DRAFT

The Coming AI Storm in Education

objective ed

Foreword

Our aim in this brief is to inject some common-sense perspective about AI and highlight promising efforts underway in U.S. education. Our central focus, however, is a rapidly developing convergence of forces – especially **Artificial Intelligence (AI)** – that could profoundly impact our schools, teachers, and students.

The views discussed here stem from us as a group of seasoned business leaders, engineers, AI professionals, programmers, and inventors – change agents who have worked in varied industries and founded several successful companies, including our current venture (ObjectiveEd) which builds AI-powered tools to help children (both sighted and blind) improve their reading. Collectively, our small team of eight has over 325 years of experience. While we eschew calling ourselves *experts*, we do know how to listen carefully, think critically, argue productively, identify problems, craft well-engineered solutions, and **make things happen**.

Why are we writing this? Because we see **storm clouds on the horizon** for U.S. education, especially public schools. These clouds gather from many directions: historically mediocre outcomes, decades of unresolved debates among the "education establishment," demographic shifts, talent shortfalls, funding crunches, technological upheavals, social changes – **and now the whirlwind of AI.** Some tout AI as the silver bullet for education's woes, while others warn it's an out-of-control experiment driven by profit. Whichever view you lean toward, AI is *adding* to the coming storm.

Based on our research, conversations with experts, and real-world direct experience implementing AI systems over the past 7–8 years, we believe neither public school systems nor charter networks (nor even most colleges) are strategically preparing for the gales now blowing. Yet if America is to retain its place on the global stage, we **must** leverage more brainpower. We cannot simply out-work overseas competitors; we must out-think them. Workforce effectiveness must rise dramatically across the board. In short, we have no choice but to make our educational processes and institutions more effective. Our children's futures are at stake.

Importantly, **this crisis is everyone's responsibility and no single group's fault.** Blaming "villains" is unproductive – in truth, it's a massive failure of communication between well-intentioned people with answers and those who need to benefit from them. We raise concerns and search for answers as outsiders who certainly don't have it all figured out. Our goal is to spur *you* – policymakers, school leaders, community stakeholders – to join in crafting solutions. We're issuing a call to action for productive internal and external conversations, not finger-pointing.

Most of us at ObjectiveEd (at least us two older folks) remember a time when public school taught us the “three R’s,” pushed us to think critically, exposed us to great ideas and debates, and ultimately shaped who we became. It fostered curiosity and was far less rigid and test-driven than today. Of course, that era is long past and our nostalgia may be rose-tinted. What matters now is that **education has been in a crisis** for some time– partly of our own making – and we must work together to address it. Our kids need us to find answers *and execute*. We hope you find our thoughts both informative and a spur to action.

Sincerely,
Ken Horner
Marty Schultz
ObjectiveEd

Contents

Executive Summary: The Coming AI Storm in Education

The U.S. education system stands at a historic crossroads, facing dual crises of stagnating student outcomes—particularly in reading—and the rapid, disruptive advance of artificial intelligence (AI). This document outlines a call to action for leaders, educators, and policymakers to confront these intertwined challenges with urgency, clarity, and collaboration.

Key Findings:

- Literacy in Crisis: Reading proficiency in the U.S. has remained largely flat for over 30 years. Half of all students are not reading at grade level; a third of 8th graders now score "below basic." Adult literacy levels remain alarmingly low.
- Systemic Pressures: COVID-19, technological distractions, teacher shortages, rising costs, and political fragmentation compound the struggles of public schools, leaving many underprepared for today's demands.
- AI as Catalyst and Risk: Artificial Intelligence presents both opportunity and disruption. From administrative efficiencies to personalized learning, AI could transform education—but it also risks misuse, inequity, community backlash, and unfulfilled expectations if not implemented thoughtfully.

AI in Education – Change Across Three Fronts

AI advances are outpacing anything ever seen in the technological space. We have never had this level of investment applied in such short time frames. The current AI constructs are useful and powerful in a large number of situations today: robotics, programming, drug development, routine business processes, and education, to name just a few. And the AI programs themselves are helping to develop the next generation of AI's. This is unprecedented as well. Schools will see uses in:

- Administrative Automation: AI tools can reduce operational burdens, streamline back-office tasks, and stretch strained budgets.
- Instructional Tools: AI-powered tutors, feedback systems, and content generators hold promise for differentiated learning—but require teacher training and ethical safeguards.
- Student Use (and Misuse): Students are already using AI for assignments, often without guidance. Without clear policies, AI use may exacerbate academic dishonesty and inequity.

We've already begun to see AI perceived as a threat. Without even going into the global political, bad actor issues raised by Henry Kissinger, Eric Schmidt, and Craig Mundie, in their 2025 book, *Genesis* [1], it is not hard to see how AI could replace people. It could make mass surveillance easier; it could create even better deepfakes; it could promote disinformation and make cyber warfare easier. As a result, school

districts will need to plan a careful, credible approach to bringing it into use as these issues become better identified, analyzed and debated.

Two Strategic Imperatives:

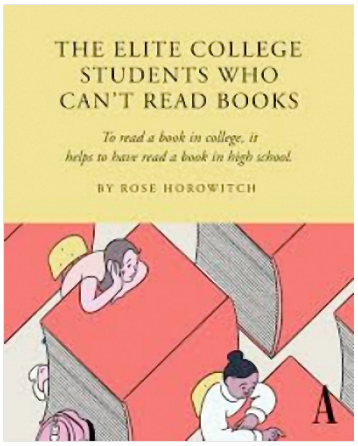
- Fix the Reading Crisis: Literacy is the foundation of all learning. Districts must prioritize early reading instruction based on cognitive science ("the science of reading"), teacher training, and proven state-level strategies. Succeeding at this will give school leaders the emotional and political capital to be more successful in dealing with AI-related issues.
- Prepare Proactively for AI: Schools must form cross-functional AI task forces, adopt clear use policies, evaluate tools critically, train staff, and engage parents and communities. Thoughtful planning—not fear or faddish adoption—is essential.

Some of our collaborators have argued that we are too constrained in narrowing our focus to just reading. They feel there are many other topics in education deserving focus and analysis— writing, math, computer science, history, civics, mental health, and others. We agree there are; but we believe that reading is the foundational skillset needed for a child to move on to any of these other focal areas. If we have high schools in the United States graduating zero kids who are proficient in reading, and we do, then thinking about how programming robots could benefit these children is a waste of time, in our opinion. Reading is the critical, big issue, and writing is likely number 2. The number 3 on the list is far enough back, that we do not need to worry about it here.

Call to Action: This paper advocates for bold but measured leadership. The challenges ahead are complex, but navigable with shared focus. Literacy reform and strategic AI integration are not opposing priorities—they must go hand in hand. These new tools can possibly be incredibly useful. With deliberate effort, school systems can emerge from this era more effective, equitable, and future-ready.

Situation Assessment: A Perfect Storm Brewing in Public Education

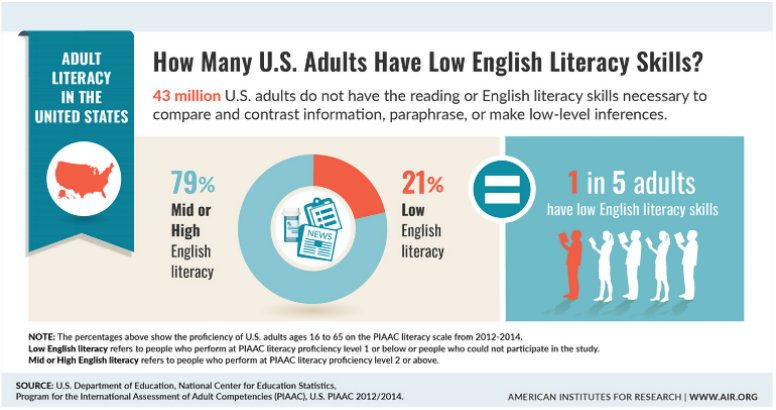
Stagnant Outcomes and a Literacy Crisis



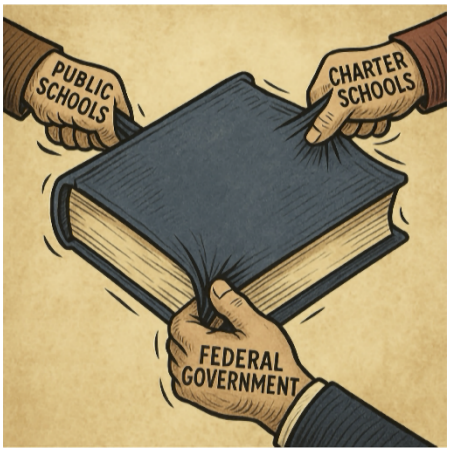
By many measures, our education system has seen **decades of flat or faltering performance**. Test scores aren't everything, but they do provide consistent trend data. Unfortunately, the trends are troubling. In our field of focus – reading – there has been scant progress in over 30 years. If schools can't get reading right, subjects like STEM, history, or civics will be out of reach for the 40% of students who struggle to read.

