Sunita Gandhi
Jonathan Hakim | Tom Delaney

Accelerating Learning for All

ALfA

A Groundbreaking Pedagogy to Transform Education

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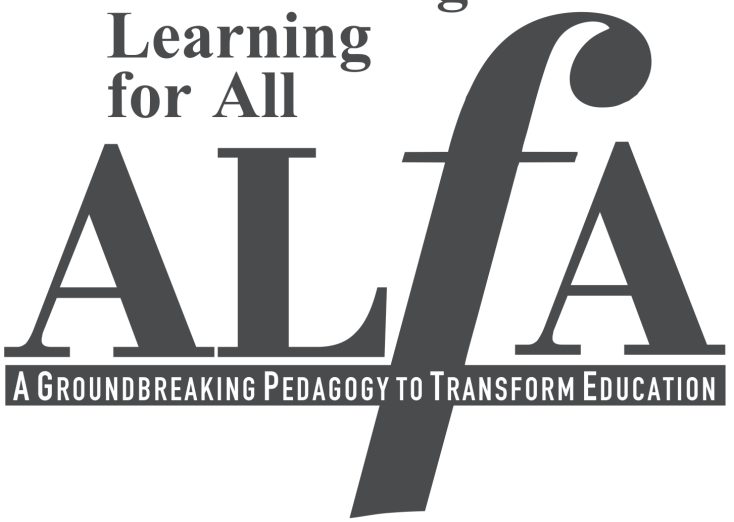

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Foreword

In this transformative era, "ALfA: Accelerating Learning for All" stands as a beacon of innovative pedagogy, promising to reshape the very contours of education. The authors have embarked on a mission to challenge the status quo, provoking us to rethink everything we know about learning.

Part A dissects the current pedagogical landscape, exploring the quagmires of traditional education and offering a fresh outlook on how we understand teaching and learning. Part B is a testament to the practicality of ALfA, providing a detailed account of how teachers and students alike can ignite the spark of knowledge. Finally, Part C delves into policy implications, sharing inspiring stories of ALfA's impact from local communities to global settings.

As we navigate through these pages, we are not just readers but participants in a movement towards a more enlightened and humane world of education. This book is not just a collection of ideas but a call to action for all stakeholders in education.

Dr. Bharti Gandhi
Forefront Educator, Groundbreaker, Woman Crusader
Founder-Director, City Montessori School, Lucknow
Holds the Guinness Record for World's Largest School
Recipient of the UNESCO Prize for Peace Education

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A special acknowledgment goes to my DEVI team for their tireless efforts in propelling the ALfA initiative onto the world stage. I am particularly grateful to Superior Principal Susmita Basu and the principals and teachers of City International and City Montessori Schools. Their openness to innovation and commitment to the ALfA program have been instrumental in its success and development.

Our gratitude extends to the children of the slums of Lucknow, whose resilience and eagerness to learn have been a continuous source of inspiration and insight for the ALfA program.

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Our international partners and colleagues, including Dr. Abdulla Rasheed Ahmed from the Maldives, Leslie Crawford, Daren Johnson, William Hui, Miriam Codd, Dr. Chrine Hapomwe, and many others, have been pivotal in spreading ALfA's mission globally. Their trust and collaboration have been invaluable.

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To all members of the Global Advisory Committee and every individual who has been a part of this journey—your challenges and victories have been the foundation of this transformative work.

Together, we continue to turn the page towards a brighter future for education worldwide.

Sunita Gandhi
ALfA Researcher and Conceptualizer

Introduction:
A Solvable Crisis

Education needs a drastic overhaul. Teaching techniques remain stuck in a nineteenth-century industrial schooling system.

Many of us may be sceptical of this claim, as education appears to have changed. Where we had blackboards, our children use smartboards. While our generation filled drab worksheets, kids now watch colourful videos. Where we sat pen-and-paper exams, our children do online, personalised tests.

But what do these changes add up to? Are all our children excelling and making progress? Do our children want to be in school? Do they love learning for its own sake? Are they more confident and ready to thrive in the outside world?

Sadly, the answer to these questions is often 'no'.

The outer appearance of our education system—its technology and infrastructure—may have changed, but its underlying structure, core ethic, and guiding principles remain static.

While some have found better ways to engage children, most schools globally are stuck in the past mould. Children still sit in classrooms divided by age. They still primarily listen to the teacher talking from the front. We continue to put them through stressful tests to get letter and number grades. We still allocate career streams based on children's performance in these exams, which fail to truly measure their vast potential.

Would you buy a phone made in your grandfather's generation? Would you go to a doctor who had only been trained in the medical techniques of the First World War? Would you invest in a business plan copied from decades ago? If the essential practices of technology and medicine, banking and law, and every other field, have evolved in the last century, why are we still using educational strategies developed during the Industrial Revolution?

Today's students are not satisfied with passive learning and memorisation. Their attention and interest quickly dissipate; they learn to

disengage and go through the motions. The outdated nineteenth-century teaching methods are not only inadequate for today's students but were never good enough for students of any era.

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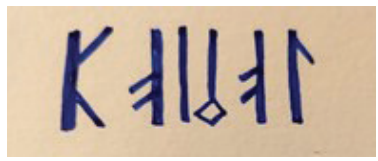
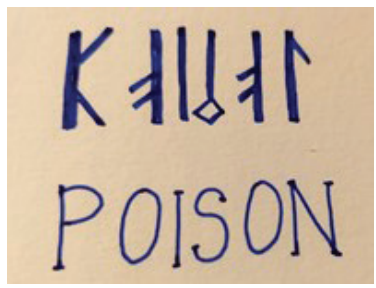
Can you read this word?



What about now?



Reading is like the air we breathe: essential, unnoticed, taken for granted. From the bank to the bakery to the ballot box, we read words casually, with barely a thought.

But how would life be if every word looked like this old Nordic script above?

Unfortunately, that is precisely how text looks for over 700 million adults and at least 200 million children: an unintelligible set of symbols. Reading is not some purely academic skill; it can make the difference between prosperity and poverty, between hope and despair, and even between life and death. Literacy is the key to future success—not just in academics, but in life more generally. Broadening out to the international level, literacy is crucial to achieving all Sustainable Development Goals – be it reducing hunger and poverty or fostering gender equality.

The world is facing a literacy crisis. Education systems, already under severe strain before the pandemic, have been set back twenty years or more by Covid. Hundreds of millions have lost over a year of schooling, and a sizeable proportion of them may never return to school at all—lost to child labour and underage marriages. Meanwhile, adult literacy programmes have ground to a halt.

In this age of digital technologies, including AI, the gap between the educational haves and have-nots has widened. For those who lack even a foot on the bottom of the academic ladder—foundational literacy—the costs of illiteracy grow ever more significant. The industrial education system has failed to teach them even the basics of reading, writing and arithmetic, let alone skills like collaboration, creativity, critical thinking and citizenship.

Is it possible to build an education system on the twin foundations of both quality and equality? An education that helps children develop these crucial twenty-first-century skills while ensuring no one is left behind in foundational literacy and numeracy? Is a future possible where illiteracy is no more and thumb impressions are consigned to the dustbin of history?

We believe it is!

The global literacy crisis is solvable. But not with the stale 'business as usual' of teacher-centred classrooms, rote memorisation and stressful tests. Instead, we need to re-imagine education.

***

Every parent desires the best education for their child.

I won't be satisfied that my daughter just achieves a particular mark. I want her to love learning and strive to keep learning more. I want her to confidently navigate society, making quality decisions in stores, hospitals, courts, and other public spaces. I want her to have occupations & avocations that mean something to her. I want her to be a good citizen of society and to be able to collaborate with others who are different from her.

To gain these skills, my daughter needs *a holistic education*. Knowing how to decode words and fill out worksheets is not enough. Truly holistic education equips students to understand what they read, communicate their thoughts effectively, and solve real-life math problems as they arise.

What would it look like to build an education based on comprehension more than memorisation? One that fosters cooperation, not competition? How could we support students to think critically instead of repeating mindlessly? Can we create a curriculum that leads young people to *want* to attend school—that builds up their spirits?

Accelerating Learning for All (ALfA) reaches students in the way their minds are designed to learn. It utilises a modern pedagogy focused on the learner rather than the instructor, on understanding processes rather than

regurgitating facts, and by growing interest rather than relying on fear of tests.

As the name suggests, ALfA enables children to learn reading, writing and arithmetic much faster – in months, not years! This efficiency ensures that all children attain these foundational skills, and reduces the drop-out rate as school becomes meaningful and sensible to students who can now understand their work and advance alongside their classmates. Beyond speed, ALfA is also a more holistic education: going beyond the 3Rs to foster crucial life skills through the very process of learning.

Does that sound like too much to hope for? We have developed the ALfA programme in our schools and implemented it across India and beyond. You can do it.

Do you want to see how?

Part A

PEDAGOGY

Hundreds of millions of children—and adults—cannot read, write, or do basic arithmetic. The industrial education system too often fails to help students learn these basic skills, let alone more advanced twenty-first century skills like collaboration, critical thinking and creativity. We desperately need to re-think and re-make our classrooms.

This first section diagnoses the problems with traditional education, and then lays out the basics to build a better way.

Chapter 1 breaks down the history of how Industrial Education has trapped students as passive learners and forced them to compete against each other for grades that lack a sense of purpose and meaning.

Chapter 2 shows that much more is possible by diving into the ALfA literacy pedagogy, showing how to cultivate students' love of learning through a consistently active, collaborative process.

Chapter 3 focuses on numeracy, unpacking the ALfA maths approach. We help children enjoy the concrete, creative processes that real maths entails rather than getting lost in abstractions they don't understand.

Chapter 4 goes to the heart of the ALfA pedagogy—peer learning. We discuss why random pairing works and how to best employ it in the classroom.

Chapter 5 sets out a broader educational vision beyond literacy and numeracy to the 4C skills and 4C traits essential in a twenty-first-century world.

CHAPTER 1

Are We Stuck in the Past?

Imagine two students.

The first child is bored. He tries to focus on his teacher's lectures but has difficulty paying attention. Sometimes he already knows the material and loses interest when forced to hear it again. More often, he is too far behind to make sense of the lecture. He studies long hours at home via rote memorisation to compensate for the parts he misses. Those intense hours of study help him scrape through with a passing mark, but within a few weeks, he's forgotten most of the material he crammed.

Now consider a second child. She enjoys class, where she spends much of her time engaged in exciting activities with other children. The material challenges her at her current learning level, and she only moves on once she has become proficient. Because the lesson requires active participation, she stays on task and focused. Homework consists of creative activities and projects building on skills she learned in class. Often she is able to use the same concepts months later when they come up in other contexts.

Any teacher would prefer student #2 over student #1. But how do we get there? Many schools blame their struggling learners when they're not engaged, accusing them of being too dumb to understand the subject or too lazy to put in the work required. They say, 'Look, some children are doing fine. That proves it's not the system's fault.' So, nothing changes. Threatening children with low marks hasn't helped them pay attention in class, and the typical school reform mantras of 'tougher standards' and 'more accountability' have failed to make a difference.

What if the problem isn't *the student*, but rather *the school*? What if we can transform our outcomes not by changing our learners but by changing our institutions?

Turning traditional classrooms into active environments with self-motivated learners is vital and achievable. We wrote this book to show you how to get there.

An Outdated Model for Education

Look at this classroom. Can you tell what year it is?

Division of Class 6 in Boston, USA
Photo by A.H. Folsom

The photo is from 1892. Yet, if you replaced the blackboards with whiteboards and modernised the decorations, it would look no different from today's classrooms. The only improvements are in aesthetics, not substance.

Teachers still stand at the front while pupils are seated in rows, passively listening. Instructional time still revolves around verbal lectures and written notes for the students to copy. After the lecture, children complete worksheets or do problems from a book. All learners are of the same age, work on the same material, and are given lessons at the same pace. And their primary motivation for learning remains the threat of upcoming tests.

Why are our schools still failing students? The simple answer is that our education system is stagnant.

We only need to look at other fields to know it doesn't have to be this way. In the last century, a technology sector once reliant on telegrams has produced computers, smartphones, and artificial intelligence beyond

our wildest dreams. Transportation has gone from horse-and-buggy to jets and electric cars; media has gone from black-and-white silent movies to incredible 3D special effects. The medical profession has given us antibiotics, vaccines, and surgical advances that transformed public health. Yet schools have remained essentially unchanged.

This lack of progress in our schools has tragic consequences.

According to a 2019 World Bank study, 53 per cent of 10-year-old children in low- and middle-income countries could not understand a simple text.[1] These students are in Class 4 or 5, yet still can't meaningfully read. While official government statistics will label such youth 'literate' if they can merely string together words, their reading is useless without comprehension.

Longer stays in school only make a small dent in the problem. In India, 32 per cent of rural Class 7 students were unable to read a Class 2 text, and 61 per cent couldn't solve a two-digit subtraction problem.[2] What have these schools accomplished in seven years if that many of their children still lack basic skills?*

The issue is not limited to low-and-middle-income countries. Another study found 80 million functionally illiterate adults in Europe.[3] Twelve percent of German workers have difficulty reading anything beyond a brief sentence, and try to avoid full passages.[4] In the USA, 70 per cent of adult prison inmates and 85 per cent of juveniles in the court system cannot comprehend a 4th-grade text, suggesting dire consequences for many of the young people who do not achieve literacy.[5]

Sadly, the COVID-19 pandemic has exacerbated these deficits. A 2022 World Bank report projects that the pandemic may increase functional illiteracy among 10-year-olds to 70 per cent, with the most significant struggles in South Asia (78 per cent), Latin America (80 per cent), and Sub-Saharan Africa (89 per cent). If teachers cannot help students recover the deficit, the World Bank estimates that this generation of children may see a loss of up to $17 trillion in lifetime earnings.[6]

What must we change? As educator Alfie Kohn laments, 'Just about everything.'[7] At a glance, we see that in traditional classrooms:

1. Passive learning means children fail to reach their academic potential

---

* As a literacy educator, I (Jon) have seen this myself. Many students enter our programme unable to read a Class 3 text; then, we discover during the registration process that they are attending 5th, 6th, or even 7th Class. In our course, they often learn to read after just 2-3 months of 15-minute daily lessons, so what was happening all those previous years?

2. Creativity and initiative are limited by teacher- and textbook- centred education.
3. Enthusiasm and morale are low as children are left behind in whole-class instruction

Before we can grasp the remedy, we must first understand the illness. Let's break down these failings:

Passive Learning is Ineffective

seeing is not as good as knowing
knowing is not as good as acting
true learning continues until it is put into action

– 22 Xun Kuang, 3rd century BC.[8]

Instructors have always recognised the benefits of active learning. Before mass schooling, most people developed skills via apprenticeships and on-the-job training. Whether you wanted to be a farmer or horseman, craftworker or herbalist, you learned your trade by practising with a professional. No one believed you could master much of anything by sitting, listening, and taking notes. They understood that learning was a participatory activity.

So, how did schools become so passive?

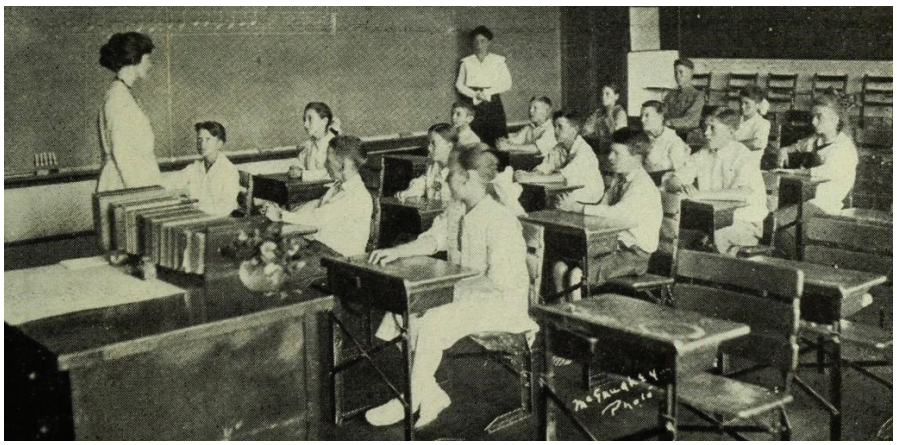
In *The Schools Our Children Deserve*, Alfie Kohn notes that whole-class instruction isn't that old.[9] Prussian officials developed universal primary schools in the 19th century to educate the masses for a changing society. The new jobs of the Industrial Revolution required that more workers read and do basic mathematics. Only mass schooling could meet the need.

Unfortunately, these new industrial schools didn't adopt the participatory learning used in apprenticeships and small groups. Instead, they separated children into rows of desks, made lectures the primary instructional tool, focused most activities on the teacher, and tested memorised facts. Those decisions resulted from the pressure to get a lot of students through school as efficiently as possible. Teaching big classrooms felt more manageable if the students stayed quiet, sat still, and only did what they were told.

The Prussian system did have some improvements over previous eras, when only the privileged received formal education. But it was the product of Industrial Age mindsets: assembly lines, division of labour, top-down structure, and strict time management, all guided by a need for efficiency and mass production.[10] Elwood Cubberley, dean of Stanford's School of Education in 1916, praised the fact that schools had become much like industry:

> *Our schools are, in a sense, factories, in which the raw products (children) are to be shaped and fashioned into products to meet the various demands of life. The specifications for manufacturing come from the demands of twentieth-century civilisation, and it is the business of the school to build its pupils according to the specifications laid down.*[11]

In the process Cubberley describes, the children's desires and motivations are unimportant. These students are 'raw products' to be built 'according to specification.' Such an educational model *requires* passive pupils because it assumes the system's desires take precedence over the learner.



Classroom in Kentucky, USA, 1917

In the same era, teacher and activist Margaret Haley blasted this industrial education, lamenting that teachers had become cogs in a machine.

