The Dean, The Coach, and The Classroom Revolution

How One Teacher Learned to Love the Bumps in the Road

"The flipped classroom almost was the end of me," admits **Chris Ludbrook, Upper School Dean, Pre-Calculus teacher, and Cycling Coach**. In a flipped classroom, students watch video lectures as homework, freeing up class time for questions and hands-on problem-solving. When Ludbrook introduced the innovative "Flipped Classroom" teaching model at MICDS, the transition was not without friction. For many parents, the shift away from traditional lectures and paper homework raised immediate, valid questions about the value of their investment. Ludbrook's reply that the video was the *new* homework and that the 30 extra minutes of class time were for one-on-one teaching eventually quelled their hesitation. It also began a 15-year journey that redefined his role, transformed how math is taught, and taught him that sometimes the best path forward is the one that forces everyone, including him, to take risks and course-correct along the way.

The Unexpected Path to Pre-Calc

Ludbrook's journey into teaching began as a self-described comedy of errors. Despite failing his first chemistry test, he managed to pass the class, and his love for science persisted. In the final stages of completing a biology degree at WashU, he was taking courses such as vertebrate physiology, microbiology, and the biology of fungi. He loved it, so he kept rolling without knowing where it would take him. Shortly after, he headed west to Mizzou for a semester to study Fisheries and Wildlife Management, and thought, "I found my calling."

His advisor wisely asked what he planned to do with the degree. Ludbrook shared, "He said, 'You're a little older than the rest of these kids here,' because I had done a couple of years of manual labor in between. I told him my story and that I wanted to be a fisheries and wildlife agent." The advisor pointed out that Ludbrook had a pretty serious girlfriend in St. Louis and that, with the wildlife program, it would be at least 15 years before he could move back. Ludbrook realized this plan wouldn't work out because his girlfriend already had a job. "So we got married, and it was a worthwhile choice," he said.

"When I returned to St. Louis, my friend and WashU college roommate—**Josh Smith, Director of Athletics**—was teaching math at MICDS, and had hopes of me joining him there someday. I had another year and a half to get my teaching certification. I did my student teaching, and then I got my first teaching job in the Jennings school district."

The experience of working at Jennings was "absolutely phenomenal. We did everything together. We had basketball leagues in the morning, worked on reopening the swimming pool, brought the union back to the school district, went on vacation together, and went to each other's weddings. It was so much fun, and the kids there are so awesome," he said.

"The number of relationships I formed at Jennings is incredible. I still see some of the students, my bonus kids went there, and I was just texting someone I coached in track back in the day," Ludbrook continued. But when he and his wife, Wendy, started having their own kids, he had to reevaluate how he was spending his time. He was coaching and teaching long hours. "I was a science teacher, a cross-country and track coach, and a part-time triathlete. I'd leave home at 5 a.m. and get home at 10 p.m. The schedule and the drive became overwhelming over time. My godfather had a Marine buddy who once said, 'It was a million-dollar experience, but I wouldn't pay ten cents to do it again.'" It was time for a change, so he reached out to his old friend, Josh Smith.

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Ludbrook's 1989 Kirkwood High School ID— "I keep it posted in my office because it's a reminder of what kids are like in high school. I was there at one point."

Quick Lap

What's your favorite season of the school year? Coming back in the fall is my favorite by far. The campus isn't meant to be empty in the summer; adults aren't what fills this place up. I love the first day when all the kids are excited, and you can feel the energy.

What's your favorite time of the school day? The morning. I like getting here early, seeing who's hanging out in Hearth, chatting the kids up, and messing with them a little bit.

What's your favorite lunch in the dining hall? It used to be meatloaf, but they don't make it anymore. So, I'm still gonna stick with meatloaf and hope it comes back.

What's your worst cycling accident? I was near the airport on the north side by the train tracks. I was going about 25 mph, it was wet, and my front wheel got stuck between the asphalt and the track. The next thing I remember was trying to get up off the ground. The next day, I was with Josh doing a simple math problem on the board. I did it three times and got three different answers. I said, 'Josh, what is wrong?' and he said, 'I think you have a concussion,' and sent me home.