Yes, the top 25–30% of American students *appear* to do well. But even among high achievers, cracks show. For instance, recent reports indicate college students at elite universities lack the stamina to read three full books in a semester [2]. Their struggles are just less visible. For the *bottom half* of students, the issues are glaring: low reading proficiency, poor writing skills, limited knowledge of history, civics, and economics.

This is not a new problem. A 2019 National Center for Education Statistics (NCES) survey of U.S. adult literacy found that **about 54% of adults (106 million people) read below a 6th-grade level**, struggling with tasks like comparing information or understanding complex texts [3]. About 22% (43 million) had such low literacy that even basic daily reading tasks were difficult. These sobering figures confirm something fundamental isn't working – and hasn't worked for a long time. If our democracy and economy are to remain robust, we must *right the ship*. The world is only growing more complex (even before considering internet trolls, phishing scams, cryptocurrency, or AI-generated deepfakes). A literate, informed populace is essential.



Political Fragmentation and New Educational Alternatives



These concerns are hardly new. For over 40 years, successive federal administrations – both Republican and Democrat – have recognized the problems. They've appointed blue-ribbon commissions, sent First Ladies on awareness tours, spent billions on research, funded Title I programs and school lunches, and more. And yet the *core problems remain intractable*. This history has bred frustration and a scattershot of responses, often driven by politics and ideology rather than evidence. People care **deeply** about their children's education, and reading scores are an easy proxy for school success (or failure). When those scores disappoint – as they have – the reactions diverge and polarize:

- "It's the public schools' fault. Let's shift funding to charter schools or vouchers."
- "It's the fads from Washington. Stop those federal mandates – don't impose one-size-fits-all solutions from on high."
- "And besides, I don't trust the motives of the *experts* telling us what to do."

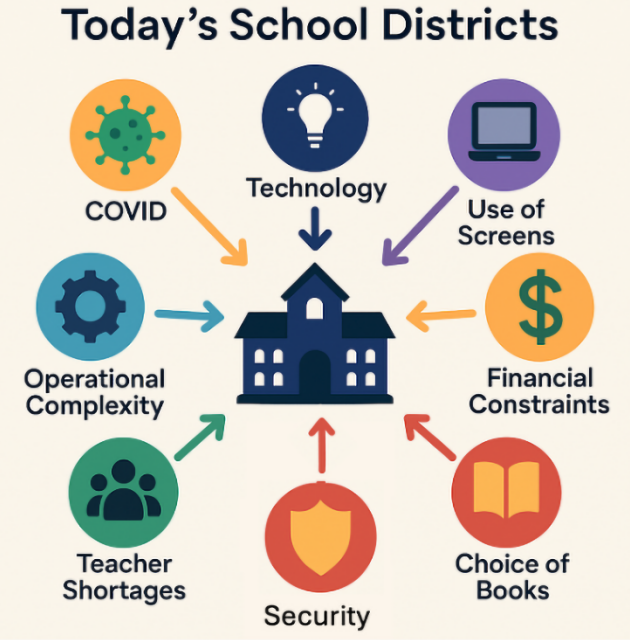
In truth, critics on all sides have had valid points. Many reforms didn't make sense to those on the ground. There was never a national consensus on root causes or fixes. Maybe the best solution was available all along but lacked a champion with a workable grassroots strategy and enough charisma.

At this stage, it's water under the bridge – but the **lessons learned** are important. We've seen similar dynamics in the business world for more than 200 years: whether it's the factory workers resisting a "newfangled system" developed without their input, or entire industries disrupted (think of how automobile manufacturing wiped out buggy-whip makers).

Bureaucracies – public or private – resist change. They are built to defend the status quo, and they're very good at it. Change *is* possible, but it's hard. In 1942, the economist Joseph Schumpeter famously called it "creative destruction." In essence: adapt or become irrelevant. Education is not immune to this axiom.

External Challenges: COVID-19, Social Media, and More

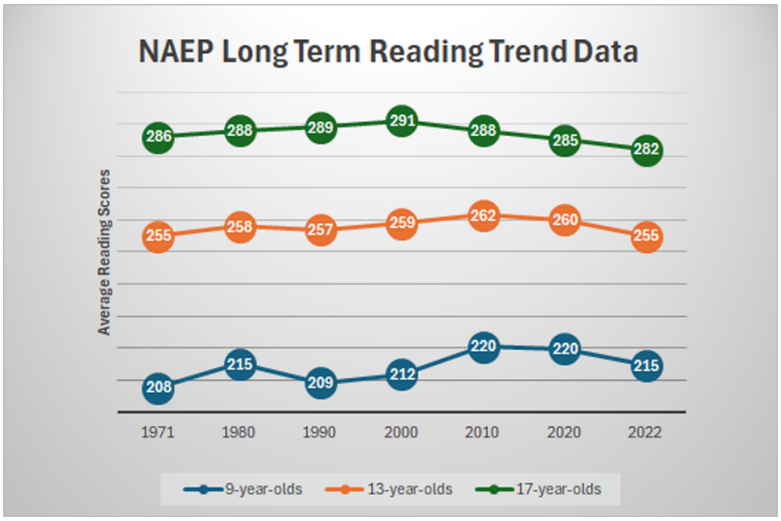
Today, the education landscape looks very different than in 1990. Costs have risen while budgets are tighter. Technology is ubiquitous in classrooms. And significantly, **alternatives to traditional public schools have expanded**: charter schools, voucher-supported private schools, *homeschooling* (which has grown markedly). These alternatives have increased competitive pressure on public schools to deliver results. Add to this a host of societal challenges and you have a complex, volatile mix.



The COVID-19 pandemic in 2020–2021 undoubtedly hurt learning, especially in literacy. But let's be clear: our literacy slide started *before* COVID arrived. Still, the pandemic's disruptions were severe, and our recovery has been sluggish compared to some other countries. For example:

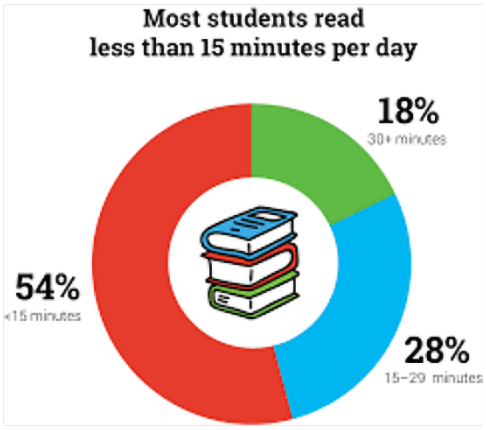
- **Germany** – Invested in intensive tutoring and targeted interventions right after reopening schools; early data shows these efforts helped narrow learning gaps.
- **Italy** – Despite long school closures, some regions extended school days and ran summer catch-up programs, accelerating recovery in key subjects like math and reading.
- **Spain** – Introduced widespread remedial measures and tutoring; early reports indicate these interventions mitigated learning loss where implemented effectively.
- **United Kingdom** – In parts of the UK, targeted tutoring and "catch-up" schemes led to noticeable improvements, though recovery has been uneven across regions.

Yes, these countries also faced school closures, yet many **bounced back faster** than we did. The bottom line: even aside from COVID, U.S. literacy outcomes have been low for 20+ years. National reading scores have been largely flat for decades – with modest gains in the early 2000s erased by declines in recent years (especially after 2019) [4].



What about the influence of **screens and smartphones**? It's tempting to blame kids' reading decline on their phones. Indeed, things have changed:

- In 1984, 35% of 13-year-olds reported reading for fun almost every day. 9% of 9-year-olds reported never or hardly ever reading for fun.
- In 2012, 27% of 13-year-olds reported reading for fun almost every day .11% of 9-year-olds reported never or hardly ever reading for fun.
- In the 2019-20 school year, 17% of 13-year-olds reported reading for fun almost every day. 16% of 9-year-olds reported never or hardly ever reading for fun [5].



In short, a majority of students now read less than 15 minutes a day for *any* reason, and many rarely read anything that isn't assigned.

However, research hasn't proven a direct causal link between smartphone use and literacy decline. It's plausible that more screen time leaves less time for reading, but clear data tying device usage to reading scores is lacking. What is clear is that **kids are reading far less on their own**, which has obvious consequences for vocabulary, knowledge acquisition, and cognitive development.

Meanwhile, **school systems face financial and operational strains**. School budgets have never been "fat," but over the past 30 years the middle-class tax base that buoyed schools in the '60s and '70s has eroded. Property tax revenues (the traditional local funding source) are under pressure; lottery funds in some states fill small gaps; federal funding is often uncertain. At the same time, operating costs have climbed – not just salaries and benefits, but new line items that barely existed in the 1980s (e.g. computer technology, internet connectivity, cybersecurity, campus security measures).

Running a district today is **hugely more complex** than a generation ago. Superintendents must deal with aging facilities, legal mandates, high-stakes testing regimes, vetting curriculum content, managing student devices, security protocols for active shooter threats, serving more diverse and English-learning student populations, transportation challenges, and competition from charter or private options. It's a massive managerial task.