> *'The increased tendency toward "factoryizing education" makes the teacher an automaton, a mere factory hand, whose duty it is to carry out mechanically and unquestioningly the ideas and orders of those clothed with the authority of position… The individuality of the teacher and her power of initiative are thus destroyed, and the result is courses of study, regulations, and equipment which the teachers have had no voice in selecting, which often have no relation to the children's needs, and which prove a hindrance instead of a help in teaching.'*[12]

How little has changed from Cubberly and Haley's time!

Yes, we have brought in some classroom technology and introduced more advanced techniques like differentiated learning. But have we

created anything genuinely new? Teachers still see children as clay to be moulded, a product to be produced. Statistical goals based on test scores are deemed more critical than individual hopes and futures. Teachers feel more powerless than ever, constrained by national testing, state-level curriculum requirements, and rigid administrator edicts. With a set curriculum, a dictated syllabus, a strict timetable, and politically derived materials, teachers must simply do as they are told to ensure a well-oiled machine.

The factory model may have enabled universal public schooling, but at what cost? When the lecture model hampers learners' ability to pay attention, it decreases their time on task and increases 'acting out.' Forcing everyone to follow along on the same page means that more advanced learners are bored with redundant material, while insufficiently prepared learners are confused and left behind. Teacher-centred rote instruction gives students little opportunity to engage in higher-order skills, such as critical thinking and creativity. Normed grades have led to stressful competition and make students reluctant to collaborate. And without participatory content, children are unlikely to understand how lessons are relevant to their lives.

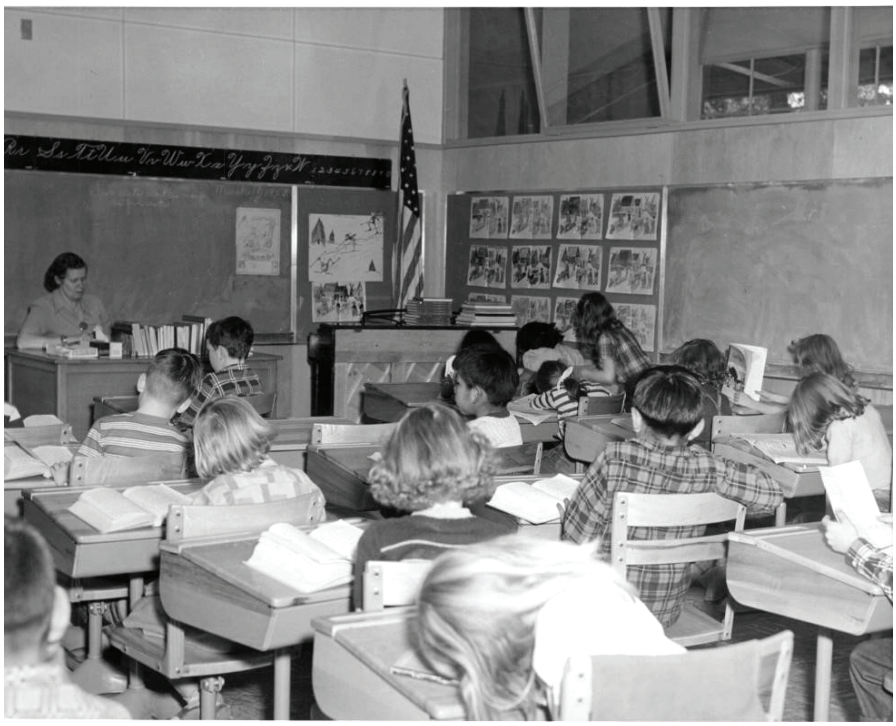
Indeed, many studies confirm that passive learning techniques produce inferior results.[13,14,15,16,17,18] Those particular studies are relatively new, but their findings are not. As early as 1916, the famed psychologist and reformer John Dewey proclaimed that psychologists and researchers had universally condemned this industrial style of 'teaching by pouring in, learning by a passive absorption.'[19] Yet he had noted that it was already becoming entrenched in schools.

Looking back, passive education models may have been necessary in the 1850s, when universal schooling was in its infancy. But it is long past time to replace them with more comprehensive techniques. The experts of the early twentieth century knew there was a better way; will we finally implement their advice in the twenty-first?

Teacher-centred Education Reduces Creativity and Initiative

> *What avail is it to win prescribed amounts of information about geography and history, to win the ability to read and write, if in the process the individual loses his own soul: loses his appreciation of things worthwhile; if he loses desire to apply what he has learned and, above all, loses the ability to extract meaning from his future experiences as they occur?*[20]
>
> - John Dewey, 1938

Though traditional methods are weak compared to active techniques, many learners eventually attain the fundamental skills. But at what cost? As you teach students the basics, they learn more than the 3 Rs: they learn *how* to learn. Unfortunately, children taught to read and do math via passive, teacher-directed lessons can end up stuck in those sedentary learning habits for the rest of their lives.



Second-Grade Class in Arizona, USA, circa 1953
Photo by Steve Leding

Creativity and initiative are essential attributes of any well-educated person. Great educators inspire students to learn more and try new things. But if all the child knows is 'be quiet and copy the teacher', then that's all they will bring to their future endeavours. How will they become creative writers if they've only written what the teacher has told them to write? Where will they find the inspiration to explore history if they've never been told they can ask questions of their own?

Infosys founder Narayana Murthy recently lamented that India's lack of inquiry-based learning has led to a shortage of innovation in the science and technology sectors. He suggested that if India wishes to advance in industry, its schools will have to change:

> *The first component is to reorient our teaching in schools and colleges towards Socratic questioning and relating what they learn in the classroom to the real world around them rather than passing examinations by rote learning. Even our top institutions have become victims of this syndrome thanks to the tyranny of coaching classes.*[21]

Mature, well-taught learners are curious, seek out problems, and form creative solutions. In contrast, passive learning limits students to following instructions, repeating after the teacher, and rushing through worksheets. Those mindless problem sets don't help them solve the math problems that arise in their daily lives. It may keep them from realising that math relates to their lives at all.

Even those who succeed in a faulty system can find it counterproductive in the long run. A New York University study of over 10,000 students showed that those with the highest grades had less desire to innovate.[22] This finding suggests that our institutions reward students who conform rather than students who come up with something new and different. Think of the Bollywood classic *Three Idiots* and how the institutional hierarchy treated Amir Khan's Rancho character, or what the system did to Robin Williams's nonconforming teacher in Hollywood's *Dead Poets Society*. We penalise those who want more from their school experience. We are systematically training our children to be mediocre.

Classroom in Chicago, USA. 1982
Photo by Margy Mcclain

Researchers have found that children start developing higher-order analytical skills in their first exposures to math and reading.[23] Thus, failing to foster these skills leads to deficits that will only accumulate in the future. Every step in a child's education builds on what came before it. If we hamstring young children by indoctrinating them in passive education, they will grow up with only passive skills to fall back on.

Is there a better way? Can there be something new?

Maria Montessori disrupted preschool norms in the 1900s when she realised that young children could learn independently, work for long periods, and focus on complex tasks. Our system, Accelerated Learning for All (ALfA), applies those insights throughout the schooling experience. Children have reason to hope that more can be expected of them.

Children Lose Their Enthusiasm in Whole Class Instruction

> *Traditional education reduced the material of education largely to a diet of predigested materials… If the pupil left it instead of taking it, if he engaged in physical truancy, or in the mental truancy of mind-wandering and finally built up an emotional revulsion against the subject, he was held to be at fault. No question was raised as to whether the trouble might not lie in the subject matter or in the way in which it was offered.*[24]
>
> – John Dewey, 1938

If there was just one bored schoolboy, if only one schoolgirl hated math, we might say the student was the problem. But when so many young people consider school a tedious experience and complain about the same subjects year after year, it's time to admit that the system deserves some blame.

Imagine if your workplace treated you the way traditional schools treat our children. How well would your attention hold if your employer forced you to listen to the same person speak day after day while you took notes and repeated what you were told? How important would you feel if thirty other people were regularly sitting and listening to the same material, forced to follow along at the same pace? Would you be happy working that job for twelve years? Would you ever begin to get bored?

If such an experience bores adults, our children's energetic young minds will struggle even more.

The issue is not only their minds but also their spirits. Why are we producing students who have no intrinsic desire to learn, who are only in the classroom because it is required, and whose happiest moment of

the school day is the moment the bell rings to mark the end? Remember how excited those little children were on their first day of school! Yet how quickly that enthusiasm dies. There has to be a better way.

> *When we take a step back and look at the traditional model as a whole—the fragmentation and enforced passivity, the reliance on basics and postponement of thinking, the memorisation of facts and rehearsal of skills and the emphasis on transmitting right answers—the effects on the quality of students' learning aren't encouraging. But beyond achievement, we also have to consider how kids come to regard what they're doing, the impact on their continuing motivation to learn. Of course, not all students will react the same way to anything. But, as a rule, it's hard to deny that their excitement about learning is almost visibly drained away by the Old School approach.*[25]
>
> – Alfie Kohn, 1999

None of these insights are new. By the early 1900s, researchers like John Dewey and Jean Piaget had developed profound wisdom about how children acquire knowledge. They saw that the factory education of their time was not in line with best practices. In 1899, John Dewey wrote that the typical child had to 'leave his mind behind because there is no way to use it in the school.'[26]

High School classroom in New York, USA. 2009
Photo by US Department of Education

Researchers already knew what was wrong back then. And yet little has changed.

Our systems have been captured by inertia. Teachers use a traditional style because that is how they were taught. Parents are more comfortable with those methods because they're familiar from their own experiences. Administrators know that change is riskier than stability. Thus, the system never progresses—no matter how far children fall behind, no matter how bored they get, no matter how little school prepares them for life, no matter how many studies show the superiority of other methods, no matter how many experts tell us that there's a better option … the inertia wins out.

> *The features of our children's classrooms that we find the most reassuring—largely because we recognise them from our own days in school—typically turn out to be those least likely to help students become effective and enthusiastic learners. That dilemma is at the heart of education reform.*[27]
>
> – Alfie Kohn, The Schools our Children Deserve

Many teachers do want to innovate. They work hard to decorate their classrooms in a relevant and inspiring manner, bring audiovisual elements into their lectures, and create engaging worksheets for their students to complete. Administrators search far and wide for new content programmes and high-tech classroom additions like smart boards and laptops. But so long as educators remain stuck in outdated worldviews, such innovations will be nothing more than window dressing. A 'print-rich environment' or a 'technology-based curriculum' can't compensate for the shortcomings of a teacher-centred pedagogy, a passive class of students, and learning via rote memorisation.

We won't transform education by playing around at the edges. The most fantastic horse-and-buggy could never do a car's job. No matter how many options you add to a landline telephone, it won't be a smartphone. Even the greatest directors of silent movies would be astonished by what is required to create a twenty-first century film. If we want to bring education into the modern era, we can't remain satisfied with modified versions of the same old thing. We have to try something new.

CHAPTER 2

The Reading Wars and the Missing Peace

Reading is more than a skill; it is a ticket to freedom.

Reading is critical to understanding the world and one's place in it. Sceptics might argue that reading has lost its sheen in an age of videos and podcasts. Yet the written word remains the backbone of knowledge dissemination. Without the ability to interpret texts, an individual is rendered vulnerable in an increasingly complex society.

Reading is about more than decoding words on a page: it is about unlocking doors to education, employment and empowerment. From medical labels to road signs, bank forms to ballot papers—literacy can make the difference between poverty and plenty, confusion and clarity, and even between death and life.

Given how vital reading is to a flourishing life, you might assume that everyone would know how to read. Yet, this is not the case. We saw some shocking statistics in the previous chapter. For instance, 70 per cent of 10-year-olds in low- and middle-income countries can't read a simple text with comprehension. UNESCO reports that the world has some 770 million illiterate adults—about the same figure as in 1950.[1]

So, we may not have achieved universal literacy yet, but surely there should be consensus on how to get there? For something as foundational as learning to read, surely the experts would have long since figured out the optimal way? Surprisingly, the answer here, too, is 'no'.

The Reading Wars

For decades, experts have argued about the best way to teach kids to read. Some prefer phonics, an approach that focuses on the relationship between letters and sounds. Others espouse whole language, which emphasizes word recognition from contextual cues. The debate has occasionally grown so heated that it has been called the 'Reading Wars'.[2] Classrooms are the battleground, with educators caught in the crossfire trying to discern the best strategies to lead their students towards literacy.

Those favouring phonics assert the critical importance of a solid foundation. If students cannot sound out words, they argue, how can they progress to complex texts and passage comprehension? In their view, reading is a jigsaw puzzle, where every sound and syllable has its rightful place. 'First, focus on the individual trees, and only then will the overall forest gradually emerge into view', phonics advocates suggest.

In contrast, the whole-language camp argues that the human brain is wired to seek meaning. In this perspective, focusing too narrowly on individual sounds can disrupt the flow of language, inhibiting a child's instinctual drive to understand stories. Whole language proponents warn against missing the forest for the trees, suggesting that children will learn the nitty-gritty details of phonics once captivated by the love of reading.

Table 1: The Reading Wars

	Phonics	*Whole Language*
Primary Focus	Understanding the relationship between letters and sounds.	Immersion in text and holistic understanding of language.
Instructional Method	Systematic and sequential teaching of phonetic rules.	Exposure to literature and deriving meaning through context.
Key Benefits	Improved word recognition and spelling. Effective for at-risk students.	Fosters a love of reading. Can be tailored to individual interests.
Potential Limitations	May not foster a genuine love for reading if too rigid.	May not provide enough structure for students who struggle to decode.

So, what does the evidence suggest?

Many early studies indicated that structured phonics is more effective than whole language. In 2000, the National Reading Panel (US) found, 'The meta-analysis revealed that systematic phonics instruction produces significant benefits for kindergarten through 6th grade students and children having difficulty learning to read.'[3] John Hattie's widely cited meta-analysis, 'Visible Learning', gave phonics a substantial effect size of 0.7, compared to a near-negligible 0.06 for whole language.[4]

However, more recent reports suggest that the case for phonics is not so clear-cut. A 2020 meta-analysis (a study of 12 papers which themselves synthesised the findings of many studies) found no statistically significant difference between phonics and whole language.[5]

Unfortunately, neither phonics nor whole language has been adequate to attain universal literacy. Most systems with either technique take over

a year to teach reading, even when successful. Indeed, the above study argues that 'the failure to obtain evidence in support of systematic phonics should not be taken as an argument in support of whole language and related methods, but rather, it highlights the need to explore alternative approaches to reading instruction.'

The name 'reading war' shouldn't distract us from the common ground. Even the most diehard proponents of phonics still want their kids to understand and enjoy what they are reading. Even a fanatic for whole language knows that it is essential that children be able to sound out and decode words. The debate concerns the best order and process for teaching reading rather than the desired goal. Phonics focuses on the *mechanics* of reading and believes *meaning* will follow, while whole language switches the emphasis.

As we wrote this chapter, multiple recent articles on the reading wars were published on major news sites.[6] Some new strategies aim for a pedagogy that incorporates the strengths of both phonics and whole language. One technique aptly called 'Balanced Approach'[7] uses a variety of teaching methods, including read-aloud, guided reading, shared reading and close reading.[8]

Another method recently gaining traction is called 'Science of Reading', which draws upon the latest research on how children learn to read to emphasise five pillars: phonemic awareness, phonics, fluency, comprehension and vocabulary.[9]

Is There an Alternative?

Amidst all the debate, we must not forget that hundreds of millions of children and adults worldwide cannot read at this very moment. For them, this discussion is more than a quibble between academics. For their sake, it is crucial to develop a way of learning to read that addresses their felt needs as soon as possible.

Is there a missing pedagogy that could combine the best of both phonics and whole language, bringing peace to the reading wars? Is there a way for children to learn to read in months, not years?

Accelerating Learning for All (ALfA) is a fresh attempt to help people learn to read in a way that is both effective and enjoyable, both methodical and meaningful.

The guiding principles of ALfA are:

- **Known to Unknown.** ALfA draws from learners' existing oral knowledge of the environment. This approach connects learning to

the brain's neural framework, allowing learners to incorporate new learning quickly and holistically with little instructor intervention.

- **Concrete to Abstract.** Focusing on real-world images and sounds before introducing abstract symbols ensures that students can connect symbols to their actual meaning from the beginning, rather than memorising meaningless letters first and figuring out what they mean later.
- **Asking Questions.** Learners ask each other questions and respond. They also make up their own questions based on texts. This develops a better understanding of the text and also develops critical thinking.
- **Peer Learning.** In ALfA, children work in pairs, taking turns to read words and sentences. These interactions speed up learning, and mean the entire class remains engaged.

Of course, none of these elements is entirely new. The practices of scaffolding from existing knowledge, asking questions to elicit thought, and learning from interaction with other students are all parts of ancient education systems. But ALfA combines these ingredients with some of the best elements of phonics and whole language to create a unique programme.

The stories of some hypothetical learners might help. Consider three children—Abdul, Babli and Chandni—from the same neighbourhood and similar family backgrounds. Let's see how their journeys unfold as they attend three schools with widely different approaches.

First Steps

It's Abdul's first day. He feels excited but slightly nervous as he walks through the school gates.

> *The teacher points to her alphabet chart and chants 'a se anaar' (the equivalent of 'a for apple'). The whole class repeats, 'a se anaar'. The subsequent letters follow: 'aa se aam', 'i se imli' and 'ee se eekh'. Abdul enjoys it initially—it is a sing-along song. After a few weeks, he has memorised the whole alphabet. He feels proud of his achievement, and his parents are glowing.*
>
> *But one day, a visitor came to the class. Instead of asking children to chant the whole alphabet, he points at a random letter and asks students what it is. Abdul quickly recites the alphabet up to that letter to jog his memory. Then, the guest writes another character on the board. This time, without the order of the alphabet chart, Abdul is lost.*

This version of *phonics*, which emphasises the early memorisation of the alphabet, is prevalent in India and many other nations. It is problematic at multiple levels: the alphabet is boring, abstract, and doesn't have meaning or connection to their life. Worse, the 'repeat after me' method means that children need not even look at the letter—the key to actual reading. Their eyes and minds wander as their ears and mouths do all the work.