Do you have a favorite hype song? Anything by the Beastie Boys, but right now it would be *A Little Respect* by Erasure. When I see **Bonnie Carpenter (JK-12 Arts Department Chair)**, I start singing it really quietly because it gets lodged in her head.

Do the students have a nickname for you? My wife and I now have a 14-month-old granddaughter, so the students and the Cyclocross team love calling me Gramps.

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When Ludbrook made the switch to MICDS, he also had to change subject matter. "There were no science openings at the time, but there was a math one. The challenge was that I was not teaching math. In science, there is a lot of experiential work I could guide. And math, at that time, was more like, 'I'm going to try to tell you some math stuff, and you're going to try to learn it.' I had a problem getting a consistent message from class to class, getting used to different kids, and getting used to different schools and systems."

The Classroom Revolution

Unexpected help arrived when Ludbrook was running errands. "I was walking around Target, and I ran into a guy I used to work with. He asked if I'd heard of the flipped classroom. I came back to school and asked Kyle Webb, a former teacher who was a student teacher here at the time. He said, 'Oh, I think I've heard of that. Let's try it.' We went down to the basement of Mathews, put up four whiteboards, and filled them with information to make our first flipped lesson. It took us two hours to make a five-minute video. It's a lot easier now that I've done it for 13 of my 15 years," he laughed. Webb, an educational consultant, has since written a book about it with Peter Liljedahl, called *Mathematics Tasks for the Thinking Classroom,* which many MICDS math teachers have on hand.

The flipped classroom approach is a good way to achieve a thinking classroom because it frees up classroom time for deeper cognitive engagement, although it can give students the impression they've already learned all there is to know. "Some students will watch a video on how to do something, and then you ask them to come struggle with a problem. They'll say, 'I watched a video. I know what to do.' To me, making them actually think and engage their brains is more valuable than watching a video and answering a few questions. This reflects how we continue to grow and learn about learning," said Ludbrook.

He added that although the flipped classroom was quite popular when first developed, many MICDS faculty now use the videos strategically. "We share videos on our Canvas page during AP testing time, holidays, or during state sports meets, when we know kids are out frequently," he said. "It's like off-season work. If you missed something or didn't understand it, here's another way to look at it."

Ludbrook appreciates the flexibility of this approach. "It's nuanced, coming in handy at specific times of the year or in specific scenarios. Obviously, during COVID, it was helpful to be able to send out videos. In that environment, some kids were sick, some didn't have a good daytime internet connection, or some were taking care of a sibling. Those videos were always waiting for them in

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The Thinking Classroom Benefits

Peer Instruction & Confidence: It's huge that different kids are successful in different areas. Having someone else every once in a while say, 'Wow, this is my strong suit, let me explain it,' is incredible.

Communication Skills: Being forced to explain something to someone else in written form is key to almost every job. If you can break down a concept with different words so others can understand it, what else can a boss ask for?

Active Note-Taking: I always hated 'pencil-whipping' notes. You're scrambling to keep up, not paying attention or thinking. Then you don't go back to your notes, so it's a waste of time. If we can have a conversation first, I'll stop talking for 10 minutes so they can write down everything they need.

Collaboration: The ability for students to talk with each other and work through problems is important. Discussing, debating, and arguing about the math is incredibly effective. It breaks down the barrier between peers, because someone who helps one week might need help with a different concept a month later.

Canvas, ready to be watched at a time that worked for them."

He's a deep believer in the tactile action of doing math. "There is evidence, and Peter Liljedahl is a proponent of it, that standing and writing on a non-permanent surface is critical to kids taking chances and taking risks and trying," he explained. "It's tough to do math for a full 90-minute period while sitting there. Standing obviously encourages more blood flow, and if you can put together these small things—like standing—that seem to move the needle just a little bit, you'll find you're actually moving the needle significantly. Look at the workplace: being able to work with folks, have conversations, and take feedback and criticism is huge. It pays off down the road and makes the conversation less threatening, conditioning them for hard conversations later on."

Ludbrook thrives in the thinking classroom model. "I teach two sections of pre-calc. I like to think we have fun. Once the concepts start clicking, they realize, 'I don't know why this felt hard.' We get students up on the vertical whiteboards to wrestle with problems. If they're truly thinking and wrestling with the material, they can teach themselves a lesson without even realizing it. We come back together and say, 'Didn't we just figure that out?' Exactly. So now you know how to do it."