Human resources are another pressure point. Demographic shifts mean waves of veteran teachers are retiring, and fewer young people are entering the profession. Teacher turnover is high, even among recent hires. Teaching has, frankly, become a very hard job – yet an essential one. Administrators are experimenting with incentives and supports to make teaching more appealing, but many factors (low pay relative to other fields, heavy workloads, test-driven stress, political pressures over curriculum and books, etc.) make retention difficult. By some estimates, **86% of public schools** have struggled to hire enough educators in recent years [6]. The teaching profession is at its lowest prestige and interest level in 50 years.[7] In short, we're asking more of teachers even as the pipeline shrinks – an obviously unsustainable situation.

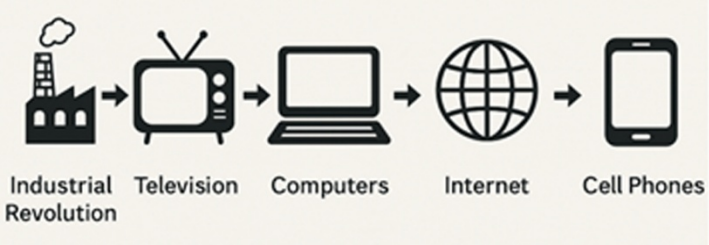
We could go on: **school safety** concerns (unthinkable in past eras) now force schools to invest in security infrastructure and drills. Contentious **curriculum debates** over books and topics have grown highly public and emotional, distracting from the fact that **content matters little if kids aren't reading at all**. **Local politics** can be a huge time sink for school leaders, and managing community polarization is beyond the scope of this paper – suffice to say, transparency and keeping children's interests first are key.

Amid these many challenges, technology has flooded into schools. There are wonderful new EdTech tools – low-cost laptops and tablets, smart boards, rich multimedia resources, STEM kits – that were unimaginable a generation ago. Yet it's often unclear whether these technologies are yielding proportional benefits. Vendors promise the moon, and decision-makers may lack the expertise (or data) to rigorously evaluate a tool's ROI. This is especially true for the newest tech frontier: **artificial intelligence**.

In many cases, districts adopt tech without clear metrics of success, or without fully understanding the risks and how to mitigate them. We urge any tech adoption to start with *clear definitions of the intended benefits and risks, and concrete measures to track outcomes*. Buying a fancy new tool means little if you can't later show it actually improved student learning or operational efficiency.

Enter Artificial Intelligence: A Different Order of Change

But what is it about Artificial Intelligence (AI)?



Some may think AI is just another new, shiny object in a long line of edtech hype cycles (we recall how television or personal computers were heralded as revolutionizing education). Indeed, past technologies like classroom TV had large impacts, but those changes were relatively gradual and easier to assimilate. **AI is very different.**

First, **AI is advancing at breakneck speed.** Innovations that once took decades now roll out in months. Many believe AI will directly replace much of what workers do today in various sectors: self-driving vehicles threatening trucking jobs, smart robots in warehouses and factories, AI-assisted software replacing routine tasks of accountants and lawyers, even AI systems in military roles. In education, we already see AI that can write student essays or conduct research at a level that once required graduate students and even postdocs.

Second, AI comes freighted with dystopian anxieties – the "Terminator scenario" where machines turn on us. That sci-fi outcome is unlikely, but public unease about AI is real. As Bill Gates remarked in early 2025, *"All the good things you hear about AI and most of the things to worry about are absolutely correct."* Kissinger, Schmidt, and Mundie point out in their 2024 book, *Genesis* [1], that we may need global agreements similar to nuclear proliferation treaties to control the development and use of these new technologies and keep us safe globally. In other words, AI holds immense promise **and** carries significant risks. We all hope the upsides outweigh the downsides – but hope is not a strategy.

In sum, **AI has the potential to be a game-changer** on a scale we haven't seen before, and on a rapid timeline that institutions are not accustomed to. We must prepare accordingly.

Early Responses to AI in Education (or Lack Thereof)

Some activity is underway to grapple with AI in schools, but it's patchy. At the federal level, the U.S. Department of Education had begun (before its recent reorganization) to explore **guidance for responsible AI use** in education. They released reports and draft policies around safe, equitable AI, looking at data privacy (e.g., compliance with FERPA and COPPA), algorithmic bias, and avoiding discriminatory outcomes. There was talk of developing federal standards for AI in education (accuracy, fairness, privacy), and some toolkits for education leaders were in the works. It's unclear as of spring 2025 whether these efforts will continue robustly – but at least the need was recognized at the federal level.

At the **state level**, approaches vary widely. Some states are proactive; others have done little. Common concerns among states include defining what "AI literacy" students should have, addressing plagiarism/cheating facilitated by AI, ensuring student data privacy, crafting ethical-use guidelines, and figuring out the costs of AI adoption. A few standout examples from **2024 research** on state policies include:

- **California** – Issued early comprehensive guidance emphasizing equity, student safety, and integrating AI skills into existing computer science standards. California frames it as "Learning *with* AI, Learning *about* AI," indicating a dual focus on using AI tools and understanding AI concepts.
- **Oregon** – Provided detailed guidance to districts, highlighting potential equity implications of AI. Oregon developed resources to help local educators draft AI policies and encouraged **responsible, ethical use** of AI in schools.
- **North Carolina** – Took practical steps like giving teachers **AI planning tools** (e.g. charts to guide student use of generative AI) and investing in professional development so educators learn how to incorporate AI in teaching.
- **Ohio** – Created a **comprehensive AI toolkit** for educators, parents, and students. Ohio's approach treats AI as key to the state's economic future; the toolkit provides concrete classroom scenarios to help teachers navigate AI implementation.

Most states, however, are still planning or have minimal activity. That means **most school districts are left to fend for themselves** on AI decisions. One district may ban ChatGPT; the next may encourage teachers to use it – there's little consistency. This patchwork will likely lead to inequities in how students benefit (or suffer) from AI. Common issues districts are already grappling with include:

- Providing **professional development** so that teachers know how AI works and how to use it effectively in instruction.
- **Selecting and implementing AI tools** wisely – what criteria do you use? how do you vet vendors' claims?
- Developing **policies for student use** of AI (e.g., rules for AI on assignments, plagiarism policies, honor codes updated for the AI era).
- Addressing the **digital divide** – ensuring all students have equal access to beneficial AI tools (so AI doesn't widen achievement gaps).
- Figuring out **costs and funding** – many AI tools start free or subsidized, but will there be sustainable funding if pilot grants run out?

The lack of clear, consistent guidance puts superintendents and principals in a tough spot. They know AI is important, but they don't have playbooks to follow. Meanwhile, as usual, the tech is evolving *faster than policy*.

How AI Will Transform K-12: Three Emerging Fronts

Projecting current AI trends into education, we foresee **three major fronts of AI-driven change** in the near future:

1. ***AI in Administration (Back-Office Automation):*** *Every* school district runs on business and operational processes – finance, HR, procurement, communications, facility management, etc. AI agents are coming that will streamline these processes. In the corporate world, such tools already exist. Imagine an AI auditor that reviews every expense report and purchase order in real time, flagging anomalies without human oversight. Or AI "assistants" that handle routine HR tasks, security monitoring, or parental communications. These technologies can make district operations more efficient and cost-effective. They're being rapidly adopted in other sectors, and K-12 schools will likely follow suit (if only to stretch tight budgets and cope with staffing shortages). Operational AI might not grab headlines, but it could quietly save schools time and money – allowing human staff to focus on higher-value work.

AI FOR BACK OFFICE AUTOMATION IN A SCHOOL

2. **AI in the Classroom (Teaching and Learning Tools):** This is the change many educators are already encountering. AI-powered software can **tutor** students, generate practice problems, give feedback on essays, differentiate lessons, and more. For example, *Khanmigo* – an AI tutoring assistant from Khan Academy – has gained substantial attention. By late 2024 it was piloted by over 55,000 students and teachers in more than 50 school districts [8]. In some cases, philanthropic donors (e.g., tech foundations) helped cover the costs for districts to try AI tools like *Khanmigo*. But will that outside funding continue indefinitely?

AI IN THE CLASSROOM (TEACHING AND LEARNING TOOLS)

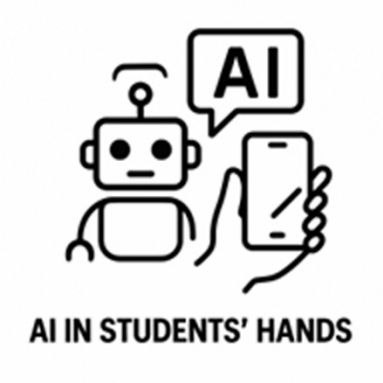
We've also seen our own AI reading tool (*BuddyBooks*™) adopted in classrooms. The feedback about reading progress with it is excellent. Kids like it; teachers feel it supports them.