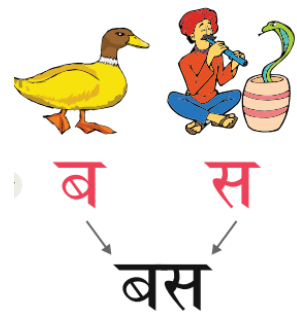
Let's see how a different student, Babli, is doing in her school.

The teacher starts by reading a story out loud from the textbook. Babli opens her reader and browses through the pictures. She understands the story from listening to the teacher. She can see the funny-looking symbols on the page. But she has little idea how the symbols relate to the story. Babli sees that some other children—perhaps those whose parents have been practising reading with her—are following along in their books. But both her parents are uneducated, and she can't recognise a single letter.

In this classroom, the *whole language approach* is failing Babli. Without the ability to decode letters and blend them into words, she can't develop into a fluent reader and is left passively listening to the stories others read to her.

Now let's find out how Chandni is doing in her classroom.

Soon after Chandni enters the class, the teacher calls her forward and asks her to identify a picture. Chandni sees that it's a batakh (duck). Now the teacher asks her to repeat the first sound in 'batakh', while she points to a funny squiggly shape beneath the image. It takes Chandni a while to work it out, but she gets there. Ba-takh… Ba-takh … the first sound is /b/!



They repeat the process with a picture of sapera (snake charmer), and Chandni works out that its first sound is /s/. Now the teacher asks her to join the two sounds: /b/ and /s/. Chandni has never done this before, but after a few tries, she gets it: '/b/-/s/…../b/-/s/…../b/-/s/…..bas!' Only three minutes into class, Chandi has already read her first word.

In the *ALfA* process, children learn to decode letters through picture prompts. Like phonics, ALfA helps children decode. But rather than being told what the sound is, they work it out themselves. Like whole language,

ALfA encourages children to think about the meaning of words and sentences. But rather than guessing words from the context, the children blend the sounds to form meaningful words.

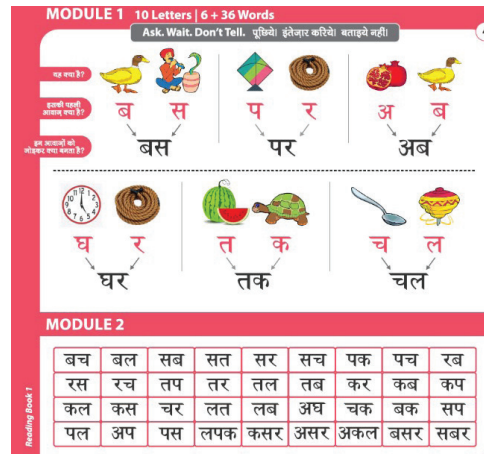
If this sounds surprisingly simple and elegant, you're not alone. When we started trying this approach in some of Lucknow's slums, our learners (both children and adults) were astonished and delighted that they could read words with meaning from the first lesson, without needing to memorise the whole alphabet or have someone else read to them.

But how do you convert a one-on-one literacy programme to something that can work in a school setting, where classes often have 40 or more kids and diverse learning levels? Let's go back to Chandni's classroom:

> *The rest of the class has been carefully watching how Chandni worked out how to read the word. After a few demonstrations with other children, the teacher tells them it is time to start reading in pairs. First, one child asks the questions: 'What is this picture?', then 'What is its first sound?' and, later, 'What do these sounds join together to make? Each time, the other child in the pair responds with the answer. Then the pair swaps roles for the next word.*
>
> *Chandni is delighted when they reached the end of the first lesson. She has not just learned to read a few words herself, but was also able to help another boy read. In this way, it takes only a handful of lessons before most pairs can decode the ten letters introduced in Lesson 1 and blend them to form a meaningful sentence, 'Bas par ab ghar tak chal' (Go home now on a bus).*

The paired learning process can work beautifully. But what if some pairs don't make progress? What if some kids rely on the pictures rather than learning to recognise the letters independently?

> *As Chandni's class progresses, the teacher unobtrusively observes the pairs at work. She notices that some struggle to decipher the picture's first sound (decoding). Others cannot join the letters to form a word (blending). But rather than rushing in to help, she encourages such pairs to seek help from their neighbouring pairs.*
>
> *Meanwhile, some pairs have already moved on from the first module. Module 2 is a set of new words made up of the letters introduced in Module 1, with a significant difference: there is now no picture prompt above the letter. Chandni gets stuck at first. But then*



her partner prompts her to look at the top of the page and find the same character in Module 1. After carefully comparing the squiggles that denote the letter **च** *(ch), she finds it and is reminded of the sound by the picture—chamach, /ch/. A few words later, taking turns to read a word each with her pair, Chandni again encounters the letter* **च**. *This time, she finds it quicker in Module 1. By the third time, she remembers that this symbol makes the sound /ch/ and doesn't need to look up anymore.*

We can see how the ALfA process kickstarts Chandni's journey towards literacy. Within just a day or two, she has:

- Understood how to use a word's first sound to represent a letter
- Blended two sounds to form words.
- Learned to identify ten specific letters.
- Joined these letters to form six words, which together make up a meaningful sentence.
- Joined the same letters in different combinations to make 36 more words.
- Increased her interpersonal confidence as she asked questions and responded to her partner.

Feedback and Homework: Tests vs. Games

It is now a few months into the school year. Let's check again on how our children are doing in their classrooms.

Abdul and his classmates are preparing for a test. Their teacher writes some answers on the board for them to copy. Abdul has lovely handwriting, neatly mimicking his teacher's style. He has memorised several of the poems from his textbook and can recite them word-perfect. There's only one problem: He can't actually read the poems' words, nor the answers he's copying into his notebook. All he knows to say is that which he's memorised by heart. When the test comes, Abdul and many of his classmates do poorly. As a result, the teacher

gives Abdul and his classmates more homework—copying sentences ten times over in their notebooks—hoping this will fix things.

All learning systems have some way for teachers and students to gain feedback. Unfortunately, the dominant approach—periodic tests—is stressful, time-consuming and often counterproductive.* Rather than leading to introspection or reform, low test scores are usually taken to show the need for a 'back to the basics' approach of more memorisation and more homework.

In the ALfA classroom, feedback is instead low-stakes, specific, instantaneous, and calls for immediate correction. Peer learning enables a 'control of error' throughout the process as children help each other, including catching mistakes.

As Chandni and her classmates work their way through the ALfA book, there are patches that they struggle with. Chandni doesn't recognise the picture 'kshatriya', and her teacher suggests she ask three other kids first, helping her learn to be resourceful and take the initiative. Thankfully, the third kid she asked knew the answer. Chandi mispronounces some words, but most of the time, she notices her error and 'auto-corrects' to the correct pronunciation once she realises what word it is. Other times, her partner spots the mistake and points it out immediately. But they don't just give negative feedback; Chandni and her partner often affirm each other with a 'well done', high five, or just a smile.

The teacher wants to keep tabs on the learning progress, so she occasionally invites the class to play a game using picture and letter cards. These are a couple of Chandni's favourites:

* ***Matching Game.*** *Half the class is given picture cards, and the other half is given corresponding letter cards. On the teacher's 'get set, go', everyone tries to find their partner with the corresponding card. (The teacher sometimes uses this at the start of the day to make new pairs.)*

Primary school children enjoy the matching game.
Lucknow, April 2023

* See Chapter 7 for a more detailed analysis.

* ***Word-building Game.*** *Everyone receives a letter card, and children must find a partner whose letter can be matched to theirs to form a word.*

Once Chandni has learned to read, she picks up writing quickly. Rather than being given sentences to copy for homework, she is given a few letters to make as many words as possible. This homework leads to a partner activity—she and her pair write words at home and check them the following day, learning new words from each other. Sometimes, she does this at home with her siblings or friends—repeating the learning process to recognise the first sounds of different household objects.

Building Fluency and Holistic Literacy

Let's fast forward several years and check our children's progress.

Abdul is now in Grade 5. He is working hard and has finally learned all his letters, successfully piecing them together to form words. He can read, but haltingly. Rather than asking his own questions based on the stories he reads, he tries to figure out which questions will come on the exam and looks up their answers. He hopes that if he works hard to memorise those answers, he will be able to impress his teacher and parents. This, it seems to Abdul, is the primary purpose of study—to satisfy others' expectations, not one's own curiosity.

Literacy is much more than the ability to decode and blend sounds. It's more than the ability to understand words and sentences. Literacy involves the love of language, confidence in interacting with and interpreting texts, learning to speak with a rich vocabulary, and making texts of one's own.

In another classroom, things are remarkably different.

Chandni learned to read fluently long ago and has now finished most books in the school library. When she and her pair read stories from the textbook, they don't just answer the questions; they make up more questions to ask each other. Chandni likes to write her own stories and share them with her friends. If asked to write an essay, she chooses her topic and writes in her own words. For her, writing is a collaborative process which gives rise to a rich representation of ideas.

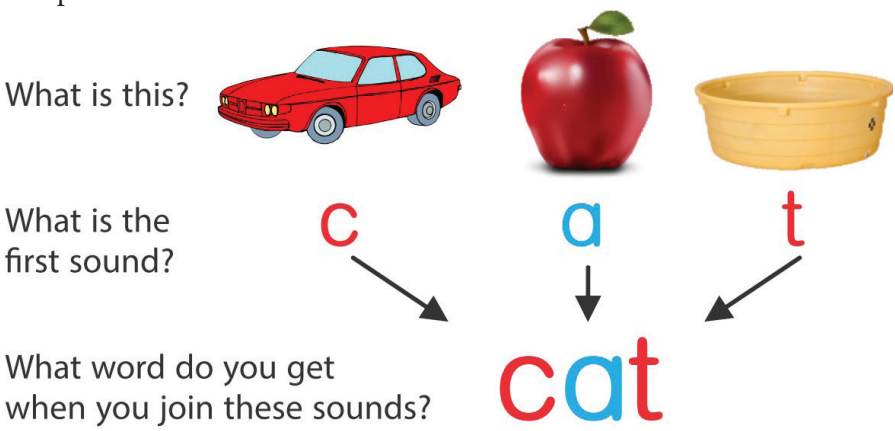
Cognitive Benefits of the ALfA Method

Let's examine the cognitive benefits of the ALfA approach in more detail.

First, the programme makes constant connections to the learner's preexisting knowledge. Learning is a constructive process. The brain

incorporates new information by connecting neurons, not dumping things into an empty box.[10] Rather than introduce the alphabet in the abstract, we employ objects, words, and ideas the child knows, then connect the new letters to the concepts already in their heads.

Second, we moved from 'concrete to abstract' to scaffold learning with a manageable cognitive load. The learner connects the concrete image of a 'bat' to the spoken word /bat/, then isolates the sound /b/ that /bat/ starts with. They then link the sound /b/ to the visible symbol 'b'. (Not ever using the name 'b'.) After two more picture-to-sound-to-letter sequences, the three letters are combined to decode the written word 'bag'. This sequence ensures the brain makes explicit connections at every step, enhancing comprehension and retention.



Third, students teach themselves and each other, not relying on a teacher to tell them the answers. Since they recognise the picture, know the spoken word, say the sound that starts the word, and see the letter displayed alongside its associated sound, all necessary information is present. The learners just need to put it together. This self-guided and peer-driven learning is far more cognitively active than listening to someone else talk.

Fourth, every child in the classroom is on task throughout the lesson. Since both partners must pay attention for the lesson to progress, there isn't room for anyone to check out mentally. Unlike the teacher-centred model, where only a tiny proportion of students are thinking with purpose at any one time, here we have a class full of student pairs thinking and working hard simultaneously.

Fifth, the learner gets immediate feedback. In a traditional class, students don't get feedback until they're tested. However, in the ALfA system, the learner receives a response from their learning partner after

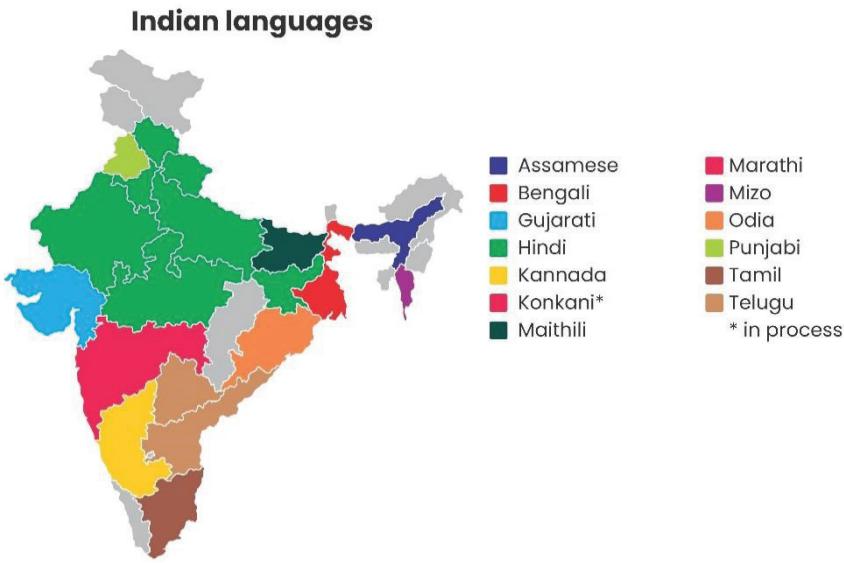
every word. That feedback speeds up the learning process and ensures children aren't left confused for days. Unlike the conventional examination system, where the teacher only discovers children's errors much later, we've designed the ALfA system to enable early intervention.

Finally, the whole process moves at the learners' pace. If the day ends with the learner not showing proficiency in the box words (Module 2), they repeat it the following day. There's no rush to move forward at someone else's pace—each child controls their progress. When students achieve clarity and decode that lesson's words competently, they proceed to the next task. On any given day, different pairs can be working on different modules.

ALfA in Different Languages

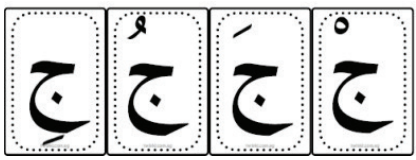
We first developed the ALfA approach for Hindi reading, but it is now available in thirteen Indian languages and another twenty international languages. You might wonder how a single approach fits diverse languages with their scripts, vocabulary, grammar, and syntax. The best way to answer such questions is by checking out the ALfA books in your mother tongue. Still, for the purposes of this section, we'll discuss some of the similarities and differences of ALfA in three languages: English, Hindi and Arabic.

The core of the ALfA process is always the same regardless of the language: known to unknown, asking questions, and peer learning. Other principles of ALfA have been worked out in different ways in different



languages. For instance, take the notion of scaffolding from simple to complex. In Hindi, this means that learners start learning words without matras and only later go on to learn one matra at a time. Similarly, in Arabic, the latter half of the programme introduces diacritical marks – little symbols which change the vowel sound as part of a syllable.

In contrast, English doesn't have modifiers but deals with its unique complexities. Our English Book 1 teaches only each letter's most common phonic sound. For instance, 'c' always makes the sound /k/ in Book 1, and 'g' the sound /g/. Book 2 introduces the less familiar sounds that letters make, as well as digraphs (*ch-*, *sh-*, etc.) and blends (*-nd*, *fl-*, etc.). ALfA materials in all languages scaffold from simple words to more complex words, sentences, and passages, but this looks different from one language to another.



Arabic: Diacritical Marks

का	/ka/	की	/kee/
कि	/ki/	कु	/ku/

Hindi: Matras

If the ALfA programme is not yet available in your mother tongue, you're welcome to serve your community by helping to create it. Our vision is for all children to have access to swift, high-quality literacy programmes, regardless of their mother tongue. Like-minded educators like you can turn this dream into a reality. The replication process is more creative than a simple translation, since each language has unique features. If you have a passion for literacy and want to help replicate the ALfA materials in your mother tongue, contact us today via our website (www.dignityeducation.org, scan this QR code).

Learning a Second Language

Learning to read in your mother tongue is more straightforward than learning to read a second language, and the consensus is that children should receive at least the first few years of education in their first language.[11] Literacy in the mother tongue provides a strong foundation to acquire more languages, even from a young age.

Research shows numerous benefits from multilingualism—from better decision-making and reduced biases to slower cognitive decline and greater plasticity.[12] But can the ALfA programme help people learn to read a second (or third or fourth) language? At the outset, it may seem that the ALfA programme is ill-suited for foreign language learning. After all, the foundation of moving from a known picture to an unknown letter only works if the word for the image is known!

However, evidence from the field suggests that ALfA can still be effective for children learning second languages. In our recent 'Fast Track to FLN' summer camp, we found that young kids substantially improved their English reading in as little as fifteen days.[13] How does the ALfA programme work in this context?

1. Most of our pictures are simple words that even second or third-language speakers know. Many Indian schoolchildren speak little English but still recognise and name pictures like 'car', 'apple' and 'pen'. Similarly, we have used the ALfA Hindi programme for Assamese children who migrated with their families to the Hindi belt of North India and found they have no problem recognising simple pictures like 'batakh', 'patang' and 'ghari'. Children who don't recognise the requisite pictures can learn them through quiz games with picture cards.
2. Although ALfA is, at the surface, a programme that focuses heavily on reading, the paired learning process also helps learners develop their

oral language. Children's listening and speaking skills grow parallel with their reading by asking each other questions.