The Anti-Administrator

At Jennings, Ludbrook wanted to stay as far away from administration as possible. "I had a Master's in educational technology at a time when we were using HTML to build

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webpages," he said. "I saw what the administrators dealt with, and they weren't in the classroom anymore. I thought there's no way I want to be locked in an office all day, churning through discipline and things like that."

Though he had no sights on becoming a dean when he first landed at MICDS, the lure of continuing to teach is what sealed the deal. "I was ready for something a little bit different and looking for the next challenge. It's really cool to be able to still be in the classroom, working face-to-face with the kids, and shaping the direction of the class and the School alongside the other deans and **Head of Upper School Scott Small**."

At MICDS, each class has one dean who stays with them over the four-year Upper School journey. When Ludbrook was named dean in 2015, he took over a class in its junior year. "That was tough, starting mid-track," he said. "They were shaped under someone else during those formative years, so we all had to figure out how to work together to keep that car going down the road."

The role of the high school dean in TV and movies is often either lauded or feared. Ludbrook falls in the lauded camp, though his own children feel otherwise. "I have five kids—two are grown bonus kids in their 40s," he said. His younger three children followed in their dad's footsteps to Kirkwood High School. Their involvement with local sports has overlapped with MICDS athletes, so they've heard stories about Ludbrook over the years. "My kids always say, 'I don't understand why those kids go hang out in their dean's office. Why would they want to do that?' Being an administrator with a smaller student body is one of the real perks of my job. Sometimes ninth-grade students start by coming to my office because they need help, or something's wrong, whether it's learning something new, family issues, or frustration with a friend," he said.

The school community at MICDS is anchored in striving towards helping students feel seen and known, and Ludbrook's office is evidence of that. "After a while, they come in more regularly. By the time they're sophomores and juniors, there's usually a handful hanging out in here doing work, because it's a comfortable, quiet space. That part is nice," Ludbrook said.

The Four-Year Trajectory from Chaos to College Readiness

Each of the four Upper School years comes with predictable developmental phases that all deans have mastered.

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"Freshman year is tough, and it mimics your own kids' growth," Ludbrook said. "We are dealing with typical immature 14-year-old behaviors, trying to shape that and reminding them of the basic responsibilities, like being on time. Deans and teachers also don't know the students well enough yet, so we can't easily lean on the relationship to course-correct. Usually, the girls have it figured out by the time they wade through freshman year. The vast majority of boys have it figured out by the start of junior year."

As students grow, their problems decrease in quantity but can increase in severity. "There is a point at which some of these problems affect their trajectory. I'm not saying they will be less successful. A situation can change a trajectory, and you can still be perfectly successful, happy, and have a wonderful life."

By the time they're seniors, Ludbrook relishes the relationships they've built. "I can pull someone aside and say, 'C'mon, why would you do that? That's not the person I know in you.' Often, that redirects behaviors and challenges, and it takes care of itself," he said.

When graduation arrives, he feels a sense of great pride. "They know what to do with the next step. I tell parents that the value-add here is that these young kids learn over four years how to be young adults: how to advocate for themselves, manage their time, and take care of themselves and others."

Ludbrook notes that they teach all students a few basic tenets: Where to go for help and how to ask for help from a teacher or advisor. These tools prove vital when new MICDS graduates head to college, and the familiar supports disappear. Ludbrook shared, "Our students come back and say, 'I didn't believe it, but college is so easy for me, compared to the people around me.' That's the hallmark of success coming out."

Loving the Bumps in the Road

If teaching and serving as dean were considered sports, adding coaching makes Ludbrook the quintessential triathlete in an educational system. Whether on a cyclocross course navigating creek beds, road cycling with a dozen students who need to come back in one piece, standing at a whiteboard debating pre-calc, or navigating an issue, the process is the same: taking risks, welcoming feedback, and learning to course-correct. While the dean's role—in which he sometimes sees students at their worst—is far more challenging, the ultimate goal is identical to the lessons learned on the bike: to guide the student from one point to the next, whole and successful. As Ludbrook is quoted in the 2014 MICDS yearbook, summing up his overall philosophy: "Everything you study is the same thing you learned earlier in life, but more complicated."