But teachers and parents often have **mixed feelings** about these technologies. There's excitement about potential benefits but also fear and uncertainty – partly because no one has provided a clear, reassuring vision for how AI will **empower (not replace) teachers**. Teachers wonder: if an AI can run a small-group lesson or grade homework, what does that mean for my role? We must address these fears head-on.

As noted above, there are many other important considerations as well: student data protection and privacy (FERPA/COPPA compliance), vendor transparency, bias driven by flawed or skewed training data, and so forth.

Any AI classroom tool should be positioned as **amplifying teacher effectiveness**, not diminishing teacher value. It's worth noting that even "smaller" AI tools are emerging beyond high-profile examples like *Khanmigo*. They might automate tasks like lesson planning, generate simulations for science class, or help create individualized learning plans. Over time, AI could transform instructional formats – enabling more one-on-one tutoring, adaptive practice, or project-based learning tailored by AI. These are exciting possibilities, but they require thoughtful implementation with teacher buy-in.

3. **AI in Students' Hands (Learner Uses and Misuses):** This front has already burst onto the scene, sometimes chaotically. We've seen an explosion of reports – in mainstream press, education journals, even government inquiries – about students using AI chatbots to **cheat or cut corners**. But this isn't new. Students have been cheating for 100's of years. What's changed is the tool not the tendency.



Whether it's using ChatGPT to write an essay, having an AI solve math problems, or even generate a science lab report, many students have discovered the power of generative AI.

A recent *Wall Street Journal* article revealed that *nearly 40% of middle and high school students* have used AI tools for school assignments without their teachers' knowledge or permission [9]. Equally troubling, close to 50% of college students admitted the same.

These symptoms may not be the core issue. Rather, it may be the disengagement of the students who aren't as interested or curious as they once were. Why have to learn something when you can just Google it or watch a TikTok or YouTube video? Can we answer this question in 25 words and convince a 10 year old? Or even harder, a 17 year old? It's a tough one.

It's reminiscent of the early days of social media in schools – adults are always a step behind what kids are actually doing. Right now, an "arms race" is underway: AI writing tools versus AI-detection tools that attempt to spot machine-generated text. Frankly, the detection side is struggling, as new AI models get better at mimicking human writing and even inserting fake citations to appear authentic. We lack sufficient research on how all this AI use affects learning. We will have to adapt as we go along.

Are students who rely on AI to do their work actually learning less (as one might suspect)? Or could AI, if used openly, serve as a learning aid? Could it help more

students be more engaged not less? How could we model appropriate and effective use?

These and other questions haven't been answered yet. In the meantime, schools need policies and student training around AI. We should treat it somewhat like we treat calculators or the internet – a powerful tool that can be used ethically or unethically. Some districts have started updating academic honesty policies and teaching students about proper vs. improper AI use. But many teachers feel unprepared to detect or handle AI-enabled cheating.

Beyond cheating, there's also a *positive* vision often touted: AI enabling truly **personalized learning** for each student. In theory, an AI tutor can adapt perfectly to each child's pace and style, delivering individualized instruction that even the best human teacher managing 25 students in a classroom would struggle to provide. This vision has been a staple of education futurism for decades (long before AI, people talked about self-paced software, "teaching machines," etc.).

We caution against getting swept up in this utopian view **without solid evidence**. Some futurist novels portray AI as the savior of schooling; others see it as the harbinger of societal collapse. Reality will be somewhere in between. We must be **clear-eyed and critical** – not cynically dismissive of AI, but also not naively optimistic.

We can't repeat mistakes from the 1950s–60s, when businesses first encountered main-frame computers: too often, the "tech experts" were given free rein while leadership ceded control. That led to decades of suboptimal, over budget tech implementations until balance was restored. Let's not wait for a cycle of failures to force us into wise adoption. **Informed leadership** is key – school boards and superintendents should stay in the driver's seat, guided by educational goals, with the "tech" serving those goals (not dictating them).

Crucially, AI in education is not just a "tech issue" – it's a challenge of **leadership, policy, training, funding, ethics, and public trust**. The technology itself, astonishing as it is, may be the *easy* part. The bigger hurdles will be: making smart decisions about where to use AI, ensuring it's equitable and fair, securing data privacy, retraining teachers, updating curriculum and assessment, and bringing parents and communities on board with these changes.

From our experience rolling out our focused AI reading tool, we know students can benefit greatly – *if* the implementation is done thoughtfully and backed by evidence. We have been and are careful to gather efficacy data and share it transparently with districts. We recommend a similarly rigorous approach when evaluating the flood of larger AI models and vendor pitches coming your way.

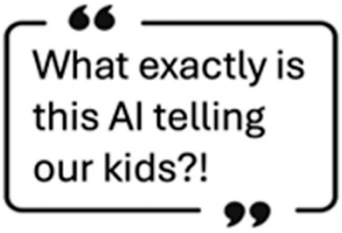
A Potential Policy Nightmare (A Cautionary Tale)

Let's imagine a scenario – not far-fetched – to illustrate the stakes.

You're a school district superintendent presenting at a monthly board meeting in a medium-sized district. On the agenda: an update on the new AI program you introduced to improve math and reading results.

Partway through your presentation, a concerned parent raises her hand. She heard that in another district, an AI tutor told a student something about religion not being scientific, or conversely that evolution can't be trusted – **basically, the AI waded into a values-laden topic and upset people**.

Suddenly, what was meant to be an upbeat report on rising test scores turns into an emotion-laden debate about *"What exactly is this AI telling our kids?!"* In the charged atmosphere, it's impossible to prove a negative (you can't easily demonstrate that your AI *would never* say something problematic). The school board, feeling the political heat, decides to **pause all AI use** in the district.



Now the media picks it up. Politically ambitious board members start questioning your decision-making. A review committee forms. The **millions of dollars** and months of effort spent rolling out the AI system are under the microscope. Meanwhile, you're facing the ongoing realities of scarce funding for public schools, and now this controversy is consuming your attention. It's a mess – and it's not implausible.

In fact, in 2024 a real incident along these lines occurred: **Google** found itself entangled in lawsuits after an AI chatbot app **interacted inappropriately with minors**, causing public outcry [10]. Google reportedly poured $2.7 billion into the startup behind the chatbot (Character.AI) and had to scramble to address the fallout. The basic idea of that chatbot was imaginative – let students have conversations with AI personas of historical figures (imagine *asking Abraham Lincoln* how he wrote the Gettysburg Address or *debating Napoleon* on his ill-fated 1812 march into Russia). But things went off track with disturbing and harmful content reaching kids. The result: lawsuits and a major tech company in damage-control mode.

Ask yourself: Has your district leadership **anticipated scenarios like this?** Do you have a **contingency plan** if an AI tool in your schools says or produces something that inflames community concerns? Who vets the content and how quickly can you

respond? If the answer is “we haven’t really discussed it,” now is the time. These are not merely hypothetical risks – they are already happening.

Summary: Why We Must Act Now

As we mentioned above, large institutions, public or private, – school systems included – are **not built for rapid change**. Yet we’re entering a period where rapid change will be forced upon them. When it comes to AI in particular, we have a chance (a *brief* one) to anticipate and shape the shifts, rather than just reacting after the fact. This is about *proactive leadership*.

Consider also that **economic pressures** are squeezing all types of schools. Public schools and charter networks alike are facing tight budgets. Despite enormous investments over the years, student outcomes remain disappointing in many places. From K–12 through higher education, the entire continuum is at a critical juncture. And frankly, no educator or parent we’ve spoken to is content with the status quo.

Let’s recap a few key points:

- **Academic outcomes have stagnated.** We have not moved the needle much on student achievement in decades – especially in foundational skills like reading. In some cases, we’ve lost ground. For example, one-third of America’s 8th graders now score *below basic* in reading on NAEP (an all-time high) and 40% of 4th graders are below basic [4]. Disadvantaged students, in particular, are not getting what they need. This is untenable if we want a strong society and economy.

- **Public trust and consensus have eroded.** Society has changed since the turn of the millennium: social media amplifies every controversy; viewpoints are more polarized; trust in institutions (including schools) has diminished. People are quicker to mobilize around perceived failures or ideological differences. This makes effective change management in schools even harder – yet all the more necessary.

- **The educational model faces competition.** The growth of charters, vouchers, homeschooling, and private offerings means parents have more choices. They will exercise them if public schools don’t meet expectations. We risk a vicious cycle where those with means flee the system, leaving fewer resources and tougher challenges for the students who remain. Public schools *must* demonstrate they can innovate and improve for *all* students, or they’ll lose public support.

- **Technological change will accelerate.** The pace at which AI has evolved is staggering – what went from research lab curiosity to mainstream tool in just the past 3–5 years is instructive. Billions of dollars are pouring into AI development, and education will not be insulated from its effects. The rate of change in the next

decade will likely be **breathtaking**. Schools need to increase their agility and foresight *dramatically* to keep up.