3. Insofar as learning to read is like cracking a symbolic code, children who learn to read in their mother tongue using the ALfA programme often improve their second-language reading swiftly with ALfA, as they are already familiar with the logical scaffolding.

Adult Learning

Children exhibit more plasticity in their brains than adults, making it easier for kids to form the neural connections crucial to learning new skills such as reading.[14] This cognitive disadvantage for adults is compounded by social factors such as shame in admitting one's illiteracy, as well as gender expectations. And making mistakes while trying to read a simple text in front of others can be deeply embarrassing. We've found that many adults accept defeatist notions such as 'time has passed me by' or 'I'll never be able to learn'.

In this challenging context, the ALfA pedagogy shines even brighter:

- While many conventional literacy programmes start with the alphabet or with phonic drills, ALfA employs words with meaning from the very first lesson. This approach is motivating for people who might otherwise give up early.
- The paired learning context reduces embarrassment compared to reading in front of a large group.
- While adult learners may have lower plasticity than kids, they tend to have more patience and discipline. The self-paced and self-driven structure of ALfA appeals to them. One of our first adult learners demanded to take the book home so he could keep working on it with his wife!

The ALfA process has enjoyed success in several adult literacy programmes. Chapter 10 tells the story of Kurauni village, where hundreds of women learned to read Hindi in a few months using the ALfA books. And in Chapter 11, you'll see how Literacy Chicago has taken up the ALfA English materials to help American adults improve their literacy skills.

You've now read how ALfA enables children and adults alike to learn how to read and write. But acquiring complete FLN skills requires more than literacy – the 'N' in 'FLN' stands for 'Numeracy', a need just as crucial in the modern world and perhaps even more lacking. Our next chapter turns to the question of arithmetic.

CHAPTER 3

Making Maths Make Sense

> *'For the things we have to learn before we can do them, we learn by doing them, e.g. men become builders by building and lyre players by playing the lyre.'*
>
> – Aristotle, 330 BC[1]

In the previous chapter, we saw how the Accelerating Learning for All process upends traditional methods of literacy instruction. ALfA puts the student at the centre rather than the teacher, asks questions rather than giving answers, and moves from pictures-to-sounds-to-letters rather than rote memorising the letters before knowing how their sounds fit into words.

Similarly, ALfA numeracy progresses from known to unknown and concrete to abstract, using question-focused paired activities to facilitate deeper conceptual understanding before doing any written work. In this chapter, we'll show you how it's done.

First, we debate a crucial question – what, if anything, is wrong with the traditional way of teaching maths? Then, we show how an activity-driven process can be used across a range of topics, progressing from first steps like counting and number sense to long division and fractions.

What's Broken?

When we ask people what subject they love most, we get quite a variety of responses: Language, Science, Physical Education, etc. Yet when we ask what their least favourite subject is, most children (and adults) unite in choosing Maths.

Let's understand some of the fundamental reasons why the traditional approach to teaching maths isn't working for many learners:

- Maths teachers drill formulae and techniques until they're automatic for the students. But many children don't understand the reasoning behind the drills; they only do it that way because they were told to, so the work feels arbitrary.
- Maths involves many abstractions. These abstractions can be challenging for learners who don't yet have a conceptual understanding.

- Long lists of number problems appear disconnected from lived experience and irrelevant to the real world.
- Most maths work is individualised, so children do not interact with other students.
- Maths is usually taught via an inflexible process, leaving no room for creativity.

A central issue is that the industrial education system doesn't foster number sense: the feel for what numbers mean and how they apply to the real world. Number sense involves skills like understanding how much smaller one number is than another or being able to approximate about how large an arithmetic result will be before you calculate it. Many children in the industrial education system memorize formulae and can apply the steps to solve abstract problems, but they don't understand the concepts underlying the rules, and thus are unable to relate to maths in their daily lives.

As a result of these factors, a substantial proportion of students are bored and alienated by maths. Unsurprisingly, boredom has a negative effect on learning. John Hattie's meta-analysis of over 200 factors that impact learning found that students who felt bored suffered the most learning loss of all students without a disability like deafness or ADHD.[2]

Reliance on traditional math instruction has led to remarkable shortcomings in numeracy skills in many regions. For example, consider India's Annual Status of Education Report (2022). This survey found that over half of Indian students are over three years behind their grade-appropriate maths level. For instance, just 50 per cent of children in Grade 5 can do a two-digit by two-digit subtraction (typically taught in Grade 2).[3] Only 45 per cent of children in Grade 8 can perform a three-digit by one-digit division (typically taught in Grade 4).

Table 2: Annual Status of Education Report, 2022

Std.	*Not Even 1–9*	*Recognise Number*		*Subtract*	*Divide*	*Total*
		1–9	*11–99*			
I	37.6	36.8	19.8	4.1	1.7	100
II	16.9	36.1	33.1	10.1	3.9	100
III	9.8	27.6	36.8	17.6	8.3	100
IV	5.8	20.2	35.3	22.9	15.9	100
V	3.7	14.6	31.8	24.3	25.6	100
VI	2.8	10.2	30.4	24.9	31.7	100
VII	1.9	7.3	28.3	24.7	37.8	100
VIII	1.6	5.2	25.5	23.1	44.6	100

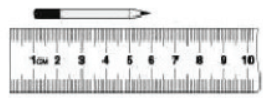
The problem isn't limited to government schools. By Grade 8, only 54 per cent of private school students in India can perform division. Furthermore, the ASER 2018 report showed that 40 per cent of students could already do those same division questions back in Grade 5.[4] In other words, only a quarter of the 60 per cent of students who failed to solve division problems in 5th grade had advanced in that subject four years later.

But it gets worse.

Most large-scale maths exams, including those conducted for ASER, test the ability to manipulate number problems without a deeper conceptual understanding. When more advanced exams are used to teststudents' ability to apply mathematical thinking practically, the results are shocking.

The WIPRO Quality Education Study (2011) tested the maths, science and language competencies of some 23,000 students of Grades 4, 6 and 8 from eighty-nine 'elite' private schools around India.[5] Let's look at how students did on some of those problems.

The length of this pencil is about_____.



A. 4 cm
B. 5 cm
C. 6 cm
D. 7 cm

Less than a third of Grade 4 students in elite schools got this question right. 67 per cent answered option C—not understanding that the placement of the base of the pencil needs to be considered when measuring it.

Anupam takes papers P and Q, which are exactly the same.

He crumples P as shown in the figure.

Which of the following statements about P and Q is true?

A. P has more weight than Q.
B. Q has more weight than P.
C. P and Q have equal weight.
D. P and Q both have no weight.

Remarkably, only 22 per cent of Grade 6 students in elite schools correctly answered **C**, that crumpling a paper makes no difference to its weight. A similar misconception occurred regarding a question about area, where only 45 per cent of Grade 6 students realised that cutting a paper in half and rearranging the two pieces would not change the area.

These problems are not unique to India. Even in a country as wealthy as the US, 29 per cent of young people have low numeracy skills.[6] Resources and staffing may differ from country to country, but the outdated pedagogy remains the same.

Aware that the traditional education system is proving inadequate, many education systems are in the process of trying various reforms. Some have advocated a move to algorithm-based calculation tips, such as 'Vedic Maths'.[7] Memorising formulae and tricks like these can help students solve test paper questions in some circumstances. However, such mental math aids don't conceptualise the subject and can't easily translate to solving real-world problems.

Others argue for more modern technology in education, extolling various apps that turn solving sums into a fun experience. We are all for gamification and interactivity in education. But access to technology remains limited in many poorer families; and for those who do have mobiles, the amount of time kids spend looking at screens is concerning! Further, many forms of on-screen education lack conceptual depth. Dressing up old pedagogies in new tech clothing doesn't change the fundamental difficulties in teaching mathematics.

More promising is the push for activity-based, hands-on maths learning. Sadly, though, these efforts at reform often end up as window dressing—fun activities that break the monotony of lessons but seldom connect conceptually to the lectures. A few extra bells and whistles on the horse and cart won't get us to an electric car! And the maths classroom needs much more than just an occasional activity to make it truly engaging and effective.

We believe that nothing in mathematics is inherently hard or scary. The difficulties originate only in how we teach it. You'll see in this chapter that maths can be the most concrete, relevant, and exciting subject your students will encounter when taught with a new approach.

The ALfA Numeracy Journey

ALfA's key insight is using the child's known experience to help them attain new knowledge. According to cognitive psychologist Nelson Cowan, 'New information must make contact with the long-term knowledge store in

order for it to be categorically coded.'[8] If we want learners to incorporate our lessons fluidly, we must use their long-term knowledge store as the foundation of the lesson.

As we saw in the last chapter, ALfA uses children's oral language knowledge and ability to recognise pictures as the foundational 'knowns' upon which to build up to 'unknowns' like letters. So, what mathematical knowledge do young children already possess? The answer is simple.

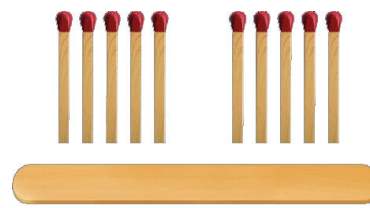
Counting.

ALfA maths starts from counting as a base and works up from there. Even learners who don't recognise numbers or symbols can still count items in their day-to-day lives. That's why we use tangible objects to teach simple operations. Only later will we connect these objects to abstract representations. Throughout the process, peer-learning activities facilitate the development of number sense.

Let's follow the journey of a numeracy learner using the ALfA approach.

Start with Real Things

We invite learners to begin by counting matchsticks. Only when a learner has proven the ability to count objects do we teach symbolic counting (having them make five tally marks on a page) and then abstraction (writing the number '5' to match the tally marks). Since our materials scaffold from step to step, students can proceed through the lesson in their learning pairs with minimal teacher intervention. From the first lesson, the programme also introduces children to concepts like 'less than' and 'more than'.



ALfA's techniques ensure that children develop conceptual understanding of numbers in every activity. For example, to teach two-digit numbers, we again use matches to represent 'ones' and then add ice cream sticks to represent 'tens'. We introduce this concept through tasks showing that ten matches are equivalent to one ice cream stick, then exercises which connect the matchstick / ice cream stick combinations to their written representation.

For larger numbers, bundles of ten ice cream sticks represent the '100s' column, and some other concrete object, like a spoon, can represent a thousand. (You may notice that all materials used in ALfA are cheap, reusable, sustainable and locally available.) Once again, children build up to these concepts by seeing that ten ice cream sticks (10 tens) are

equal to one bundle (100), and 10 bundles are equivalent to one spoon (1000). Thus, children learn to create four-digit numbers with a concrete representation via which they can easily visualise the differences between numbers, as opposed to written digits, which have no clear meaning to the early learner.

Math Games

Along with the concrete (physical objects), ALfA incorporates the kinesthetic (physical actions).

One fun activity is the 'switch out' game. One child lays out a few 1000s, 100s, 10s and 1s; then, their pair adds up the total to find the number represented. The first child changes one pile, and the second voices the new number quickly.

We've seen learners become remarkably fast at computing new numbers through games like these. Unlike written number games, where the real-world meaning of the numbers can get lost, these students remain connected to the numbers through their concrete representation. Teachers can devise numerous similar games from the same principles.

A group activity that bridges the concrete-abstract divide is the Ascending/ Descending Game. Each learner receives a card with a number written on it. They then arrange themselves into a line from smallest to largest (or vice versa). There are many variations you can play on this theme. For example, in an advanced version, the children have to stand further or closer together depending on how far apart their numbers are. Another idea is to give children cards with fractions on them, then ask them to arrange themselves likewise. As with most games, there are endless variations that the teacher—or better yet, the students—can come up with to teach different concepts.

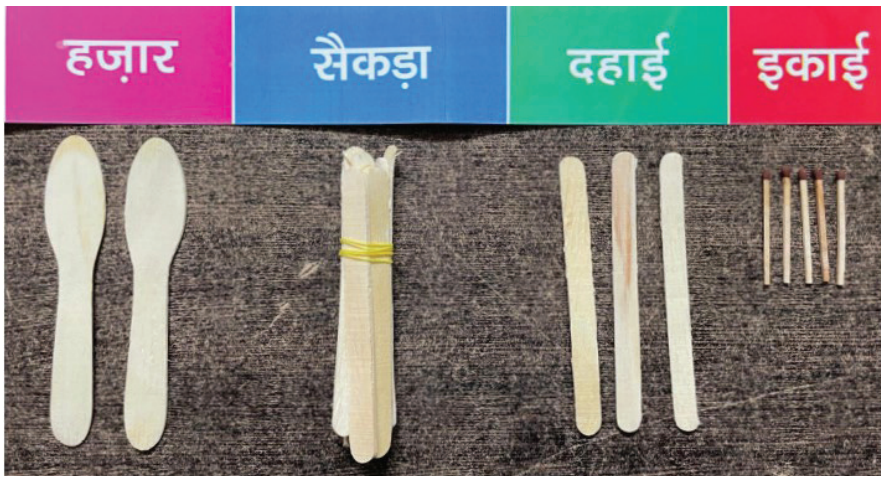
Even after they've mastered pictorial and abstract representation, students will continue to play math games. As in the literacy games, these activities heighten student interest while cementing concepts into their brain's cognitive structure. Children can play these games at home with their family, friends, or puppets. Playing games is much more engaging than doing homework, which often leads to a more significant learning impact. It even allows for greater creativity, as they use various available home materials. We've seen kids represent 'ones' using garlic cloves and 'tens' using onions!

All these games aim to help students develop their number sense and an intuitive grasp of quantity. Number sense is vital to building foundational numeracy.

Arithmetic Operations

Once children grasp the meaning of numbers, the programme continues into operations, such as addition, subtraction, multiplication, and division. Teachers apply the same procedure, starting with physical objects and only later bringing in abstractions.

We introduce the concept of a 'number bank' early on to help with arithmetic. In a two-digit number bank, students tape a blank paper on the desk and then draw a line down the middle. They arrange their matchsticks (ones) neatly on the right side and ice-cream sticks (tens) on the left side.

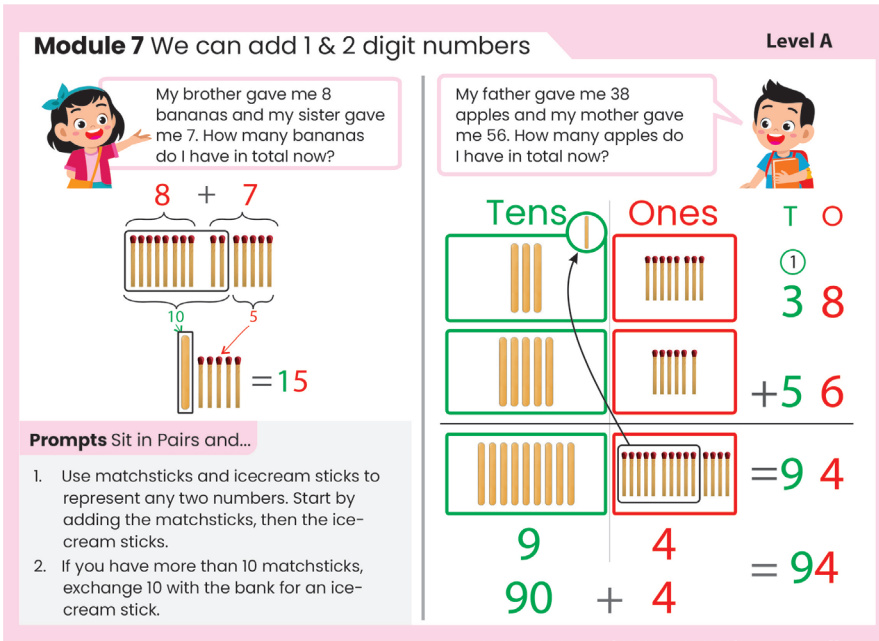


A 4-digit number bank

Suppose we are teaching addition. We start with a word problem so that students can connect the skill with their daily lives. But instead of solving the problem with written numbers, the learners represent their work using matchsticks and ice cream sticks. To start, the children pull the appropriate number of matchsticks and ice cream sticks out of the bank to form the number(s).

Consider the question below:

Child A pulls 38 out of the bank (three ice cream sticks and eight matchsticks), and Child B pulls out 56 (five ice cream sticks and six matchsticks). They work first with the ones: grouping the matchsticks yields fourteen. Since the children already understand that ten matches are equivalent to one ice cream stick, they can put ten matches into the bank and take an ice cream stick in exchange. This is a crucial rule to emphasise: The bank only allows you to exchange things of equal value.



Addition module: Solving word problems with concrete objects

Next, they work with the tens. Grouping the ice cream sticks together yields nine: five and three that they started with, plus the one they exchanged 10 matchsticks for. The pair now have nine ice cream sticks and four matches, or 94.

In the traditional education system, children taught to perform a 'carry the 1' adding operation often learn how to do it without understanding what it means. Those problem sets are divided into 'non-carry-over' and 'carry-over' sections, which drill the techniques without promoting comprehension.

The problem with this arbitrary distinction was driven home to us by one student who, when we gave them a sum to solve, asked, 'Is it a carry-over question, sir?' When we said 'yes', they were able to solve it. But the fact that they had to ask indicates that they had no idea what the process of carrying over meant or why it is employed in some problems and not others.

In ALfA, we introduce questions with and without carry-over simultaneously. As with all ALfA exercises, children make questions for each other randomly, not knowing ahead of time whether the solution will require a carry-over or not. Working through several of these exercises using physical objects will give the children an excellent intuitive grasp of carrying. Then, when the children graduate to abstract representation,

they will know what they are doing and why it works, rather than just following rules they don't understand.

One final benefit of the concrete-to-abstract methodology is that it enables children to visualise and solve even large sums. Memory masters tell us that the key to remembering large amounts of data is to visualise it. What better way to teach visualisation than to drill with manipulable visuals from the beginning? With practise, even Grade 2 children can solve four-digit addition problems quickly and accurately without needing to work them out on paper.

