From Clickologists to Critical Thinkers: Reimagining Learning in an Introductory Business Statistics Course

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There was a time when the rustle of a college-ruled notebook and the cracked spine of a textbook were the sounds of academic promise. Students walked into class with highlighters, index tabs, and marginal notes. And while it's tempting to romanticize that era, one thing is clear: we knew where the learning happened. But somewhere between the rise of courseware and the age of artificial intelligence, we turned our students into "clickologists," trained not to think, but to click.

This reflection comes from the trenches of an undergraduate business statistics course, grounded in logic, computation, and analysis, albeit increasingly hijacked by interfaces and automation.

This story starts with good intentions. Around 2015, a major publisher's courseware arrived like the spice mélange in *Dune*, promising power, efficiency, and insight. We saw it as the next great evolution in teaching. Automated grading! Interactive learning! Seamless integration! What we didn't realize was that we were inviting a Bene Gesserit-level force into our classrooms, one that would slowly begin to alter the very soul of student learning.

Though we didn't call it AI at the time, these tools were its early emissaries. They adapted to student behavior, predicted outcomes, and delivered content with algorithmic precision. They learned from data, optimized pathways, and offered a seductive promise: that learning could be streamlined, even perfected. But like the spice, once introduced, they became essential, difficult to live without, and harder to question. They didn't just support instruction; they quietly reshaped it, redefining what it meant to teach and to learn.

First, it was just an eBook. Assignments were housed in our LMS. But then, like a full-blown Harkonnen invasion, the courseware consumed everything: reading, homework, exams, all locked behind a corporate curtain. Our LMS became little more than a pass-through, a portal to a world not entirely our own.

Then came COVID.

For a moment, it felt like a blessing. Students accessed everything from home. We tracked progress with colorful dashboards. We could breathe. But that breath was short. The platform, we soon realized, had conditioned our students like Atreides soldiers—trained to follow, not to question. Critical thinking gave way to mechanical response. Fetch, click, return. Repeat. The art of learning slipped through our fingers like Arrakis sand, coarse, relentless, unforgiving.

The true revelation didn't come until much later—Spring 2024, to be exact. The COVID fog began to lift, and with it came painful clarity. We weren't just losing our students to TikTok and AI bots. We handed over their learning experience to a machine. We conducted some quantitative analysis, but we won't bore you with the numbers. Let's just say the data supported the gut feeling: it was time for a radical shift.

Fall 2024. We did it. We cut the cord. We abandoned the courseware and kept only the eBook. Everything, quizzes, Excel homework, exams, moved back into the LMS. It was chaotic, clumsy, and more than a little frustrating. We discovered that many students had never used a textbook. Ever. This was the worksheet generation, products of Common Core and classrooms built for test prep, not intellectual exploration.

We trudged through Fall 2024 and limped through Spring 2025. But there were signs of life. Students began to ask questions, not about where to click or what went in cell B15, but what something meant. They struggled, yes. But they also learned.

We began modeling how to engage with the eBook during class, displaying it regularly on the Promethean Board. Key terms were highlighted. Problem-solving steps were walked through together. We weren't just teaching statistics. We were teaching how to use a textbook, something that should never have gone out of style. Students were encouraged to purchase a loose-leaf version of the text at a reduced cost. No one took the bait that first semester. But by Spring, a few students gave it a shot. One brought the physical text to almost every class session. She told her instructor, without hesitation, that the extra purchase was "worth every penny." She succeeded, and we believe her consistent, hands-on engagement made the difference.

Another student made an appointment just to learn how to use the highlighting feature in the eBook platform. It wasn't a dramatic breakthrough, but it mattered. By mid-semester, we saw more students scrolling with purpose, referencing their eBooks not because we told them to, but because they needed them to make sense of the material. Slowly, the textbook, physical or digital, was reclaiming its place as a learning tool, not an accessory.

For some students, the tactile experience of a physical book was clearly a turning point. For those with visual or kinesthetic learning styles, flipping pages, annotating margins, and physically interacting with the material grounded their understanding in a way no app could. They needed the

spatial memory of where to find a definition, the physical act of highlighting, and the motion of tabbing pages. These aren't luxuries; they're learning styles we overlooked when we digitized everything in the name of convenience.

And now, we've made the leap. Fall 2025 will bring physical textbooks back into the classroom, at least for our on-campus sections. We'll still offer the eBook to online learners, but the feel of a real book, the act of turning pages, highlighting, annotating, dog-earing, that's coming home. But we're not just handing out books and calling it a day; we're designing instruction around how to use a textbook. Imagine that: college students learning how to read a book. And yet, it's necessary.

Many students have never been taught to interact with a textbook as a learning tool, so we're planning direct instruction on the fundamentals. We'll teach them to use the table of contents to locate topics and organize study plans, and how to interpret chapter objectives to understand what they're expected to master. They'll learn to use the index when they're stuck or need to revisit a concept. We'll also show them how to identify key terms, how to break down chapter summaries, and review questions to prepare for assessments. Importantly, we'll teach the purpose behind annotating and highlighting, not just coloring the page but tracking comprehension. Finally, we'll encourage students to create bookmarks or use tabs for quicker reference during assignments and open-book exams. These foundational skills, often assumed but rarely taught, can dramatically improve students' ability to engage with course material.

We're also making structural changes to support this shift. A few times throughout the semester, we'll move instruction out of the computer lab and into another space, one without screens, where students will be required to bring their textbook. These days, the book is the technology. We'll center assignments around it: annotation exercises, glossary hunts, data concept mapping, chapter breakdowns. We want them to touch the content, not just tap it.

We're even floating the idea of a "textbook check," not in the punitive, backpack-inspection kind of way. Once we've taught them how to use the book effectively, we'll assign a chapter and ask them to create a study aid of their choosing: maybe a one-page summary, a flashcard deck, or a visual mind map. The goal isn't busy work like a courseware reading assignment, it's connection. It gives students the tools and time to develop their own habits of study, comprehension, and ownership over the material.

This isn't about nostalgia, it's about course correction. Somewhere along the way, we forgot to teach the basics of learning. We assumed students knew how to use a textbook, how to study, and how to follow a thread of thought across a chapter. But they don't. Now, we're working to bring those foundational habits back, one page at a time. We're reclaiming the idea that the textbook can still be a powerful companion in learning if we first teach students how to use it. Addressing AI in this course hasn't been about banning generators or catching cheaters. It's about re-centering the learning experience. AI is a tool. So is Excel. So is a highlighter. What we lost sight of was the need to teach how to use those tools, not just assume students would figure it out.

Looking back, it's been a winding path from automation to intention, and we're still navigating the terrain. What we've learned is this: teaching isn't just about delivering content; it's about creating space for students to engage. To think, not just click. To explore, not just complete. Sometimes, it's recognizing that what once felt like innovation was quietly eroding the habits of learning we value most. We've acknowledged AI's presence, its usefulness, its inevitability, but we're no longer putting it at the center. So no, we're not going back to 2015, but we're also not letting the bots do the teaching anymore. The "Butlerian Jihad" where people revolt against "thinking machines", as imagined by Frank Herbert in his novel, *Dune*, is fictional, but the warning still stands: the moment we hand over thinking to the machine, we lose the soul of learning.