- **Key challenges for schools in the AI era** will include lack of clear guidance, valid concerns about data privacy and security, potential bias in AI systems, the need for extensive teacher training, ensuring equitable access to AI (so it's not just wealthier districts benefiting), and cost barriers. Also, gaining *economies of scale* – individual districts acting alone may struggle to negotiate good deals or customize AI for their needs, suggesting a role for state consortia or cooperatives in procurement (much as some states purchase textbooks or software licenses in bulk).

In short, continuing a "random walk" forward – hoping things somehow improve without deliberate strategy – is not a viable approach. We risk the future of the next generation if we don't proactively steer toward better outcomes.

What Can Be Done? (Strategies for Navigating the Storm)

We recognize every school district and state is unique. There is no one-size-fits-all solution. A small rural district faces different constraints than a large urban one. However, *all* systems, regardless of size or context, will need solid planning and inclusive decision-making to integrate AI in ways that serve students. And all will need strong stakeholder support – from parents, teachers, school boards, community partners, and government – to make tough changes successful.

To build that support and chart a positive path forward, we believe two broad priorities stand out:

1. **Deepen Your Understanding & Get Prepared for AI.** Education leaders must educate themselves and their teams about what AI is, what it can and can't do, and how it might impact both operations and classrooms. This knowledge will form the basis of strategic plans. Equally important, leaders must engage *all stakeholder groups* (teachers, parents, students, the broader community) in conversations about AI – demystifying it, addressing fears, and collaboratively shaping guidelines for its use. Preparation also means having policies ready (on academic integrity, data use, etc.) *before* crises hit.

2. **Fix the Reading and Literacy Problem.** We argue that if you can make significant progress on improving student literacy, you will not only change lives directly – you'll also earn the credibility ("political capital") and community trust needed to tackle everything else (including AI integration). Literacy is foundational. A child who can't read well by 3rd or 4th grade is on a very tough road; conversely, a district that turns its reading scores around will find much goodwill and momentum for further innovations. In short, *focus on getting the fundamentals right, starting with reading and writing*. That success will power the rest of your initiatives.

Let's break down some **concrete steps** and recommendations:

Laser-Focus on Early Literacy (and Numeracy) – The Foundation

Make sure your district's strategic plan for the next few years has, at its core, **improving outcomes for children in basic skills**. We suggest starting with reading (and its twin, writing). **Reverse the decline in reading achievement.** Set explicit goals such as:

> "Within 3 years, we will increase the percentage of students reading on grade level by X%; within 5 years, by Y%."

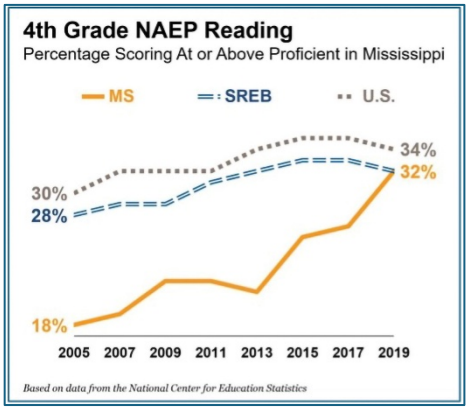
Prioritize this above myriad other initiatives. As one superintendent told us, they often suffer from "initiative overload" in education – too many simultaneous reforms –

imposed top-down, which overwhelms teachers and district resources. Instead, pick this one big goal and rally everyone around it.

Use the shared aspiration that virtually every educator has – *to see kids improve* – as common ground to drive a campaign of improvement from the ground up. This means involving teachers as co-leaders in the literacy effort, not just recipients of directives.

Importantly, plug into what's already happening at the **state level** on literacy. In the past few years there's been a renaissance of evidence-based reading initiatives in many states. In 2024, we found **around 40 states have some form of literacy initiative** underway. Knowing your own state's policies and resources is critical. (We provide a detailed example of Louisiana's approach in the Appendix for deeper context.)

Here are just a few examples of state actions:



- **Mississippi's "Literacy Miracle":** Mississippi is often cited for dramatic improvements in reading over the past decade. By emphasizing the "science of reading" – systematic phonics, phonemic awareness, etc. – and enacting a 2013 law that provided supports and required struggling readers in 3rd grade to receive intervention (and sometimes be retained), Mississippi's 4th graders climbed from near the bottom nationally to around the national average by 2019 [11]. The state's 4th grade reading NAEP scores went from 49th rank in 2013 to 29th by 2022, a remarkable jump. This shows that **evidence-based reforms and strong implementation can yield rapid gains**.

- **Alaska's Early Literacy Push:** In June 2022, Alaska passed the **Alaska Reads Act**, targeting K–3 literacy. This law introduced universal screening for reading deficiencies, new intervention programs, and support for low-performing schools. In its first year of implementation (2023–24), Alaska already saw promising gains: at the start of the year, only 41% of K–3 students were meeting literacy benchmarks; by year's end, 57% were at benchmark. Kindergarteners jumped from 24% proficient to 60% proficient in that one year. [12] This kind of improvement – if sustained – will be life-changing for Alaska's kids. The key was a **comprehensive approach**: evidence-based curriculum (science of reading), teacher training, ongoing progress monitoring, and accountability.

- **Texas Reading Academies:** In 2019, Texas lawmakers passed legislation (House Bill 3) that, among many education measures, **mandated all K–3 teachers and principals to attend "Reading Academies"** focused on evidence-based literacy instruction (with a heavy emphasis on phonics and the science of reading). The idea is to ensure every early-grade educator knows how to teach reading effectively. Districts could choose how to deliver this training

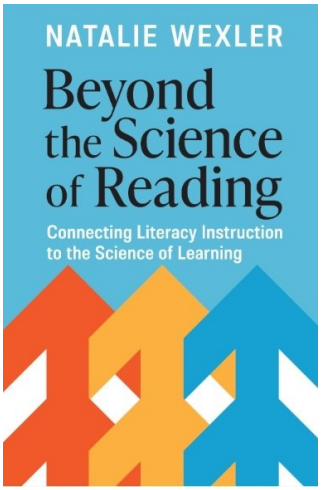
(state-run or in-house), but the requirement was statewide [13]. This is a massive undertaking (Texas has over 300,000 teachers), but it shows a commitment to change reading instruction at scale. As of 2023, thousands of Texas teachers have gone through the academies. Early indications are that teachers value the training, though implementation quality varies by district. The *lesson*: large systems can take on big literacy reforms – but they must ensure the fidelity and quality of training.

- **Maryland's New 3rd-Grade Policy:** In 2024, the Maryland State Board of Education approved a controversial but bold literacy policy: starting in a few years, 3rd graders who do not meet reading standards may be retained (not promoted to 4th grade) unless they receive supplemental reading support and demonstrate progress [14]. Essentially, Maryland is putting serious teeth into the "everyone reads by 3rd grade" goal, while also beefing up interventions (the policy includes increased tutoring and parent engagement).

  This echoes policies in Florida and Mississippi. Such moves are contentious (retention is debated in academic research), but they signal urgency – no more letting kids slip through the cracks. Whether or not your state has a similar policy, it underlines the importance of getting kids on track by the end of 3rd grade. As a district leader, you should anticipate these kinds of policies and be proactive: don't wait for the state to force your hand. Identify K–3 students who are behind, deploy extra help (reading specialists, summer programs, etc.), and bring parents into the process early.

Each community will need to craft its own literacy action plan, but these examples show what's possible with focus and political will. The core components we advise are:

- **Get very familiar with the Science of Reading.** Make sure your team (especially curriculum directors, principals, reading coaches, teachers) are well-versed in what cognitive science tells us about how children learn to read. Key insight: reading comprehension = *decoding* (word recognition) **times** *language proficiency*. Both phonics *and* building background knowledge/vocabulary are essential. If you haven't already, read Natalie Wexler's books *"The Knowledge Gap"* (2019) and *"Beyond the Science of Reading"* (2023) – they clearly explain how we arrived at this point and practical steps to improve. Also study what states like Louisiana (see Appendix) have done in revamping curriculum and teacher training. Consider bringing in experts or sending teachers to reputable workshops.



- **Work from the bottom up, not just top down.** Frontline teachers are the ones who ultimately make or break a literacy initiative. Engage them in designing

solutions. Ask teachers what support they need – smaller class groupings for reading? Different materials? More aides? Then try to provide it. Many teachers suffer from "initiative fatigue" – a new program every year. Instead, build a sustained, grassroots effort where teachers feel ownership.

One idea we have seen work well: create a cadre of **"master teachers"** – experienced, highly effective educators who are given release time or stipends to coach their peers in the science of reading. These mentors can visit classrooms, model lessons, help tweak instruction, and be on-call support. Districts like *Chicago* and *New York City* have used similar models (sometimes called literacy coaches).

This peer support can dramatically improve implementation. And ensure teachers have a safe channel to ask for help without judgment – perhaps a dedicated "literacy help desk" or drop-in clinic (think of it like an educational fire department – ready to respond where needed). Recognize and celebrate progress: highlight schools or teachers where reading scores improve, have teachers share success stories at board meetings. Make it a *movement*, not a mandate.