Demonstrating Competence: Story Sums

As learners advance, employing objects or tallies is no longer necessary. However, we never stop using real-life examples and word problems to teach concepts, as we don't want students to lose track of the relevance of their work.

Our keynote word problem format is the 'story sum'. Story sums are a single maths story that operates as an entry gate to many more such stories, building a template for infinite questions. Here is an example:

> *At 6:45 am, Maria left for the market with 200 rupees. The market she walked to was 0.75 kilometres away, and she wanted to get there right when they opened at 7 am. When Maria arrived, she saw eggs were 80 rupees/dozen, milk was 50 rupees a litre, and bread was 36 rupees per loaf, so she bought half a dozen eggs and three loaves of bread. Unfortunately, she had to wait behind four people in line and stayed ten more minutes. When Maria returned home, she divided the change among her three kids.*

This short story can cover a range of concepts—addition, subtraction, multiplication, division, decimals, fractions, time, distance, speed, and money. The ALfA workbook suggests some questions for children to solve based on the story, such as:

- How much money did Maria spend?
- What was the cost per egg?
- How fast did Maria walk to reach the market right when it opened?
- On average, how long did the people in front of Maria take to purchase groceries?
- How much money did each of her children receive?

After students have solved these questions in pairs, they can make up more such questions for each other based on the same story. Not all of the questions children come up with will be answerable. That teaches

an additional lesson relevant to real-world problems—learning to tell whether you have enough information and when you need more.

The story sum is a template from which students can create many more stories for each other. They can revise each situation by changing the names, numbers, and type of store. Sometimes, they adjust their questions to make them easier or harder for their partner.

Here's another example:

Grandma is planting a garden. Her yard is 12 metres long and 5 metres wide, and she wants to use half of the yard for the garden. Grandma must build a fence around her garden to protect it from animals. She will fertilise the garden with cow manure purchased from a farmer. The fencing costs 600 nairas per meter, and the cow manure costs 10 nairas per litre. She thinks she will use about five litres of manure per square meter of the garden. Grandma has divided the garden between spinach, tomatoes, and chilli peppers. The seed costs and production of these different options are:

	Seed Costs (Nairas/Bag)	*Productivity (kg/m²)*
Spinach	80	5
Tomato	120	10
Chilli pepper	50	1

Again, the story sum connects with real-life experiences for students – of farming, grandparents, and making decisions with trade-offs. The number of questions students can derive from this story is enormous. Still, some of those questions would require additional information to answer. An inquisitive child may ask the teacher follow-up questions such as 'How large an area can you plant with one bag of seeds?' or 'Does the garden have to be rectangular?'

The story integrates many mathematical concepts – including perimeter, area, volume and money. It goes beyond maths to connect with other subjects, like science ('Why do different crops have varying productivity?') and environmental studies ('Why is grandma using cow manure rather than synthetic fertiliser?').

Even when your students advance to higher-level math, it is essential to keep using exercises that are relevant and interesting to the learner. The purposes are manifold. Children solving such problems engage in more critical thinking than when solving a simple formula. They are more engaged than with abstract problems on a worksheet. They can see the significance of their work, more easily connecting it to practical tasks outside the classroom.

When taught with concrete objects, fun activities, and self-directed real-world problems, numeracy skills no longer need to be boring or scary. Instead, they can be an absolute joy to learn.

A Year's Numeracy in 45 Days?

Recall that half of Grade 5 students in India can't do a two-digit subtraction. In this light, the notion that a student can go from ground zero to functionally numerate in just 45 working days might seem too good to be true. However, the ALfA process, scaffolding neatly from students' existing knowledge and engaging them with paired activities, makes this rapid progress possible.

This video, shot in Shamli district, showcases the children's impressive maths gains within forty-five days. Read more about the Shamli ALfA project in Chapter 10.

Scan the QR or go to www.learn.literacynow.app to see the ALfA numeracy book and understand how it scaffolds from simple to complex.

Now that you understand how ALfA concepts facilitate activity-based learning in language and math, you may wonder how these techniques would transfer to science, social studies, and other subjects. The ALfA process moves easily across various domains, allowing subjects to be integrated into the child's mind rather than remaining in separate silos. The key is paired learning. As we'll see in the next chapter, teachers of any subject can utilise paired learning to introduce material and investigate their world in new and exciting ways.

CHAPTER 4

RePairing Education: The Peer Learning Transformation

Remember those 1800s classrooms that looked much like today's schools, with individual desks in rows facing the teacher? Here's another one to remind you.

Second-grade Classroom in the Hyde School, Boston, c. 1890s
Photo by A.H. Folsom

This physical setup has changed little in over 100 years. The pedagogy it embodies is similarly stagnant. But what options are there? What's the alternative to a teacher-centric classroom with passive learners working alone in lined-up desks? Can we *repair* our broken system?

The answer hides within the question itself: a return to *paired* learning.

Paired learning is a process by which students help each other work actively through subject matter. A paired learning classroom focuses

children on each other instead of having everyone stare at the teacher in the front. At a glance, you can tell something different is going on.

ALfA Classes Conducted at the 11th CIS Summer Camp in Lucknow, India, 2017

In a paired learning classroom, the teacher introduces the lesson and then matches students into pairs. One student, the 'learner', tries to read the passage, solve the problem, or otherwise perform the task given. The other student, the 'tutor', guides the learner on which tasks to complete, gives feedback if they notice the learner making any mistakes, and assists the learner if they struggle. For challenging material, the 'tutor' and the 'learner' often solve the problem together. The adult teacher's role is to move about the room, facilitating the process and giving individual help to any pairs who fall off task or reach an impasse.

In some paired learning models,[1] the teacher pairs stronger students with weaker ones and designates the stronger student as the peer tutor. The stronger student employs creativity and insight to find new ways to explain the lesson, while the weaker student gets direct, personal attention from a stronger peer.

Other paired learning models (such as ALfA)[2] allow students to rotate between the tutor/ learner roles regardless of ability, under the philosophy that everyone has something to gain in both positions. If two students of equal ability help each other, they may excel in different areas and notice different mistakes, so they can accomplish more than either would have individually. Even when a stronger learner works on a problem while being 'tutored' by a weaker learner, the stronger student still gets

to practise their problem-solving skills, while the weaker learner benefits from observing someone work at a more advanced level. Sometimes, even a weaker learner will catch an error in the stronger student's work. The child-focused nature of paired learning ensures that all students remain active and can gain something from any configuration.

Paired learning isn't new. The classroom form has been traced back to an Indian school in the late 1700s and British schools in the early 1800s.[3] In both cases, children progressed successfully with minimal teacher intervention. Administrators shared the idea with others, and the method became popular, spreading to thousands of schools in England, France, Italy, the United States, and South America.

Unfortunately, the technique disappeared in the mid-1800s when the Industrial Revolution took over public schooling. Educators assumed that a lecture delivered straight from the teacher's mouth was more efficient. Some teachers felt that cooperative learning wasn't practical for their school's size or that it supplanted their top-down authority. Thus, direct teacher-centred instruction and passive learning became the norm for over a century.

Since the 1960s, paired learning has undergone a resurgence. Structured paired learning schemes now include PALS (Peer Assisted Learning Strategies), CWPT (ClassWide Peer Tutoring), ALfA (Accelerating Learning for All), and CSTT (Classwide Student Tutoring Teams). These techniques have advantages over the traditional model, namely:

- **Learning is Active:** Children participate in their education, developing their connection to the material at a deeper level.
- **Learning is Responsive:** Students receive continuous feedback from their learning partners, which is proven to enhance learning outcomes.
- **Learning is Individualised:** Pairs proceed at the pace and level of the 'learner' rather than being forced to match the speed of their classmates. As a result, slower students get more time, while fast students advance at their own pace.

Paired learning may sound idealistic to those who haven't experienced it. They have questions like, 'Can children learn with minimal direct instruction?' or 'How could students help their learning partner if they haven't mastered the material themselves?' Thankfully, there is a considerable body of published research on the efficacy of cooperative learning. These studies have shown that paired learning can lead to:

- Superior academic performance and test scores[4,5,6,7,8]
- Greater skill mastery[9,10,11,12,13]
- Deeper understanding of concepts[14,15]
- Enhanced reading comprehension[16,17,18,19,20]
- Ability to link content to themes[21]
- Higher engagement and time-on-task[22,23]
- Better student attitudes and motivation[24,25,26,27,28,29]
- Improved classroom behaviour[30,31]
- More equality for students of different backgrounds[32,33,34]

Paired learning can work for learners from kindergarten up through university. Teachers use it successfully in reading, maths, social studies, science, computer skills, and life skills courses. Even new language learners and students with mental disabilities have benefited from peer learning, both as learners and as tutors. Schools currently employ cooperative learning in the USA, India, Canada, Turkey, Nigeria, Ghana, Korea, Germany, Indonesia, Ireland and other nations. It's probably being taught somewhere near you.

Most studies we cited focus on 'hard' outcomes, such as better test scores and skill acquisition. However, a key strength of paired instruction is that it also improves 'soft' skills. Teachers find that children working in a collaborative learning classroom show more teamwork and enhanced friendships. Students report they like learning in pairs and wish to continue.

Even the youngest students know what good pedagogy feels like. A study of paired learning in reading classrooms found that children as young as five understand the difference between empowering help (suggesting hints) and disempowering help (giving answers) and act accordingly, first giving good hints to their peers rather than just telling them the answer.[35] However, when these same children heard particular classmates described as slow or incapable of learning, they began to teach them in a less empowering manner, more often just giving away the answer rather than helping the tutee work hard to come up with the solution.[36] This experiment also shows how much a teacher's words matter—impacting students' self-esteem and how other students view them.

That study also highlights an advantage of random pairing. When teachers avoid pairing students by ability, they have fewer opportunities to compare themselves to others and feel they're not measuring up. If only the stronger half of students are allowed to be tutors, then the other half know they aren't 'good enough'. With random pairing, we can train all our students to respect each other – and themselves.

Not all positive impacts are revealed in studies. Can you measure the character improvement of children who learn to help each other? Or the joy of a student who was previously told they were 'slow' but is now trusted with the role of a peer tutor? Paired learning develops compassion, confidence, and self-esteem beyond what any score sheet records. Paired learning also facilitates a classroom environment where students can work on deeper, more complex problems, known as 'constructivist' learning. These are profound gifts to our students.

The ALfA Paired Learning Process

Accelerating Learning for All (ALfA) is the product of a twenty-year journey of figuring out what works and applying it in the classroom. It's the real-life application of paired learning to each aspect of the classroom experience.

In ALfA, every child becomes the focal point of their education. They work through the material themselves rather than waiting for someone else to tell them what to do next, because the task only progresses if they take the initiative. With no teacher to parrot off, learners must produce the answers. This focus places each student in a cognitively active mode as they *think* and *respond* throughout the lesson.

Of course, the learner is not alone in this pursuit – each child has a partner to guide them. Students are assigned random pairs and take turns performing in both roles. Thus, every student gets exposed to the material in two modes – as the learner and as the tutor. Children gain greater confidence when they are in control of their learning process. We often hear our students in our programme boasting: 'I learned it all by myself; nobody told me.' Once learners have internalised these techniques, they practically teach themselves how to read!

You may wonder, 'How can children teach each other things they haven't yet learned themselves?' We're so used to teacher-centric classroom materials designed for adults to understand and interpret material for the children's sake that we don't realise learners working together can accomplish a lot with suitable materials. ALfA books look different because we design them for children, not for teachers. As we showed in Chapters 2 and 3, the key is to move from 'known to unknown' in a manner that builds on the child's existing abilities.

This approach enables every child in the classroom to remain on task throughout the lesson. Since both partners have to pay attention or the lesson doesn't progress, there isn't room for anyone to check out mentally. Unlike the teacher-centred model, where only a tiny proportion

of students are thinking with purpose at any one time, here we have a whole class of student pairs thinking and working hard simultaneously.

As they've recognised the benefits of students working together, many new programmes now incorporate some form of paired learning. However, the ALfA programme has several unique features in its approach:

- Children work in pairs almost **the whole time**. While many programmes have a paired learning component for perhaps 20-30 per cent of the class time, the entire ALfA pedagogy revolves around paired learning.
- Fresh pairs are made **every day**. Rather than sitting with the same partner for weeks on end, children are rotated swiftly, which means they regularly get the chance to work with every classmate.
- Within a pair, children **swap roles frequently**. Child A, the learner, reads a line to Child B, the tutor, who corrects any mistakes they may notice and encourages them. Then, the roles reverse, with Child B reading the second line and Child A listening attentively. This fluidity of roles means that both students remain highly engaged, taking turns to read, ask questions and solve problems together.
- Pairs are made **randomly**. Some peer learning methodologies (such as PALS) always pair slower learners with stronger ones so that only the strongest students teach the weaker children. Other programmes deliberately separate children into so-called homogenous groups: the 'advanced' kids work together while there is a separate 'remedial' group. However, this type of categorisation can be harmful to students' self-confidence and morale. In contrast, ALfA's random pairing approach has unique social benefits, as we unpack in the section below.

The Advantages of 'Random' Pairing

A surprising feature of the ALfA methodology is that we pair all students into learners and tutors, without discriminating. Many teachers don't believe that every student can effectively assist others. How does it work?

Here, we'll look at the various pairing combinations and show why each leads to gains for both partners.

- *Strong tutor with any learner*: The path to progress is obvious with a strong tutor. The learner reads the passage, sometimes making mistakes, and a strong tutor will recognise their errors and help them discover the correct answer. This pairing gives the learner the devoted attention of a stronger reader. It helps the tutor because they comprehend the material more deeply when assisting someone

else. Tutor and learner grow in cooperation, patience, and other soft skills.

- *Average tutor with an average learner*: Once again, the tutor delivers the prompts, and the learner reads along, sometimes making mistakes. Even if the tutor is average, no two people make all the same errors so that the tutor will catch some of the learner's mistakes, and the learner will decipher some words the tutor would not have gotten right. If there is a disagreement, they work it out together, learning more. Occasionally, they may ask another pair or the classroom teacher for help. Studies in paired reading have shown that two readers working together progress to advanced work more quickly than either would have been able to do alone.[37]
- *Weak or average tutor with a strong learner*: In this pairing, the weaker tutor delivers the prompts, sometimes without knowing the correct answers. That works out okay because strong students can derive the solutions from the prompts and visual clues. The strong learner still gains significantly from practising the material, and the weaker tutor benefits from observing someone else read and solve problems efficiently.
- *Weak tutor with a weak learner*: This is the most challenging pairing. However, as in the 'average student' example, two vulnerable students will still decipher more together than they would have individually – two heads are better than one. If both children are too new to reading to guide each other, they may need to be split up and paired with more robust students for the first few weeks. Very soon, though, even the weakest students will learn the procedure and be able to start taking turns in the tutor role.

You can see the advantages these pairings provide for all learners. The weaker students receive more individual attention. The stronger students get cognitive gains from figuring out answers and helping others. And everyone benefits from the constant stimulus of staying engaged through the entire lesson. In addition, children proceed at their own speed, thus maximising their learning time. The strong learners complete the material as quickly as they competently can, and the weaker take as much time as they need to master each lesson.

Paired learning is key to repairing a broken, dysfunctional education system: it increases the pace, richness, focus and relevance of the learning experience.

Students who learn to work effectively with all their pairs have an advantage in future endeavours, where they will be more likely to succeed if they can utilise partnerships with a diverse range of people. The next chapter will show how the ALfA process more broadly inculcates the 'soft skills' critical to a twenty-first-century education.

How to Make Pairs

This chapter has discussed *why* paired learning is beneficial, but you may also ask *how* best to make pairs. Here are a few of our techniques for frequent, random pairing:

- **Number Chits:** Suppose there are 40 children in the class. Write numbers from 1 to 20 on separate chits twice. Shuffle the chits and distribute one per child. Now ask them to get up and move around the class until they find their partner with the same number. These two become a pair.
- **Lottery:** Ask children to write their names on chits of paper or ice cream sticks. (If a child can't write their name, their friend can help). Bring all the names to a central desk and mix them in a bowl. Have a child pull two names randomly; these two become a pair.
- **Musical Pairs:** Play a song and have students move around the class, greeting each other – for instance, with a 'namaste', high five, or handshake. The moment the music stops, each student forms a pair with the person they greeted last.

CHAPTER 5

Beyond the 3Rs: Education for the Whole Child

> *'The physical, intellectual, emotional and ethical integration of the individual into a complete person is a broad definition of the fundamental aim for education.'*[1]
>
> – "Learning to Be: The World of Education Today and Tomorrow", a 1972 UNESCO publication

We've known for over 50 years that if we want to prepare children for their future, then they need an education that goes beyond traditional academic skills. No one sits alone completing worksheets for the rest of their life. In the real world, we must collaborate with others, make principled decisions, and help develop new ideas, all requiring a broader set of competencies than just the 3 Rs (reading, writing and arithmetic). Yet many of our schools have failed to prioritise these greater life skills.

Comprehensive education has become even more crucial in the era of instant communication and constant technological change. The citizen of this age must learn new skills and adapt to new realities faster than at any previous time in history.

We need an education that develops, rather than suppresses, our students' humanity. A holistic education not only builds up academic skills but also expands social, emotional, and ethical capacities.

