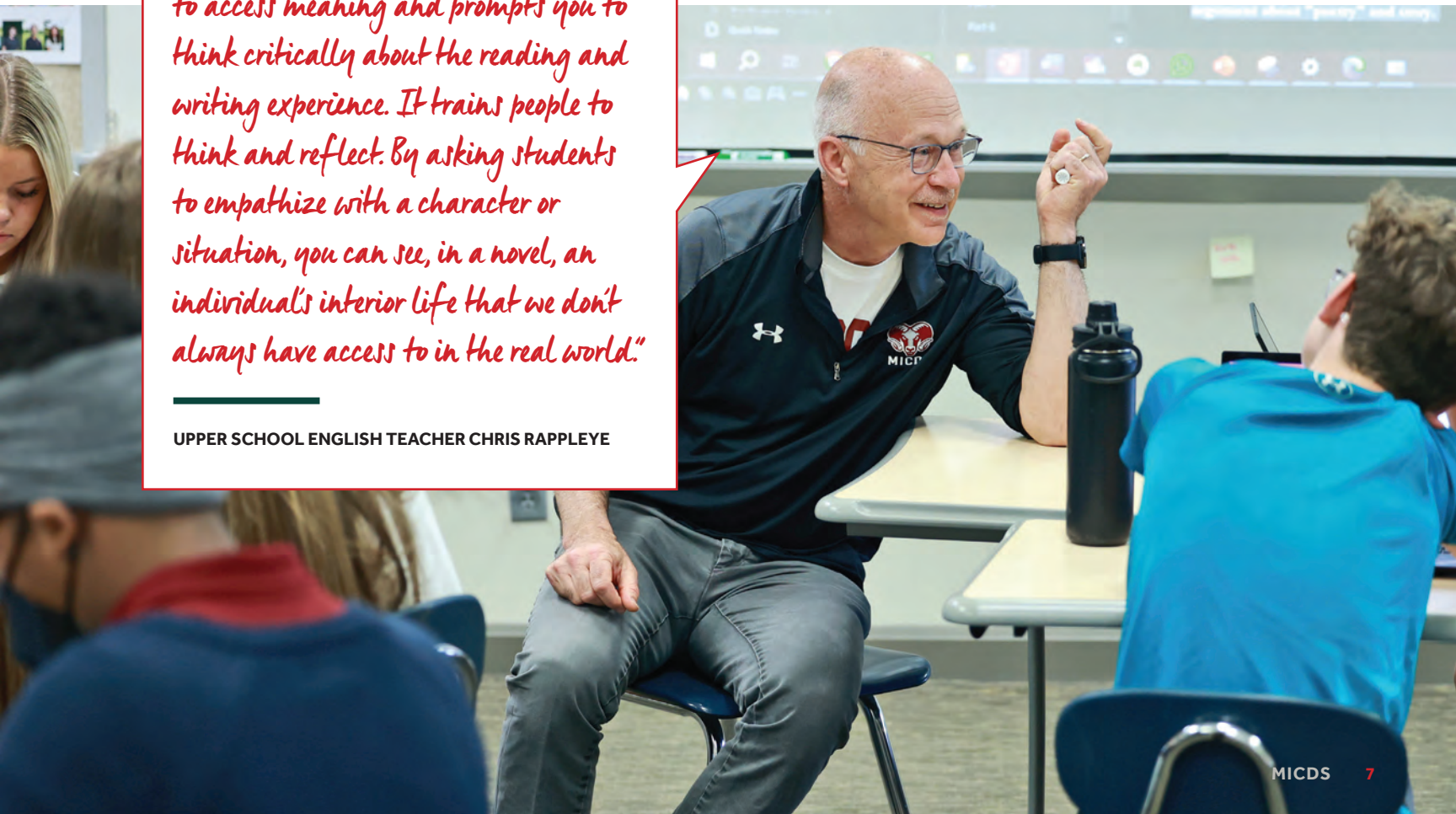
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neuroscience, and educational research, this transdisciplinary approach informs what teachers should be doing in the classroom and is grounded in substantive science and research. "It's been a really rich field and continues to develop and inform our work. But if there is a consistent throughline that's been there since the beginning, it's the emphasis on stories, reading, critical thinking, and writing clearly and well for yourself," he said.

Over the years, Rappleye has taught middle schoolers and all Upper School grades except sophomores. For the last several years, he has taught only ninth and twelfth grades. "Ninth graders go through a real orientation process before they settle down, and it takes until about January before they really begin to open up. It's a high point as growth in executive functions in meeting the increased demands of the Upper School come more and more online in that first year of high school," he said. "I love that some students have already been thinking very abstractly about the big picture. The 'light' is increasingly coming on for others, and we try to engage them with the type of thinking designed to induce, increase, and rev up those engines. It's really cool to see that growth. As teachers, we're helping shape people's brain structure. It can be intimidating when you think, 'I can't get this kid to write,'

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or 'I don't have this relationship established with that kid yet.' It's a lot of responsibility. But it's exciting when they can think thoughts or write essays at the end of ninth grade that they couldn't have at the beginning due to new neural connections. Habits that they initially struggled with come online." He added wryly, "If my mother only knew I'd be operating on brains, she wouldn't be so disappointed that I didn't become a cardiologist."

For seniors, it's a rewarding adventure. "As the seniors finish their Advanced Literary Topic essays, they do incredible work. I'm pleasantly surprised by the vast majority of these kids and how sustained they are in doing their best work. I've known some of them since ninth grade and have seen some of the throughlines in their personalities, the enormous growth that is taking place, what they're capable of doing, and the workload they hold. It's really rewarding," he said.