- **Champion and share best practices.** Within your district and beyond, actively seek out what's working and broadcast it. If one elementary school figures out a great system for, say, incorporating 20 minutes of high-impact phonics practice and 20 minutes of rich read-aloud daily, let every school know about it.

  Sometimes great ideas are isolated in one classroom or one school. Create regular forums (virtual or in-person) for teachers to exchange strategies. Perhaps start a "Reading Innovation Network" across your county or state, where educators can learn from each other.

  Also, keep an eye on research and what other districts nationwide are doing. (There are networks like the *Council of Great City Schools* or *ALEC's Literacy Initiative* that share case studies.) Being a champion means advocating at the state level too – push for policies or funding that will help all districts (e.g., better teacher prep in reading, grants for reading specialists, etc.).

- **Realign resources to support teachers and early interventions.** This might mean reallocating some budget or staff. For example, if you have instructional tech funds, maybe invest in **proven literacy software** that can complement classroom instruction (but vet it carefully for evidence).

  Or consider class size reductions in K–2 if feasible. Ensure every struggling reader gets the help they need – whether through small group instruction, tutoring, summer reading camps, or other means. If funds are tight, seek community partners or grants – many foundations are currently interested in literacy.

On the flip side, critically evaluate any spending or practices that *aren't* yielding results and be willing to discontinue them. It's hard to stop a program that a district has done for years, but if it's not helping kids read, why continue? Free up that time and money for what does work.

One encouraging thing we've learned: **motivation follows success, not just the other way around.** There's research in psychology (and plenty of real-world evidence) that achieving small wins builds momentum for bigger wins. In sports, a team on a winning streak gains confidence and often keeps winning.

Similarly, in schools: if you can engineer some quick "wins" – say, a measurable uptick in 2nd grade reading fluency in one semester – teachers and students alike get energized to do more. So, design your literacy plan to produce some early successes. Maybe target a pilot group or a specific grade for an intensive boost, track it, and publicize the improvement. That morale boost can catalyze broader change.

In summary, **make early literacy a top priority**, treat it as a shared mission, and build a culture of continuous improvement around it. If you do that, you will transform thousands of children's lives *and* earn community trust that your district can tackle big challenges.

(For more detailed guidance and ideas on reading, see the Appendix at the end of this document.)

Proactively Prepare for the AI Revolution – With Eyes Wide Open

Even as you focus on literacy (or math or other fundamentals), you can't afford to ignore the oncoming AI wave. But instead of reacting in panic or sticking our heads in the sand, let's **get ahead of it** in a thoughtful way. Here are strategies to consider:

- **Assemble a District AI Task Force ("A-Team").** Bring together your sharpest, most forward-thinking staff from across roles – teachers, principals, IT staff, curriculum specialists, librarians, even students – to form a working group on AI. Include different subjects and grade levels. Importantly, also include some *skeptics* or cautious voices (to avoid group thinking).

  This team should meet regularly (say, monthly) with a clear agenda: ***learn about AI developments, assess what others are doing, brainstorm small pilot projects, and develop local guidelines*.**

  Think of it as an internal "think tank." No one needs to be pulled out of their regular job full-time; you can do this with a few extra-duty hours or stipends and passionate volunteers. The key is you have a dedicated forum to grapple with AI strategically, rather than piecemeal.

  Charge them to produce, for example, a short report by year's end on "**Opportunities and Risks of AI for Our District**" – something that can inform your board and policy.

- **Connect with peers at the state and national level.** Don't do this in isolation. Many states are, as noted, starting AI advisory groups or pilot programs. Make sure your district is represented or at least tuned in. Join any working groups your state Department of Education offers on AI. If none exist, encourage your state officials to start one – or join multi-state initiatives.

  Also, tap into professional associations: AASA (the school superintendents association), ISTE (tech educators), NSBA (school boards) – many are beginning to publish AI guidance. By networking, you can learn faster and avoid reinventing the wheel. Perhaps partner with a local university or edtech incubator; they might involve your schools in research (for example, piloting an AI tool with rigorous evaluation).

- **Draft a roadmap with short-, medium-, and long-term AI goals.** Don't attempt a 10-year master plan set in stone (technology is too fluid for that). But it's wise to outline immediate steps (next 6–12 months), a 3-year vision, and a 5-year vision.

  Keep this as a **living document**, revisited frequently as things change.

Short-term might include:

- Develop AI use policy for students,
- Run a small pilot of an AI math tutor in one school,
- Provide an “AI 101” PD session to all staff,
- Audit any current software for built-in AI features.

Medium-term:

- Aim to implement an AI-assisted individualized learning system in certain grades,
- Establish data privacy protocols for AI vendors,
- Incorporate basic AI literacy into your digital citizenship curriculum.

Long-term (3–5+ years):

- Envision more transformative changes – maybe AI helping to redesign your high school schedule or AI-enabled project-based learning across the district.

The point is to start thinking and planning *now*, incrementally.

- **Review current uses of AI (you may have more than you think).** Task your team to inventory what AI or automation is already present. Some examples:
  - Are your school security cameras using AI object detection?
  - Is your HR system using an AI resume screener?
  - Do any instructional software (like reading apps or learning management systems) have AI-driven recommendation engines?

  Understanding what’s already in play is important for risk management and for building on what you have. For each existing use, evaluate:
  - Is it working as intended?
  - Any issues (bias, inaccuracies)?

  Consider conducting a **scan of global developments** – use AI itself to help with this! For instance, an AI tool could summarize the latest news on “AI in K-12 education” each month for your task force, so you stay up to date.

- **Create subcommittees on key AI issues.** Within your AI task force, you might assign smaller groups to dive deep into specific areas:
  - One group on **instructional AI tools** (evaluating classroom applications), one on **data/privacy** (ensuring compliance and ethical use),
  - One group on **operations** (how AI can improve back-office and save money), one on **professional development needs**, etc.

  These sub-teams can bring back findings and recommendations to the whole group and ultimately to district leadership.

- **Be ready to adapt** (“agility” as a core principle). Despite all the planning, things will not go exactly as envisioned. You might implement an AI tool that teachers end up disliking – be prepared to pivot or drop it. You might face a backlash on one front; respond and adjust rather than digging in defensively. Build in **flexible time and budget** to allow mid-course corrections.

  Perhaps reserve a small contingency fund for unexpected needs or opportunities (e.g., a new AI service becomes available that you want to test). Agility also means staying nimble with policies: you might pilot a lenient stance on AI-generated student work with proper citation, but if abuse skyrockets, you tighten the rules – or vice versa. Make it clear to your community that this is a learning process for everyone, and policies will evolve.

- **Invest in communication and community engagement.** As you navigate AI (and any big changes), **bring your stakeholders along transparently**. Develop communication channels to keep parents, the school board, and the public informed about what you’re doing and why.

  For example, if you launch an AI pilot, send a letter home explaining it in plain language: “**This spring, some of our 5th graders will be using a math tutoring software that has an AI component. Here’s what that means, here’s why we’re trying it, here’s how we’re safeguarding student data, and here’s how we’ll measure so see if it helps.**” Invite feedback.

  Host a series of community Q&A sessions on AI in education, maybe one every 3 months. When concerns inevitably arise (like the hypothetical scenario earlier), **address them head-on**. Acknowledge fears – some are legitimate – but also share what steps you’ve taken to mitigate risks. Never dismiss or gloss over public concerns; that erodes trust. Instead, engage and educate and exemplify the respect you’d like them to accord you.

  You as a leader have to be the **voice of reason and reassurance**, articulating a vision of how these efforts serve students’ best interests. Show that you have a plan, you’re listening, and you’re putting kids first.

In essence, you want your district to approach AI from a position of **informed proactivity** rather than reactive panic or blind adoption. Be neither the district that bans everything new out of fear, nor the district that jumps on every tech bandwagon without due diligence. Chart a middle course: *thoughtful experimentation, guided by educational values and evidence*.

In Closing

We stand at a **critical crossroads** in American education – marked simultaneously by unprecedented technological advances, persistent literacy challenges, and shifting societal expectations. The storms on the horizon are undeniable, but by recognizing the bad weather and preparing to navigate it, we can ensure our schools not only get through the storm but emerge stronger.

The path forward requires **collective effort** with a clear focus. By zeroing in on fundamental skills like reading, we address the root of so many other issues and prove that improvement is possible. By embracing AI and other innovations *with caution and clarity*, we can harness their benefits while avoiding pitfalls. By involving all stakeholders – teachers, parents, students, policymakers, industry partners – in open dialogue and planning, we build the broad support needed for bold moves.

There is no single silver bullet solution, and anyone who promises one is mistaken. Yet, we have the pieces of the puzzle: we know some strategies that work for literacy; we have emerging guidelines for AI; we see examples of communities coming together to demand better outcomes.

It's time to put those pieces together. With **transparency, foresight, and an unwavering commitment to children's success**, we can transform our public schools into dynamic, forward-thinking institutions that truly prepare the next generation for the world they will inherit.