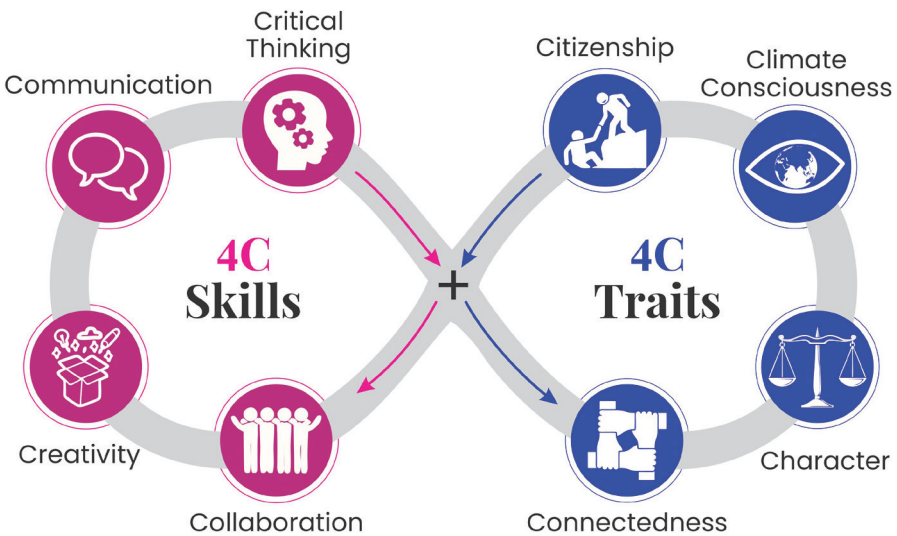
Unfortunately, our industrial education systems were not designed with 'soft skills' in mind, and thus have struggled to address them. And the pressure of test-heavy agendas, such as India's 'Inter' examinations or the USA's *No Child Left Behind Act,* has forced educators to further limit their focus to math and language proficiency that bureaucrats can measure with a standardised test.* As a result, many test-focused schools have cut back on art, music, literature, history, elective courses, and project-based learning. Austerity measures have also forced schools to drop programmes that develop our students' broader humanity.

* The USA partially abandoned the No Child Left Behind Act in 2015 in favour of a more flexible system.

However, influential voices are pushing back. In 2002, a consortium of American education and industry leaders formed the 'Partnership for 21st Century Skills.'[2] This initiative argues that focusing exclusively on simple skills was a step in the wrong direction:

> *'America's system of education was built for an economy and a society that no longer exists. In the manufacturing and agrarian economies that existed 50 years ago, it was enough to master the "Three Rs" (reading, writing, and arithmetic). In the modern "flat world", the Three Rs simply aren't enough. If today's students want to compete in this global society, they must also be proficient communicators, creators, critical thinkers, and collaborators (the "Four Cs").'*[3]
>
> – National Education Association, 2012

The '4Cs' initiative took off because it met a felt need to prepare students for contemporary society. ALfA has added four more desired outcomes (borrowed in part from the 6Cs of educator Michael Fullan)[4] to create the '4C Skills and 4C Traits' we use today:



For educators to promote these 4C Skills and 4C Traits in the classroom does not mean they will neglect literacy and numeracy. On the contrary, teachers who incorporate the 8Cs spend just as much time on math and reading as other teachers. The difference is that they'll present those basics in the context of broader life experiences instead of sterile isolation. Students then internalise the three Rs to a deeper, more meaningful degree while simultaneously gaining essential higher-order competencies.

Do the 4Cs + 4Cs Matter?

We built ALfA to empower all children with foundational literacy and numeracy—skills that open doors to all later learning. But we recognise that children also need time to think and imagine, to wonder, to learn *how* to learn and then incorporate those lessons into their other interactions. We've designed our own schools along a four-stage progression of learning: 'Joyful', 'Empowering', 'Inspiring', and 'Victorious'. The goal of each stage is not just to check off a particular list of facts learned and skills acquired, but to build up the student emotionally and socially in a manner that prepares them for life after school.

While the 8Cs have always been important, they have a new urgency today as society changes at unprecedented speed. Employees **collaborat**e in teams more than ever, and long-distance **communication** has become essential to every profession. Unfortunately, surveys show that 80 per cent of employers feel high school graduates don't have adequate communication skills, and nearly 30 per cent said even university graduates lack such skills.[5]

Flexibility and **creativity** have also become increasingly important. Remember when young people picked one career path and maintained it until retirement? That time is over. Machines are displacing various labour tasks. Family businesses are disappearing. As the global economy evolves, many roles no longer last a lifetime, forcing workers to change professions in mid-career. Even if they keep their jobs, employees are asked to retrain frequently as technological advances compel industries to adapt. Economists Richard Murnane and Frank Levy argue that technology and globalisation make **critical thinking** more essential than ever for workers.[6] Flexibility is no longer just an asset; it is an essential requirement.

At the leadership level, both educators and businesses are realising the value of **character development** as much as ever:

> *'In terms of personal capabilities, what is repeatedly identified as distinguishing the most effective professional performers and leaders is their ability:*
>
> - *to remain calm when things go wrong*
> - *to remove their ego from the situation*
> - *to 'practise what they preach.'*
> - *to demonstrate their authenticity, humility, tolerance for ambiguity, trustworthiness, transparency and commitment to fairness*

- *underpinned by resilience, curiosity, a willingness to persevere and take responsibility for their actions and a sense of perspective and humour about what is happening.*'[7]

– Educator Michael Fullan

Finland: Thriving Economy via Comprehensive Education

There's at least one country where instruction in soft skills has paid national dividends. In the last 30 years, Finland has become a global model for successful education. Its high PISA test scores, nearly 100 per cent graduation rates, and excellent record for equality are the envy of many nations. The Finnish economy is also doing well, which suggests their schools are preparing students well for the international marketplace. These excerpts from *Finland: A Non-Competitive Education for a Competitive Economy* argue that preparing students in collaboration, communication, and critical thinking has been at the centre of Finland's rise.

> *'Finland has been ranked as one of the top-performing countries in PISA for the past decade. During the same period, it has also been cited as one of the world's most competitive economies. Some of the factors that contribute to this double success include an emphasis on cooperation and networking rather than competition; education policies that favour informality, flexibility and quick decision-making; career guidance and work placements that bridge formal education and the world of work; and an emphasis on teaching skills and creativity.'*
>
> *'A key Finnish lesson is that to prepare themselves for a more competitive economy, schools and students must compete less. Instead, schools should increase internal collaboration. Cooperation and networking rather than competition and disconnectedness should lead the education policies and development of education systems. Schools and other educational institutions should cultivate attitudes, cultures and skills that are necessary in creative and collaborative learning environments. Finnish education policies assume that expert thinking, complex communication and creative problem solving can only flourish when collaboration is maximised and competition is minimised.'*

Taken from: Sahlberg, P. (2012). Finland: A Non-Competitive Education for a Competitive Economy, in Lessons from PISA for Japan. OECD Publishing. Page 103.

Business leaders see the damage when their employees, managers, and executives lack these traits. Thus, these leaders have become prominent voices advocating for 8Cs in the classroom. A survey by the Arab Human Capital Challenge showed that most CEOs in the Middle East think their educational systems do not adequately prepare graduates. They were most concerned with weaknesses in 'soft skills', including communication and teamwork.[8] In North America, 78 per cent of business executives state that communication, collaboration, creativity, and citizenship are increasingly necessary for the workplace and 80 per cent of executives believe schools should teach the 4Cs.[9] Major corporations such as Apple, Microsoft, and the Time Warner Foundation helped spearhead the original Partnership for 21st Century Skills that produced the 4Cs framework.

Traditional schooling is no longer enough. The modern economy requires a more comprehensive education than a narrow focus on the three Rs can provide.

Holistic education has an immediate impact on students as well. Lessons imbued with the 8Cs are more meaningful and motivating. Children are more excited for class when topics engage their critical thinking and delve into community issues of connectedness, climate consciousness, and citizenship. Learners enjoy communicating, collaborating, and expressing their creativity in the classroom. As Michael Fullan says, 'Students are being liberated. They care more about school. They care more about life. They care more about making a difference.'[10]

What are the 8Cs?

The 8Cs aren't just a list of things to learn but a new way of framing how students engage with each other, their teachers, and everyone else. Thus, nothing on this list should be considered a 'subject' to add to the curriculum, but more so skills and traits to soak into every lesson.

Here is a brief description of the 8Cs, why they matter, and how the ALfA classroom nourishes children's development of each one.

Communication

- *What it is:* Communication is articulating your thoughts clearly and effectively while also listening to others well. The ideal communicator gets her message across so it is understood as intended. She knows how to be persuasive without being manipulative or misleading. Communication entails both understanding and being understood, as well as learning how to build trust through interaction.

- *Why it matters:* Communicating effectively with the broader community has become much more critical to today's pupils. Even young children create digital media online via videos, websites, blogs, and AI-assisted tasks. Real-time communication in group chats and video-conferencing are indispensable to schools and workplaces.
- *How ALfA helps:* ALfA helps students build communication skills via daily paired interactions as well as writing assignments, presentations, speeches, and audiovisual multimedia projects. It's easy to visualise how paired learning engages a student's communication repertoire much more regularly than lecture instruction or working on worksheets ever could. By normalising the practice of learning together via interaction, paired learning incorporates these skills into the child's natural repertoire.

Two young children enjoy reading the ALfA Hindi book together. Lucknow Summer Literacy Intensive, 2023

Collaboration

- *What it is:* Collaboration is working productively with others. Essential collaboration competencies include brainstorming, listening, flexibility, taking responsibility, learning from others, negotiating,

developing a sense of perspective, managing a diversity of opinions, and coming to a consensus. These have always been valuable life skills, as no one gets much accomplished alone. Still, our educational models have neglected them for too long.

- *Why it matters:* Children already find collaboration skills necessary when they play with the same toys, enjoy a hobby together, compete in team sports, or are assigned group projects. If we can help our students get along with each other now, they will grow into adults who can collaborate with their coworkers, employees, supervisors, friends, neighbours, and fellow citizens.
- *How ALfA helps:* ALfA facilitates effective collaboration by priming our students to work naturally with all their classmates. The random pairing of ALfA is essential as it teaches children how to collaborate with those who have personalities, skills, and backgrounds different from their own. ALfA teachers also model collaboration by being available and approachable to their students, as the ALfA teacher role is more about working with the child than merely telling them what to do. Instructors who demonstrate good relationships with others lay the groundwork for students to build good relationships among themselves.

Creativity

- *What it is:* Creativity is doing something different from what you've been shown before. Anyone with a fresh approach to solving a problem has employed creativity.
- *Why it matters:* Creativity isn't restricted to the arts; it is fundamental to creating anything new. Children's creativity comes to the surface when they invent new games (or new ways of playing old ones), create unique class projects, and imagine new possibilities for their future. For adults it is involved in everything from product design to inventions to entrepreneurship. All of us who want to go beyond 'copying' others must employ some form of creativity.
- *How ALfA helps:* ALfA teachers develop their pupils' creativity by offering open-ended problems instead of a predetermined answer. Students creating questions for each other is an ideal setting for them to dig into their creative potential, until it becomes natural. It's impossible to 'teach' creativity via direct instruction, where a teacher always tells the student what to do. However, opportunities to foster the creative instinct are endless in an active classroom where the student has become the teacher.

An ALfA learner shows off her origami peacock.
Lucknow Summer Literacy Intensive, 2023

Critical Thinking

- *What it is:* Critical thinking involves analysing a problem, distilling the available information, and working to create a solution. Essential skills include discerning patterns, finding connections, filtering helpful information from the noise, constructing analogies between current and previous situations, and making accurate decisions when presented with several options. In addition, critical thinkers evaluate their past performance and see where they need to improve.

- *Why it matters:* Critical thinking was once taught only to 'gifted students', but today, its importance to everyone is more apparent. The online world is a minefield, full of misinformation, tricks and scams, and a young person who doesn't know how to critically evaluate what they are being exposed to can easily get lost. In the workplace, as rote labour becomes automated and assembly-line jobs disappear, employers are asking every worker to become a flexible problem solver. The complexity of modern household finances and outside programmes like health care access and government services has also made critical thinking essential in everyday life.
- *How ALfA helps:* ALfA nurtures critical thinking by requiring students to work out every step independently rather than just regurgitating answers. Decoding sounds and letters from pictures[†] is an early example of critical thinking in process. Later, complex and exciting problems like Story Sums[‡] take critical thinking to the next level. Strategy games, exciting puzzles, and classroom debates are enjoyable ways to build skills while keeping children engaged.

Character Development

- *What it is:* Character development is becoming a caring, thoughtful, and responsible person who operates ethically. It is not 'following the class rules' of what not to do, but instead practising positive traits such as kindness, generosity, forgiveness, tolerance, trust, bravery, thoughtfulness, and sustainability.
- *Why it matters:* Students should understand that moral character benefits both themselves and others. The capacity to be reflective, resilient, reliable, inquisitive and self-regulating is essential to a child's development into maturity and success in life. Especially in an era where online and political behaviour have descended into spectacle, we must help our students buck the trend.
- *How ALfA helps:* In ALfA, we demonstrate character implicitly through our modelled behaviour and class expectations. The need to work effectively in random pairings helps students consistently practise good character in various circumstances and with a broad range of classmates. We also teach it explicitly through activities and role-plays that help learners process ethical questions. Ideally,

[†] See Chapter 2

[‡] See Chapter 3

character curriculum does not form a separate unit but is incorporated into science, history, literature, and other subjects.

Scan the QR to access a set of character-development themed role-plays for new readers.

Climate Consciousness

- *What it is:* Climate awareness is an understanding of environmental issues with the motivation to act on this knowledge. It includes a scientific understanding of how our actions impact the environment and a social awareness of how to influence others and effect positive change.
- *Why it matters:* Young environmental activists from Sweden to Uganda, Bangladesh to Mexico, and the Philippines to Canada are showing the world that they too can instigate change.[11] Children are no longer content to leave their future in adult hands but want to be part of the solution to ensure a healthy planet. We must provide them with accurate knowledge and tools to become an integral part of the green movement.
- *How ALfA helps:* ALfA fosters the building of this consciousness through short stories on crucial environmental issues, activities where students research ecological problems and solutions, and creative projects that engage with the broader community. We've also embedded it within the programme via an ethic of minimal resource use and sustainability.

ALfA: A Low-Carbon Education

The ALfA programme seeks to minimise its environmental footprint by:

- Using concise booklets. Most of our languages have a 40-50 page book to take a learner from ground zero to foundational literacy. Compare this to hundreds of pages of textbooks and workbooks in many traditional curricula.
- Each booklet is shared between a pair, halving the paper requirement.
- Learning materials such as ice cream sticks and matchsticks are biodegradable and recyclable. Children are encouraged to find/make their own counters and learning materials rather than buying manufactured ones. Books and materials are robust, so students can use them repeatedly, rather than wasteful workbooks that are filled in once and thrown away.

Scan the QR to access environment-themed short stories for new readers.

Connectedness

- *What it is:* Connectedness is being emotionally connected to your feelings and those of others. It encompasses both the experience of being connected and the benefits you reap from those connections. Connectedness includes skills such as emotional intelligence, mental resilience, and empathy for others regardless of their differences.
- *Why it matters:* Students who foster connectedness feel more emotionally robust and have greater social-emotional well-being. They tend to have better attention spans, stronger problem-solving skills, and greater adaptability. They are more likely to make ethical decisions in how they treat others and consider the implications of their actions on other people.
- *How ALfA helps:* Connectedness is implemented in the ALfA programme through paired work, peer-led discussions, and communal activities that allow children to express themselves, understand others, and build relationships. Specific activities incorporated into daily lessons foster connectedness between students, such as displays of appreciation. Through the elimination of competition[§] and emphasis on collaborative learning in random pairs; students develop their solidarity with fellow students of all backgrounds. The idea is to create a family-like atmosphere of working ahead together rather than a cutthroat classroom where everyone is intent on clawing their way to the top.

Connectedness also extends to the relationships between students and adults. ALfA classrooms have positive teacher-student relationships, helping students connect with their teacher and the world around them. The ALfA classroom is an inclusive place where diversity in all its forms—including moods and learning abilities—is embraced. This environment instils a sense of belonging and acceptance among children.

Citizenship

- *What it is:* Citizenship is being aware of and engaging with your community, from neighbours to city residents to international society.

[§] See Chapter 7 on assessment for more on eliminating competition in the ALfA programme.

A responsible citizen is informed on both local and global problems. They know environmental and social issues and how their choices impact others.

- *Why it matters:* Productive citizenship helps students understand what is happening outside, from the school level up through international news. In adulthood, citizenship can extend to forming neighbourhood action groups and building people's movements. Citizens must learn the practical steps to get involved, including knowledge of processes such as attending meetings, submitting complaints, and understanding how rules are made.
- *How ALfA helps:* Through daily pairs that switch roles, ALfA students learn to take leadership in the smallest ways, in an atmosphere where even shy and disabled students are empowered. Children are regularly encouraged to make this world a better place and be part of social transformation. Educators also bring citizenship into daily work by structuring classwork problems around meaningful issues instead of random questions of no relevance. School service projects, a community garden, learning to take care of their school

After gaining foundational literacy with the ALfA programme, kids can engage with current affairs. Lucknow Summer Literacy Intensive, 2023

environment, fostering interest in local natural areas, and exposure to local community groups can all encourage the citizen instinct.

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As you've seen, there is a significant overlap between the various Cs. Though we separated their explanations for ease of introduction, these ideas have no strict boundaries. Any activity that employs one of the eight Cs will invariably include several others.

How to Incorporate the 4C Skills and 4C Traits

The perceptive teacher will realise that if they deploy the principles taught in this book, they can integrate the 8 Cs into every assignment. It doesn't always have to be a conscious effort; as you can see from the above examples, many aspects of the 4C skills and 4C traits are naturally built into the paired learning process.

You'll also see this wouldn't be true in a traditional classroom. Exposing children to meaningful life lessons is harder when education is always top-down, dictated by the teacher. Consider values like communication, collaboration, and citizenship. How can they be incorporated into a lecture when children passively listen or take notes? How would they be learned in worksheets, homework, or standardised tests?