Witnessing the growth in students over a continuum feeds Rappleye beyond the classroom. As the Boys Cross Country head coach since the late 80s, he appreciates the linear development that doesn't always take place in the classroom arena. It's a program that meets student-athletes where they are. "We

built a program that can sustain the student who will be the state champion and the student who has never run a 5k. Everyone has a personal goal to attain by the end of the season. The most rewarding part is that the kids have built a community where everyone is supported by everyone else on the team. All we ask is that you come with your best each day. The kids who are the elite runners will be at the finish line to clap in the kids who are running just because they haven't completed a race yet," he said. "That's only possible because these students choose to sustain that type of culture year after year."



One constant of MICDS culture has been the quality of teachers with whom he's been able to work. "We attract really good people here, and I've grown tremendously over the years due to the colleagues I've gotten to interact with everyday. It's very

cool. I'm not sure people are fully aware of how much thought and discussion between teachers go into curricular design, assessments and getting to implement our own continuing professional education. All this time, I've had the good fortune to be part of a team of teachers and coaches whose thoughtfulness, intelligence and conscientiousness constantly challenge you to do your best work for students."

So what's changed in 35 years? Rappleye goes back to the science of the brain. He said, "I was inspired to understand students who could have incredible creative insights in one class but couldn't consolidate them in their memory in the next class, and we couldn't pick up the conversation where we left off. Some could have incredible insights and connections that others had yet to notice, and then they wouldn't remember. Their levels of insight were not always born out in grades because they were not able to recall and apply their own ideas."

"Much of what traditional assessment was built on was executive function traps. The outcomes are designed to reflect what a student has learned. But sometimes, we overload the circuits needed to access their knowledge, making it inaccessible. This made me much more aware of executive function and the effect of positive and negative stress on learning."

Rappleye places great importance on building relationships and attending to the emotional life and regulation of the student. He said, "A little stress is a performance inducer, and it's different for every student. As a coach, you can't always give the same inspirational speech to the whole team because someone over here is getting freaked out, another isn't following, and everyone else is somewhere in the middle."

In addition to the rapidly changing science of the brain, the growth of technology has been exponential. It has necessitated a continued learning experience for teachers to adapt, learn new tools, and deal with issues that arise, particularly with cell phones and their effect on children's brains at a formative time. There is

also the need to reinforce skill building further in reading, writing, and making meaning. "As digital natives, they are adept at using the technology to access the world, but what they're accessing isn't always driving critical thinking. Research shows that good writing depends on good thinking, and good thinking is shaped by good writing. Writing is the highest form of thinking because it engages more neural networks than any other task that we know of. You have to do so much nearly simultaneously. It's no wonder that it takes so long to learn it," he said.

Just when a student thinks they have writing figured out, the genre changes. Or, after the critical essay is nailed, here comes poetry and short stories. He said, "Students can discover their own intelligence and humor as a writer in one genre and gain a sense of themselves as writers that they may not have in another. Attention and training in good writing are critical to finding the right word or phrasing and thinking through how someone else will read or understand it. They have to ask themselves, 'Will this move the reader?' It takes time to build these capacities, and the tough part about teaching is having the time to get the writing practice in, giving them the feedback they need, and getting all the networks rehearsed often enough. Because their lives are so packed, they tend to do less work by skipping the steps they'd benefit from leaning into. Students also learn from modeling. They need to see teachers writing and struggling, too."

Rappleye felt the struggle over the last several years when embarking on an unintended professional development endeavor, for which he is grateful on several levels. "The School's support for professional development and the role of workshops like MICDS' Summit for Transformative Learning in St. Louis (STLinSTL) are pretty incredible commitments that support our teachers' continued growth," he said. Several years ago, one of the STLinSTL keynote speakers, Tracey Tokuhama-Espinosa, connected with Rappleye, and a short time later, he joined her regular online writing

group. "A few of us would go down a rabbit hole of research or end up mind wandering, and rather than be ashamed by what we didn't individually accomplish on whatever our personal writing project was that day, we began to talk about why we were doing what we did, and realized it was all part of the writing process. Over the next five years, we co-authored a book with Jovi Nazareno of MIT on how neuroscience can improve writing instruction," he said. "As a professional development adventure, it's been incredible and hard. The research was tough, and I had to jump back into the role of student, including learning APA citations." Rappleye adamantly feels the struggle was worth it to help other teachers learn the science behind reading, writing, and the brain.

While the journey of making meaning rests in the heart, the brain is along for the ride. Rappleye said, "Anyone can train their brain to regard the world with a little more magnanimity and compassion. How we affirm certain things and learn that we only see the world from a particular perspective is a rehearsal for students to stand outside their own experience and say, 'I'm only seeing a certain part of this.' To me, that's critically important."

"There is a metacognitive piece to English, and it's the only subject at MICDS that you have to take for all four years of high school. In large part, we are reading stories that are made up, and stories are a privileged way for our brains to create stories internally, which shifts the individual experience and opens us up to something larger. It takes time, and it's a rewarding challenge."

The book *Writing, Thinking and the Brain: How Neuroscience Can Improve Writing Instruction*, by Tracey Tokuhama-Espinosa, Jovi R. S. Nazareno, and Christopher Rappleye, will be published in November 2024 by the Teachers College Press.