The challenges are great – but so is our ability to meet them when we work together. Let's seize this moment to **lead** education into a brighter future, rather than being swept along by changes.

Our children are counting on us to act with urgency and wisdom. Let's not let them down.

Appendix: A Closer Look at the Reading Crisis and Solutions

(For those interested in more detail on reading and literacy issues and evidence-based strategies, we provide this appendix.)

First, however, let's set the stage and frame the root problem. Learning to read and write is hard. We just don't remember how hard it was for many of us. Given we, the authors, are engineers at our core, let us give you a little mental picture to clarify the issue. How much work does a kid's brain do to master the problem of reading. Is it like building a house; paving a mile of road; what? We'll start with our brains. As an engineering approximation (order of magnitude), our brain is about a billion times more powerful than today's best PC or Macbook. And it's a big parallel processor; it can do many things at once: breathe, eat, see, think. But its capabilities are not infinite.

A child learning to read rewires a not small portion of its brain as it goes through the reading learning process over about, say, 2 years (sometimes more). In doing so the brain rejiggers 10's of millions of neurons and 10's of billions of synapses. To give you a scale idea, it's comparable to a computer program with 100's of millions of lines of code or about as much "stuff" as it took to build the ChatGPT3 AI system with its 175 billion parameters. GPT 3.0 cost about $4 million to train according to OAI, but the data center that ran it cost about $100 million. Kids do it for nothing as long as they've got a good teacher or parent to help and a lot of reading practice.

And people think it's so easy, and for many kids it is. They were born with a muscled-up roster of very good neuron "electricians". But for other kids it's hard and can be very hard. No kidding, look at the size of the task at hand. No wonder a lot of kids need help.

The Literacy Crisis – By the Numbers: Despite decades of reform, the data on reading achievement paint a troubling picture for the average kid:

- **NAEP Scores:** National Assessment of Educational Progress reading scores for 9- and 13-year-olds in 2022 fell back to levels not seen since the 1980s. We've essentially lost 30+ years of progress.
- **Proficiency Rates:** Roughly *half* of U.S. students are not reading on grade level. About **1 in 2 kids** in our schools cannot read proficiently at their grade. This includes many who still struggle with basic decoding and comprehension even in middle and high school.
- **High School Graduates:** Shockingly, we still graduate a significant number of students who are **functionally illiterate** – unable to read basic texts needed for jobs or daily life.
- **College Readiness:** College professors report that many incoming students cannot handle the reading load that higher education demands. These young adults often have to take remedial courses (or simply avoid reading-intensive majors), putting them at a disadvantage.

Why does reading matter so much? Aside from the obvious (you need it for every other subject), reading develops the mind in ways other media cannot.

Audiobooks, videos, and interactive media have their place – and can be great for accessibility and engagement – but they don't provide the same cognitive workout as reading print.

For instance, when you read a book, you can pause, reread a tricky paragraph, visualize concepts deeply, markup notes, etc. – activities that build mental muscles. A video just washes over you; if you miss something, you often don't realize it. As one example, reading a nonfiction book for an hour imparts far more new vocabulary and knowledge on average than watching an hour-long documentary on the same topic.

Reading forces active meaning-making in a way listening passively does not. In short, **if kids read significantly less, they learn less** (all else being equal). And current generation of kids *are* reading much less for pleasure than prior generations, as we showed earlier.

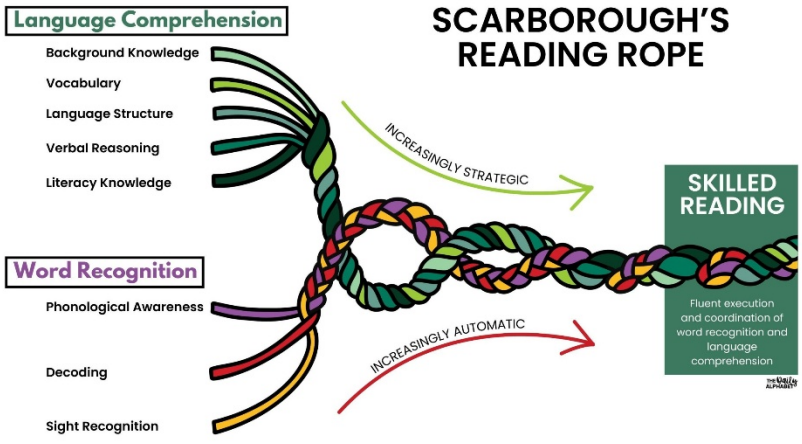
The so-called **"reading wars"** (debates between phonics and whole-language approaches, etc.) did little to help classroom teachers. In hindsight, both "sides" had partial truths. We now know effective reading instruction is not an either/or. It requires *both* strong decoding skills *and* knowledge-building.

So, what should we do? From our perspective as engineers and technologists turned education advocates:

- **Embrace the Science of Reading**: Ensure your teachers and leaders understand the established research on how kids learn to read. This includes the Simple View of Reading (decoding *x* language comprehension = reading comprehension) and the Scarborough's Reading Rope model (which breaks literacy into component strands like phonemic awareness, phonics, fluency, vocabulary, background knowledge, etc.).

  Teacher prep programs historically didn't teach this well – many current teachers have never been explicitly trained in it. That's why ongoing professional development is key.

  We already recommended Natalie Wexler's books as excellent resources. We also recommend, for those interested in the cognitive



science, *"Reading in the Brain"* by Stanislas Dehaene (2009) – it's a bit dense, but it fascinatingly details how the brain rewires for literacy. (He also has accessible YouTube lectures for a quicker overview.)

- **Learn from successful initiatives (e.g., Louisiana):** Louisiana provides a compelling case study. Starting around 2020, Louisiana launched a bold statewide literacy initiative focused on *explicit, systematic* reading instruction grounded in science.
    - They revamped curriculum to emphasize phonemic awareness, phonics, fluency, vocabulary, and knowledge-building.
    - They implemented a **universal K–3 screening**, required individual reading improvement plans for struggling students, and even banned certain discredited strategies (like "three-cueing" which encourages kids to guess words).
    - They invested heavily in teacher training – thousands of K–3 teachers and principals underwent mandatory professional learning in the science of reading, and literacy coaches were placed in schools to provide ongoing support.
    - They aligned teacher prep programs with these approaches.
    - Louisiana addressed related factors: they improved early childhood programs, implemented routine dyslexia screening, engaged families with resources, and expanded high-dosage tutoring for kids who needed extra help.

  The results?

  In the 2022 NAEP, Louisiana was **the only state in the nation to improve 4th-grade reading** – jumping from 50th to 42nd in state rankings for 4th-grade reading between 2019 and 2022 [15] .

  By 2024, Louisiana's 4th graders had further surged to 16th in the nation, and it was the only state to exceed its pre-pandemic reading scores (actually scoring 6 points higher than in 2019, whereas the national average was ~5 points lower).

  This kind of progress, in a state that historically ranked near the bottom, is proof that the right strategies can yield major gains. Louisiana's experience underscores: **when educators are empowered with proper training, tools, and support, students achieve**.

- **Support for Teachers = Better Outcomes:** A recurring theme is that teachers need more on-the-ground support to change instructional practices.

  One proven method is to establish a **"master teacher" or instructional coach role** (as we touched on). This is a person (or a few per school) who is freed from some teaching duties to mentor others. They should be people with great

interpersonal skills and credibility, who can go into classrooms and help implement new methods.

For example, research and practice show that **small-group lessons** (e.g., teacher works with 5 students on a targeted skill while others do independent or center work) are more effective for certain reading skills than whole-class lectures.

A coach can help a teacher set up those groups, plan activities, and troubleshoot behavior management during small group time. Similarly, coaches can help teachers build in **independent reading practice** time effectively (ensuring kids have appropriate books and are held accountable for that time).

The bottom line: ***investing in building teacher capacity yields big dividends***.

- **Phonics AND Knowledge:** Kids absolutely need systematic phonics to learn how to decode words – no question. English is too complex (think of spelling patterns in words like *enough, pneumonia, choir, knight*) to just pick up through osmosis. We often give kids tons of practice on simple sight words (which they mostly *could* learn via exposure) but not enough on more complex, less frequent words that require decoding strategies.

  We need to explicitly teach them how to break down multisyllabic words, recognize roots/prefixes/suffixes, etc., as they progress. At the same time, **building oral language and background knowledge** from early on is crucial.

  A child can decode a sentence fluently and still not understand it if they lack vocabulary or context. For instance, the word “run” has multiple meanings (you run in a race, your nose can run, a car engine runs, a play on Broadway has a run). Children need rich exposure to language to grasp these nuances.

  Reading aloud, discussions, and varied content (stories, science texts, history, poetry) all build the mental framework that gives meaning to the words kids decode. A helpful way to explain it: *imagine giving an average adult a text on satellite orbital mechanics and asking comprehension questions* – most would struggle because they lack the specialized vocabulary and background knowledge, not because they can’t decode the words.