Traditional classrooms can only incorporate the 8Cs when they introduce activities that overtly teach them. However, most teachers are so focused on completing the academic syllabus that they have little time to do anything else. Adding a dash of 'character development' or 'connectedness' to a lesson won't make much of a difference in a pupil's life, especially not when the rest of the curriculum and its competition for grades and status are at odds with such life lessons.

In ALfA, on the other hand, academic attainment comes so quickly that there is room to slow down and move beyond academics. It works out because the process is aligned with the outcome – collaborating is *natural* to how ALfA's paired learning works and creativity is *supposed* to be part of what they do when they develop their own questions in every module. It's not like a lecture where there's a disconnect between the delivery and the goal. The fabric of the learning environment, the process itself, is part of the lesson.

New dreams for our children require new vehicles to carry them. You can't modify a train and send it to the moon. If you want a starship, you've got to start from scratch and fit your craft to its goal.

When it comes to testing, you'll find that ipsative evaluation (which we'll discuss in Chapter 7) also encourages the 8Cs. Traditional comparative testing has decreased learner creativity and made students more competitive and less likely to collaborate, though studies suggest that teachers can limit the negative impact of testing if their communication of test results is informative and constructive.[12] Ipsative (compete-with-yourself) assessments take an ideal path by focusing on informative, constructive feedback without the competitive testing that depresses creativity and collaboration.

Another means to enhance the 8 Cs is via classroom structure. In the traditional classroom, desks face the front. Thus children cannot easily talk to each other or share the same workspace, which reduces student interaction. Placing children facing each other or in shared table spaces facilitates communication and collaboration.[13,14] Studies in Israel and Hong Kong also show that students who transition into Active Learning Classrooms report greater ease in being creative.[15,16] You can imagine how breaking out of the rigid confines of separated rows could inspire children to break out of their intellectual ruts.

Finally, the right teacher attitude is essential. Teachers who communicate well and are approachable in the classroom increase student engagement.[17,18] The teacher's warmth helps learners take risks, make more creative decisions, and open up with their peers. An ALfA teacher models empathetic behaviour, guides students in resolving conflicts, and introduces activities that foster emotional intelligence. But just as important as what the teacher does is what the teacher is *not* doing. By giving up control of the classroom and putting daily activities in the hands of the students, the ALfA teacher allows children to make decisions that build their personality and skills. They're not just disseminators of information but architects of an environment where each child feels seen, heard, and valued.

Above you see how the 4C Skills and 4C Traits are incorporated into the daily life of the ALfA classroom. But there are also cases in which a teacher will want to teach specific soft skills more deliberately. Would you like to see how? Here are some proposals adapted from the booklet 'Preparing 21st Century Students for a Global Society.'[19]

Project #1: Learning from History – How difficulties and impacts of past energy use can inform energy issues in our communities today

Students form groups to explore how particular societies used their natural resources for fuel (e.g., China's burning of wood in the 1500s

or England's use of coal during the 1800s). They will focus their research on those activities' economic and environmental impacts. The class will then video-conference relevant government employees to collect information about the makeup of fuel and electricity sources in their region. Students will analyse the environmental and economic implications of these current energy sources in their groups and compare them to the actions and outcomes of the previous society they studied. Each group will share their results online as a website.

This project incorporates:

- Communication
  - online interaction with government officials
  - discussions within the project group
  - use of a website to communicate ideas
- Collaboration
  - working together to research history and create the website
- Creativity
  - the design, images, and text of the website
- Critical thinking
  - analysing environmental/economic impacts
- Character development
  - seeing how our choices have repercussions
- Climate consciousness
  - impacts of past burning on pollution and climate
  - knowledge of current energy use in the community
- Connectedness
  - understanding how economic decisions impact people
- Citizenship
  - engagement with government officials
  - a deeper understanding of the local economy
  - website to engage with the community

Project #2: Learning about current events by stepping into the shoes of people with differing experiences

Student pairs research how people are impacted by a recent challenging global or national event (flood, war, famine, earthquake, etc.), with each pair focusing on a different individual's perspective. Perspectives students can use include a farmer, politician, U.N. relief worker, local journalist, family with limited resources, etc. The pairs

will create a slideshow of the event from that unique viewpoint to show to the rest of the class. After experiencing the diverse outlooks their fellow groups present, students will write a reflection discussing how various people's needs, professions, and economic status influence their understanding of a disaster.

This project incorporates:

- Communication
  - discussing a project together in a pair
  - listening carefully to other perspectives
- Collaboration
  - researching together
  - producing the slideshow
- Creativity
  - presenting slideshow
- Critical thinking
  - analysing how someone else would view the event
- Character development
  - seeing how events affect other people
- Climate consciousness
  - witnessing how natural disasters impact others
- Connectedness
  - understanding trials/needs from other perspectives
- Citizenship
  - increasing awareness of current events
  - learning more about people from different communities

Project #3: Organising a group effort to improve the school

In small groups, students will interview teachers, school cleaning staff, and other children to determine the most significant cleanliness issue in the school. The groups then create a plan for the student body to ensure the school remains clean. The process may include creating awareness via assemblies or announcements, establishing a student committee to organise volunteers, or funding proposals to acquire cleaning supplies requested by the staff. Finally, they will present these plans to the principal or the school board.

This project incorporates:

- Communication
  - interviews
  - discussion within the group

  - potential awareness drive
  - presentation to the administration
- Collaboration
  - working in the group to form a proposal
  - working with the school community
- Creativity
  - devising creative solutions to the problem
- Critical thinking
  - analysing the problem, finding solutions
- Character development
  - taking responsibility for a school issue
- Climate Awareness
  - being proactive in a small trash reduction task
- Connectedness
  - empathy for cleaning staff
- Citizenship
  - awareness of how others view a school issue
  - bringing an issue to the larger community
  - presenting a proposal to authorities

You can find many other great ideas online for incorporating 8C principles into your lessons.

Projects need not always be as extensive as these examples. Still, the more time you give to a project, the better opportunity your students will have to use 8 Cs skills. It is best to find a balance between small-scale applications of the 8 Cs in everyday assignments and occasionally allowing students to explore at a deeper level.

***

Humanity stands at a crossroads in history.

We are wealthier, more interconnected, and more technologically advanced than ever. We have the power to end poverty: If we distribute the world's resources fairly, nobody would go to bed hungry. We have the science to unlock tremendous amounts of clean energy, create vaccines and treatments for most diseases, and reduce labourers' workloads more than ever.

At the same time, interlocking environmental crises—including climate change, deforestation, and biodiversity loss—are no longer distant threats but already devastating millions of lives. New threats of the twentieth and twenty-first centuries—nuclear war, pandemics, artificial

intelligence—pose existential risks to humanity. Some researchers have estimated a one in six chance of humanity becoming extinct over the next century.[20]

What does the future hold for humanity? A shared peace and prosperity? Or a dystopia of disease, disaster and death? The choice is ours.

In this critical juncture, we need to raise the next generation who are not just 'smart' academically but also good human beings. Humans who care not just for their family and friends but for their country and their world. Humans who can think creatively and critically and who can collaborate to solve common problems.

We need a twenty-first-century education that isn't just a tinkered version of the nineteenth-century pedagogy that hampers our schools. Twenty-first-century education changes everything. For some teachers, that might intimidate them—we are not advocating one minor adjustment; we're discussing changes across the board. But for many teachers, this inspires. Haven't you always wanted something *more* than what you've been working for so far? Don't you see that your children want to reach for something more as well?

We dream that teachers can be galvanisers for their children, facilitating a new way of learning. In the next section, we'll show how you, the teacher, can make this happen.

Part B

PRACTICE

Part A introduced ALfA's pedagogy. But if you're a teacher reading this, you're probably buzzing with unanswered questions on how you can practise this methodology inside the classroom. This section is for you!

Chapter 6 unpacks how the teacher's role in ALfA is dramatically different from the traditional classroom. Instead of lecturing students, you'll serve as a galvaniser: pairing children, demonstrating activities, asking questions and much more.

In Chapter 7, we explore the ALfA assessment process, which removes competition and high-stakes stress from the experience to focus on the more important factor: what kind of exam helps students understand more of what they're learning?

Chapter 8 shares five simple activities the interested teacher can try out in her class today.

Finally, Chapter 9 addresses the most challenging questions people have posed about ALfA—from how pairing works with young children to whether ALfA can be integrated within a busy school timetable.

CHAPTER 6

Teachers: Igniting a Spark

'I suspect that we teachers spend too much of our most precious commodity—time—on creating presentations for students to hear and writing exposition for them to read. I think we serve our students' learning much better by investing our time into crafting good questions that lead students to develop and deepen their understanding of what we want them to learn.'[1]

– Dr Allan Rossman

'The good teacher explains. The superior teacher demonstrates. The great teacher inspires.'[2]

– William Arthur Ward

'The first principle of true teaching is that nothing can be taught. The teacher is not an instructor or taskmaster, he is a helper and a guide. His business is to suggest and not to impose. He does not actually train the pupil's mind; he only shows him how to perfect his instruments of knowledge and helps and encourages him in the process. He does not impart knowledge to him; he shows him how to acquire knowledge for himself.'[3]

– Sri Aurobindo

So far, this book has set out an exciting vision of what pupils do in an ALfA classroom. Students work in pairs, ask each other questions, and engage in fun and meaningful activities. They take initiative and responsibility for their learning.

But where does the teacher fit into this vision? If the classroom is student-led and student-centred, does that mean the teacher is no longer needed? On the contrary, just as the ALfA student is more active than the traditional student, the ALfA teacher is also more active than the traditional teacher.

We may not have noticed the traditional teacher's passivity because we associate activity with talking, and conventional teachers talk a lot. But

their delivery is cognitively stale: they repeat the same lecture over and over across all their different classes; section after section, year after year. In this context, Stephen Covey's famous quote makes much sense:

> *'Experience is overrated. Some people say they have twenty years' experience, when, in reality, they only have one year's experience, repeated twenty times.'*[4]

It's not the teacher's fault. In many countries, instructors have little autonomy – they must follow the curriculum to the letter and are given detailed prescriptions for what to do every period of every day. Much as the traditional system stifles children's creativity, so too are teachers left feeling like cogs in a machine.

The essential roles of the traditional teacher are all mechanical – reading from the textbook, writing on the board, marking children's homework, and enforcing discipline. They keep her busy but lack fulfilment and meaning. If students are 'products' in the industrial education system, then teachers have been reduced to machines in the production line.

ALfA is different. In an ALfA classroom, every lesson is different as the teacher responds to students dynamically. She is a galvaniser and motivator, less concerned with perfecting her performance than bringing out the best in her learners. The ALfA teacher stays in tune with what matters to children and joins them in the excitement of exploring new learning. Where industrial education represses each teacher's spark, ALfA ignites their passion.

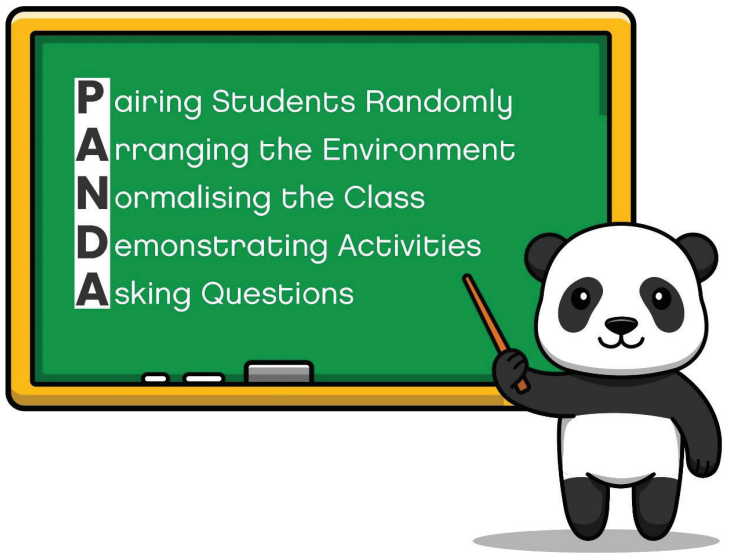
This new paradigm for a teacher's role may sound complicated, but in practice, it is intuitive. Children are curious, thirsty for knowledge and keen to understand their world. When given the right conditions, students build intrinsic motivation and their learning flourishes. Teachers need only to encourage that development rather than interrupt it.

The PANDA Teacher

What does this mean in practice? The ALfA teacher no longer spends much time performing the traditional duties – lecturing students, writing answers for them to copy, or marking homework. Instead, they have five vital roles to play in their student's learning journey:

- Pairing Students Randomly
- Arranging the Environment
- Normalising the Class
- Demonstrating Activities
- Asking Questions

When you're wondering what roles you have to play in an ALfA class, remember that word: PANDA. And your children's learning will grow as quickly as the bamboo this cuddly giant feeds upon!



The Five Key Roles of an ALfA Teacher

Pairing Students Randomly

As we saw in Chapter 4, ALfA draws on a long and illustrious history of peer learning. Many other programmes use peer learning to various extents, but in ALfA, paired learning becomes the dominant modality through which every lesson is digested.

The other unique feature of pairing in ALfA is that it is random, with fresh pairs made daily. This process has many benefits:

- Students learn the most when exposed to diverse partners. Different children have unique styles and insights, so each brings their partner a particular benefit. Also, learners gain more when they can sometimes work with someone more skilled than themselves and other times have the opportunity to explain the material to a classmate at a lower level.
- A rotation that allows all children to take turns with each other will reduce cliques and favouritism. Random pairing means that the best-performing students aren't always matched together and that unpopular or marginalised children aren't the odd ones out. Unlike systems that deliberately pair 'strong' with 'weak' learners, no one feels judged here.

- The diversity of partners facilitates communication, collaboration, and character development.[5] It helps learners with arrogant or standoffish tendencies to be more accommodating and humbler. It assists those with an inclination towards shyness to become capable of expressing themselves. Students who spend time working together learn to see each other as whole persons—even if they are of different backgrounds or have learning disabilities.

Arranging the Environment

Unlike a traditional classroom, where every desk is oriented towards the teacher, the ALfA classroom should be set up so that it is easy for learners to interact with each other. Teachers can achieve this by having desks face each other, seating multiple children around large desks, or using floor mats.

Children studying literacy together in an ALfA classroom. The lack of chairs is no limitation; in fact, it can allow for more flexible use of classroom space

An ALfA classroom must be conducive to movement. Students should be able to get up, change positions, put their chairs together, and work in different pairs as conveniently as possible. While children can make do with chair-attached desks, it is better to have detached chairs that enable them to adjust seating. There should be space between different groups to free up movement so learning pairs don't disturb each other with their activity.

You must also ensure that students can access resources. For example, when working with younger children, learning pairs should be able

to reach workbooks and game pieces. Teachers responsible for older children will fill the room with reference materials (including technology if appropriate) that they can look up on their own. Anything that helps the students operate independently will streamline the learning experience.

Teachers may also ask children to bring appropriate materials from home—or even gather creative counters from the schoolyard! The teacher can trigger children's imagination with suggestions but leave plenty of scope for their own ideas as they decide what materials will facilitate their activity.

ALfA students using leaves and flowers to represent three-digit numbers

Normalising the Class

When you first introduce ALfA to your students, they will have been accustomed to the traditional classroom, where they were passive learners forced to compete against each other for marks and the teacher's attention. As you embark on your ALfA journey, you'll need to draw your pupil's

attention to the 'new norms' of the class: working in pairs, taking turns leading, and asking each other questions.

This process can start when forming classroom rules at the beginning of the year. Many traditional teachers dictate a set of 'ground rules' for the class. This process can be helpful, but we suggest that students play a more active role. You may ask them: 'What rules do you think we should have in our class?'

Suppose you work together with your students to collectively come up with a set of protocols, such as:

- We will put items back where they belong
- We will take turns with each other
- We will do our best to help each other
- We will speak respectfully to each other

Now, you can ask students to explain in their own words why each rule is important. The goal is to instil a sense of collective ownership and responsibility for the classroom social environment.

As you go through the school year, it's important to remember to embed ALfA principles at every stage along the way. This will enable students to understand the approach quickly and see your integrity in applying it consistently in all you do.

Demonstrating Activities

Children in an ALfA class spend most of their time working together in pairs, doing activities, and asking each other questions. However, many lessons require a short demonstration from the front so that children know what they are doing. We'll show this more explicitly at the end of this chapter.

Of all the roles of an ALfA teacher, this one looks most similar to that of a traditional teacher. She is at the front of the classroom, doing most of the talking, with all the children paying attention to her. But there are several critical points of difference to note:

- The traditional teacher *explains* a lot, but the ALfA teacher *demonstrates*, using fewer words and more actions.
- The traditional teacher explains *alone*, whereas the ALfA teacher does a role play with a child so that the students know what they must do in *pairs*.
- The traditional teacher focuses on the class getting the correct *answer*. In contrast, the ALfA teacher focuses on the class understanding the *process*.

When demonstrating activities, the ALfA teacher must maintain a tension between explaining the process well, but also giving students enough time to work on the real meat of the lesson on their own. Remember, you're not teaching them everything, you're only getting them started! So make sure you *help them enough* that they can proceed competently with understanding, but *release them enough* that they still do most of the work on their own with their partner.

Asking Questions

The traditional teacher's job is to give answers. The ALfA teacher's job is to ask questions.

Many teachers aim to transmit information directly, sometimes as if by force.[6] However, research shows that direct transmission doesn't reflect how our brains learn.[7] The mind is not a blank slate to be written on; instead, it's an active network of existing knowledge and experiences upon which new knowledge can be built. If a teacher verbally dumps information on her students without connecting it to practical, lived experience, it will not assimilate nearly as well.