  Our students face that with academic texts all the time. Thus, **phonics and language development must go hand in hand** to yield true comprehension.

- **Focus on high-value words and content:** Not all words are equal when it comes to building literacy. Some words (like *and, the, run, happy*) are common and kids will hear them a lot in daily life. Others (*photosynthesis, monarchy, latitude*) they may only encounter through reading or formal instruction.

There's extensive research on vocabulary frequency and utility. One resource is *TextProject.org* managed by Dr. Elfrieda Hiebert, which offers lists of important word families and principles for selecting texts. The idea is to ensure our curriculum blends in *powerful vocabulary and knowledge* over time.

For example, a student might learn about the concept of "civilizations" in 2nd grade social studies (in simple terms), then again in world history in 6th grade, then in more depth in 9th grade global history.

That repeated exposure cements understanding. It's important to realize that **building knowledge is a cumulative, long-term process**. A child won't fully grasp the American Revolution or human anatomy from one unit in 4th grade – but each exposure, if sequenced well, adds layers of understanding. So, a related tip: **be patient and persistent**.

If state standards shift topics every year, find ways to connect them so students reinforce prior knowledge. Learning isn't neat or fast – especially for big subjects – but over 13 years of schooling, a well-designed curriculum can produce very well-educated young adults.

- **Reading Volume Matters (Print over Audio):** Encourage students to actually **read text themselves**, not just listen. Audiobooks and follow-along books are valuable (we love them!), but kids also need practice grappling with text on their own.

  There's a reason we say "reading is like exercise: you have to do the push-ups to build muscle – watching someone else exercise doesn't strengthen you." Many struggling readers will gravitate to having things read to them (because decoding is hard work for them). While it's okay to support them at times, they *must* get the practice of decoding themselves to improve. It can be a slog at first – that's why making sure books are at the right level and high-interest is essential.

  When a child *wrestles* with a new word, maybe stumbles and then figures it out, that process literally forges new neural connections and commits that word (and its pattern) to memory. If they only ever hear the word, they haven't done the mental heavy-lifting to internalize it deeply. At Objective Ed we've found after helping thousands of children that their lack of practice is a central, critical issue. [16] If a child can read out loud 15-20 minutes a day, 3 or 4 days a week, they can build these neural muscles successfully. You can teach all the techniques you want, but if the kids don't practice using them, their skills don't develop.

  Thus, programs that rely heavily on audiobooks or videos as substitutes for reading may inadvertently shortchange students' reading growth. Those media are great supplements (especially for background knowledge or engagement or accommodating disabilities), but **not replacements** for reading text.

In summary, addressing the reading crisis requires **systemic change**:

- Use evidence-based teaching methods,
- Ensure teachers are trained and supported to use them,
- Provide rich content across subjects,
- Create a culture that values reading.
- Get kids to practice

The good news is, many states and districts are now embracing these principles, and we're seeing encouraging results (Mississippi, Louisiana, etc.). We need to sustain and expand these efforts so they reach every classroom.

If we can successfully **organize and implement a new direction for reading instruction**, we not only boost literacy outcomes – we also build the *muscle* (the teamwork, the data-driven practices, the culture of innovation) that will help us tackle future challenges, including whatever AI throws at us.

It's like training for a marathon by mastering a 10K first. Literacy improvement can be that 10K that conditions our education system for the bigger race ahead.

Top-level takeaway

The reading crisis (and indeed most challenges in education) has no single culprit. It's a societal issue – our world changed, and our education system didn't keep pace.

Pointing fingers is less useful than forging partnerships to adapt. We all have cognitive biases and blind spots; part of this journey is questioning our assumptions.

AI, as amazing as it is, won't magically fix things – and if misused, could create new problems. We have to approach both old problems (like reading scores) and new ones (like AI ethics in classrooms) with humility, evidence, and collaboration.

At the end of the day, **our children are counting on the adults to get this right**. They need us to opportunity is open now – but it won't stay open indefinitely. Let's act with urgency and purpose.

Recommended Reading and Resources:

There are hundreds of excellent books on these topics. We have by no means even read more than a fraction of them. But here are some of our favorites on education and literacy challenges:

- *The Knowledge Gap* – Natalie Wexler, 2019. (On why building background knowledge is vital in K–8 education.)
- *Beyond the Science of Reading* – Natalie Wexler, 2023. (Updates the conversation with recent developments and emphasizes knowledge + phonics.)
- *The Reading Crisis: Why Poor Children Fall Behind* – Jeanne Chall et al., 1990. (Older but seminal work on disparities in literacy.)
- *Why Knowledge Matters* – E.D. Hirsch, 2016. (Case for content-rich curriculum, by the founder of Core Knowledge.)
- *Teaching Words and How They Work: Small Changes for Big Vocabulary Results*—Elfrieda H. Hiebert, Teachers College Press, 2019

On understanding the brain and learning:

- *Reading in the Brain* – Stanislas Dehaene, 2009. (Neuroscientific perspective on how we learn to read – a bit technical but illuminating.) [Also search for Dehaene's lectures online for a digest.]
- *How We Learn,* – Stanislas Dehaene, 2020, Penguin Books (A solid presentation of how we actually learn. What does the brain do, and why is it better at it than machines?)
- The Rise and Fall of the Teaching Profession – Kraft & Lyon, NBER Working Paper, 2024.

On AI and future of work/society:

- *Artificial Intelligence: A Modern Approach* -- Stuart Russell & Peter Norvig, Pearson Education Ltd., 2021.
- *Genesis: Artificial Intelligence, Hope, and the Human Spirit*, Kissinger, Schmidt, and Mundie, Little, Brown and Company , 2024
- *AI Ethics: Status of the Present, Ethical Dilemmas, and Frameworks for the Practical Mind*, Debbie Sue Jancis,
- *A World Without Work* – Daniel Susskind, 2020. (How AI/automation could reshape our economy and society.)
- *The Singularity is Near* – Ray Kurzweil, 2005. (Famous futurist's take on AI – a bit dated, but influential in thinking about exponential tech growth.)

Fiction that provokes thought on AI in a human context:

- *Klara and the Sun* – Kazuo Ishiguro, 2021. (AI told from perspective of an artificial friend; raises ethical questions.)

- *Bitstreams of Hope* – Andy Havens, 2023. (A speculative story on AI impact; not technical, focuses on people and society.)

And of course, consider resources from us at **ObjectiveEd** – we are happy to share data and insights from our work using AI to improve reading for students, including those with disabilities. We've learned a lot about what it takes to implement new tech in classrooms and outside of schools, and we're eager to partner with education leaders and policy makers in navigating these changes.

Citations

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14. Maryland education board approves plan to hold back third graders who fall short on reading, https://wtop.com/, October 23, 2024.
15. Louisiana students achieve their highest national rankings on the nation's report card, https://doe.louisiana.gov/ , January 29, 2025
16. How and Why Structured Reading Practice Works So Well, internal working paper available from Objective Ed, 2023. For a copy, please email info@objectiveed.com

About ObjectiveEd

ObjectiveEd's mission is to provide struggling students – and their parents and teachers – with digital curriculum and integrated progress monitoring tools that help each child reach their best possible educational outcomes. We develop specialized educational games and AI-powered learning tools for a range of needs: from blind and low-vision children, to students with dyslexia and other reading challenges, to general education students who are reading below grade level.

Our team brings both deep professional expertise in technology and personal passion for helping students with unique learning needs. We have been fortunate to receive support and recognition for our work, including competitive grants from Microsoft and multiple U.S. federal agencies (the National Institute on Disability and Rehabilitation Research, the National Institutes of Health, and the National Science Foundation). We won first place in the EdTechX Startup competition, recognizing the fastest-growing and most innovative edtech company globally. Our AI-driven reading tool **BuddyBooks** has earned **Tech & Learning's Award of Excellence (2022)**, a Bronze award for AI in Education in the **QS Reimagine Education** awards and was named **Reading Solution of the Year** in the **EdTech Breakthrough Awards** in both 2023 and 2024. (BuddyBooks also meets ESSA evidence standards at Tier 3 and 4.)

For our work in special education, we received the **Louis Braille Touch of Genius Award** from National Braille Press, an Annual Award from the American Council of the Blind, and Florida's "Innovator of the Year" award in education for students with visual impairments.

We cite these honors not to boast, but to underscore that **ObjectiveEd is a proven, trusted partner** at the intersection of education and technology. We deeply understand both the promise and the pitfalls of bringing new technologies into schools. Our approach has always been to collaborate closely with educators, validate effectiveness with data, and iterate based on feedback – all with the singular goal of improving student outcomes.

As you face the challenges outlined in this document – from raising literacy rates to integrating AI safely – please know that you don't have to navigate them alone. We at ObjectiveEd (Ken, Marty, and the team) are committed to being part of the solution. We're optimistic that, working together, we can turn the coming storm into an opportunity – to rethink, rebuild, and renew education for the better.

Thank you for your leadership in education. We look forward to partnering with you to shape a brighter future for all learners.