The ALfA teacher asks meaningful questions that allow learners to use their existing knowledge. That is what makes class interactive, engaging, and memorable. Then, via paired learning, children adopt the question-asking role for each other. That frees the teacher to observe each pair at work around the room. He can monitor student understanding to see which pairs need help while the others continue working. This process differs significantly from the traditional setting, where lecture activity must stop, and all other children are forced to watch and wait every time a teacher interacts with a particular child.

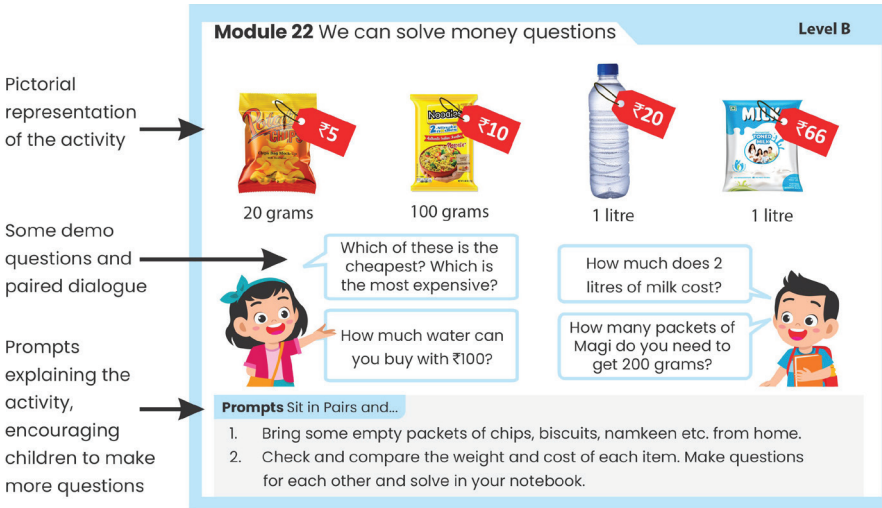
Now, Let's Look at the 5-Step ALfA Lesson

Much as the ALfA book progresses from simple to complex concepts, the micro-structure of each lesson develops from straightforward to more advanced activities.

We'll unpack the five steps of an ALfA lesson using a sample module on two-digit subtraction.

Step 1: Teacher-Child Demonstration

The first step of an ALfA class is to demonstrate the activity that the children will be doing. Randomly select a child to come forward to help you, and then begin the demonstration. Take it nice and slow. Announce what you are doing each step of the way, and ask the whole class simple



Sample ALfA numeracy module

questions, interspersed with affirmations, to ensure that they are following along.

Start by reading the word problem, for instance:

'Aliya had 52 rupees. After she spends 16 rupees, how much will she have left?'

- Teacher: 'So, I need to count out 52 to represent Aliya's money. How many ice cream sticks do I need for 52?'
  Class: 'Five'
- Teacher: 'Great' (gets out 5 ice cream sticks and shows them to the class). 'And how many matchsticks do I need?'
  Class: 'Two'
- Teacher: 'Perfect.' (gets out 2 matchsticks) 'Now I need to take away 16. How many matchsticks are there in 16?'
  Class: 'Six'
- Teacher: 'I had 2 matchsticks. So, can I take away 6?'
  Class: 'No.'
- Teacher: 'Right. I'll have to exchange one of my ice cream sticks for more matchsticks. How many matchsticks will I get from the bank in exchange for my ice cream stick?'
  Class: 'Ten.'
- Teacher: 'Great job.' (Puts down one ice cream stick and, in return, picks up ten matchsticks)
  'I had two matchsticks earlier, and now I've got ten more. So how many do I have in total?'

Class: 'Twelve.'

- Teacher: 'OK. So now I can take away six.' (Gives six matchsticks to the child with you) 'How many will I be left with?'
  Class: 'Six matchsticks'
- Teacher: 'Excellent. I had five ice cream sticks earlier, but now I've exchanged one, so how many do I have left now?'
  Class: 'Four.'
- Teacher: 'Now, we were taking away 16, so I can take away one more.' (Gives one ice cream stick to the child helping) 'How many will I be left with?'
  Class: 'Three ice cream sticks.'
- Teacher: 'Right. I've got three ice-cream sticks and six matchsticks. What number does that make?'
  Class: 'Thirty-six.'
- Teacher: 'Well done, everyone!'

The focus of the demonstration is not so much on getting the *correct answer* but rather on following the proper *process*. A traditional classroom might start with the teacher explaining a formula or process by writing on the board, but demonstration is much more effective. The children are *hearing* your description and *seeing* you follow the proper procedure. Asking questions throughout makes it more likely that they pay close attention.

Step 2: Child-Child Demonstration

If the emphasis of the first demonstration was on following the proper mathematical process, then the second demonstration focuses on the paired nature of the activity.

Randomly draw two name chits to call two children forward. Give them another question to work through in front of the whole class, while you quietly observe. Sometimes, children will follow their peers' demonstrations more closely than yours.

The two children you randomly selected to come forward may make some errors – for instance, subtracting the ice cream sticks first or forgetting to put back an ice cream stick when they are drawing ten matchsticks. Errors are great learning opportunities! Don't rush in to correct the pair; ask the rest of the class to see if they can spot it and help.

Step 3: Paired Work

After these two demonstrations, it's time to engage the whole class actively in paired work. Give two or three questions (for instance, those given

in the prompts) for each pair to work on solving using their hands-on materials, using the same process they just observed.

Initially, you might quietly roam the class to see how they are doing. However, don't be too quick to offer help if a particular pair is struggling. Instead, suggest they ask the help of a neighbouring pair. In doing so, the other pair gets the chance to deepen their understanding through teaching. This process also builds social bonds and develops communication and collaboration skills.

Ideally, as the class grows used to paired work, you won't need to roam the class anymore. Instead, you can sit quietly to observe or take photos and videos of the activity to add to your portfolio and document the class progress.

Once pairs are comfortable solving this type of question using their *concrete* materials, it's time for *abstract* representation, that is, in writing. To do this, you'll need to temporarily return to Step 1 for another demonstration. Draw a giant ice cream stick on the left side of the board and a matchstick on the right. Use the question you demonstrated earlier, which the class will still be familiar with, and this time solve it using writing.

The process will go something like this:

- Remind the class of the original problem (52-16).
- Ask them how many tens and how many ones in 52. Write '5' on the tens side and '2' on the ones side.
- Similarly, write '16' underneath: 1 on the tens side and 6 on the ones side.
- Gesturing to the ones side of the board, ask the class, 'Since I can't take away 6 from 2, what will I have to do?' They will respond, 'Exchange one ice cream stick for ten matchsticks.'
- Ask, 'How many matchsticks will I have now?' (12) Write a '1' before the '2' to make '12'.
- Ask 'How many ice cream sticks do I have now?' (4)
- In the tens column, cross out the 5 and write 4 instead.
- Gesturing to the one's column, ask, 'Now I'm taking 6 away from 12. How many will I have left?' (6)
- Gesturing to the tens column, ask, 'Now I'm taking 1 away from 4. How many will I have left?' (3)
- Ask: 'What's the total number remaining?' The class responds: 36.

As the children follow along, they start making cognitive connections between the concrete manipulations of ice cream sticks & matchsticks and

the abstract process of carrying (crossing out the 5 tens and writing 4; writing 1 in front of the 2 ones to make 12).

You can now let the learners return to paired work and give them questions to solve both in writing and using concrete objects. A neat way to do this is for Child A to solve a problem using their ice cream sticks and matchsticks, while Child B follows along and solves in writing. Then, for the next question, they swap roles.

Step 4: New Questions

Conventional textbooks and workbooks often give lots of practise problems for children to solve. Practise is indeed essential for mastery. So why do the ALfA books only give 3 or 4 practise questions?

It's because, in Step 4, the children go beyond what's given in the book and start making questions for each other.

It is well known that young children ask a lot of questions—a recent UK study suggested an average of 73 per day![8] Sadly, the traditional education system often stifles children's curiosity, leading to a drop in the quantity and quality of questions. Contrast the 5-year-old's question 'What is the biggest number?' with the 15-year-old's query 'What questions are most likely to come on the exam?'

Children making questions to ask each other is baked into the ALfA process. This approach has many advantages:

- Making up questions helps develop children's creativity and critical thinking.
- Children often feel more motivated to try solving questions given by their partner rather than those provided by a textbook.
- Children enjoy challenging their peers and might ask tricky questions to stretch their partner.
- Control of error is built into the process: kids check each other's work. If they disagree on an answer, they discuss it and might ask another pair their opinion. The process forges collaboration and communication skills.

One story illustrates how much children enjoy posing tricky questions for their peers. In a module on fractions, we started by folding a paper into four parts and colouring one quarter to show what a quarter means. Soon, we posed questions for kids to solve in pairs (Step 3), like 'Colour two-thirds of your paper' or 'Colour three-eighths.' But the children were up and running once we got to Step 4. We saw one girl use a ruler to carefully

divide her paper into a 16×24 grid before colouring in 37 rectangles and asking her partner, 'What fraction does this represent?' (37 / 384)!

In early lessons, children can pose verbal questions to their partner—ideally as word problems. In later modules, as their writing skills improve, children can write a few questions on chits of paper for their partner to select from and solve.

Step 5: Homework, Feedback and Gap-Filling

The ALfA process is so effective within the classroom that there's not much need for homework. We also don't want teachers to be overburdened by repeatedly giving homework and needing to mark it.

However, we can extend Step 4 to homework as well. Of the questions children write for each other, they can designate a few as homework. The next day, when the pair returns, they can check each other's homework before going into their new pairs. This process further develops children's creativity and critical thinking as they make and solve each other's questions, averts teachers' need to check a mountain of monotonous worksheets.

However, it is still essential for the teacher to maintain a feel on the pulse of the class – what proportion of students have developed the relevant competencies and which specific topics have proven the most challenging. To gather this information, the teacher needs to take periodic feedback from the class.

In a traditional classroom, most information flows from the teacher to the students (as a lecture). When the teacher occasionally stops to take feedback, it is often by asking a question and telling those who know the answer to raise their hand. She then selects one of the kids who raised their hands to answer.

However, there are several drawbacks to this method of taking feedback:

- The teacher may not get an accurate sense of how many students know the answer. Some kids who don't raise their hands may know the answer but are shy or don't want to be singled out. Conversely, some kids who think they know the answer may not actually.
- The rest of the class—both those who raised their hands and those who didn't—is passive while a single child answers.
- When choosing a child to answer, avoiding the perception of favouritism is difficult. Students may think, 'Why bother? The teacher never picks me to answer.'

So, what's the alternative? We can transform the process of taking feedback from a dry, non-participatory and potentially stressful experience into a fun, formative quiz that gives reasonable insight into the class learning levels. Here's how it works:

1. Make a simple multiple-choice quiz covering key concepts/competencies from the latest lesson or two. Remind children that it's just a game; it doesn't matter who gets right or wrong answers.
2. Write the first question and its options on the board (or describe them orally).
3. Give everyone appropriate time to think and solve (in writing, if possible). Alternatively, you can invite children to discuss it with their partner and solve it together.
4. Ask children to vote for their answer. There are several ways to do this.
   (a) You could say, 'Everyone who thinks option A, stand up,' then, after doing a quick headcount, 'Thanks, please sit down. Now everyone who thinks option B, stand up,' and so on. This technique is fun, quick and easy, but sometimes kids will vote with the crowd or follow their friends.
   (b) Ask children to write their answers in large font on a slate or paper. Have everyone hold their answer up to reveal simultaneously, and take a quick count of how many got it right.
5. Repeat Steps 2–4 for other questions on your quiz.

The aim of quizzes is to gain instant feedback on the class learning levels. But it is not data collection for the sake of data collection; rather, it enables swift action to remedy any learning gaps. Consider three scenarios:

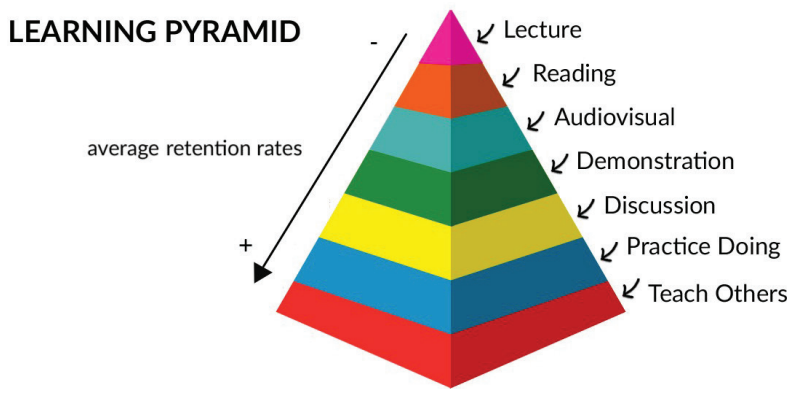
- **Students do very well** (e.g. > 90 per cent). We can move on to the subsequent modules.
- **Students do pretty well** (e.g. 60–90 per cent). Make fresh pairs. This time, be deliberate in ensuring that children still struggling with a topic sit with those who have mastered it. Repeat Steps 3 and 4: they work in pairs and make questions for each other to solve.
- **Students aren't doing well yet** (e.g. < 60 per cent). If most of the class struggles with a concept, repeat Step 1: a demonstration. You may want to try a different activity or approach to the same competency. For instance, if children struggle with using ice cream sticks and matchsticks to understand 2-digit numbers, try clapping and snapping instead.

Scan the QR to check out a video showcasing the five steps of an ALfA lesson.

To recap, the five steps of an ALfA lesson are:

1. Teacher-child demonstration
2. Child-child demonstration
3. Paired work on set questions
4. Pairs make new questions for each other
5. Homework, feedback & gap-filling

Let's reflect on the five-part lesson through the 'learning pyramid' lens.



The highest rungs, representing the least effective learning strategies—listening to a lecture or being given a reading to do alone—are not used at all in ALfA. Instead, the first two steps of the ALfA lesson focus on demonstration, which is in the middle of the pyramid. The third step could be considered 'practise by doing', and the fourth and fifth steps involve 'teaching others', with the children making questions for each other to solve in the class and for homework. See how quickly the ALfA lesson progresses to the pyramid's lower rungs and spends substantial time there!

Taking Questions Deeper

As discussed above, a crucial role of the ALfA teacher is to ask questions and encourage students to ask questions of each other. In the early stages of math and reading, we ask simple questions for which there is only one desired answer (e.g., 'What is this picture?' and 'What is its first sound?' or 'What do you get when you subtract 2 from 5?'). However, the teacher's role will evolve once the learner moves beyond mere decoding. The goal is no longer to extract the 'right answer' but to get students thinking, developing their questions, and doing independent research. Once learners consider the material independently, their personal, reflective responses will be more meaningful than the canned answers they were conditioned to produce in the traditional classroom.

How does a teacher encourage students to explore problems for themselves? One approach is to use 'Why?' questions instead of the stale 'Where? What? When?' typical of rote memorisation testing. Look at this example and consider the contrast in responses that these two inquiries would generate.

Rote question: '*What river goes through the city of Shanghai?*'
Deeper question: '*Why does Shanghai lie on a river?*'

The first question is just a memory test. The second option propels children to do more meaningful research. Suppose they discover Shanghai was built on a river because it facilitates travel routes, improves fishing access, and provides a convenient water source for agriculture. Those answers may lead the child to consider further questions, such as '*Does that mean other cities were built on rivers for the same reason?*' '*Which of those reasons apply to the large cities on the coastline?*' and '*How did my city come to be in its location?*' You can see the contrast from the original prompt of 'What river?' which has no natural follow-up once answered. The 'Why?' questions open many more avenues of thought.

CMS Teachers' Experience of ALfA

I (Sunita) am chief academic advisor at City Montessori School—the world's largest school, and a recipient of the UNESCO peace prize.[*] Some CMS campuses started using the ALfA programme in 2023, and found it to be highly effective and engaging. Here is what some of the teachers had to say:[†]

'The very essence of learning through ALfA Classes is PAIRED LEARNING. When sitting in randomly created pairs, the passive student also becomes an Active Learner. In this process unknowingly, students help each other and learn to develop the 21st century skills. It also leads to higher student attendance and engagement throughout the day. It helps children to collaborate with their partners, mend their ways of communicating. It helps learners to understand the virtue of empathy, compassion and working as a team. They become independent and confident citizens.'

– Swati Grade, 2A, Station Road

'I am very satisfied by seeing improvement and remarkable confidence level in my students' overall skill development. And all the credit goes to the initiative led by the school for providing the opportunity of ALfA classes. It has made children revise their basics and helped them to get their base stronger, the activities performed in the classes excite students to learn, it provides a fun and friendly environment for the children and this helps them in their overall personality and skill development. Also the Alfa classes are encouraging the students for teamwork. The work of the teacher as a galvanizer has helped children to think and work on their own, the children learn efficiently now. Previously two children (Aizah Ahmad and Om Kesarwani) who were especially not doing well in reading have now became good readers by the ALfA literary method of reading.'

– Firdaus Abbasi, Grade 2B, Station Road

'ALfA is a student-led teaching-learning platform where in students actively participate in teaching-learning process. Children have started taking initiative to participate in various class activities the instructional ways to guide children to acquire, understand, and apply new information

[*] Guinness World Records (2023). World's Largest School by Number of Pupils. https://www.guinnessworldrecords.com/world-records/largest-school-by-pupils

[†] As reported in an online feedback form filled out in November 2023.

and skills that will help them in their studies and their lives. The collaborative activities via pair learning have developed confidence in them and have motivated them to express themselves in front of others especially the introvert and slow learners.'

– Tayyaba Fatima, Grade 2A & 2B, Anand Nagar

'ALfA has been a transformative approach that has significantly improved the learning experience and overall well-being of both students and myself as a teacher. Shy and special needs children now actively participate, 'low' performers have shown remarkable progress, and hyperactive students are more focused. There's a noticeable improvement in the quality of work, understanding, and writing. Comparing this year to previous ones, ALfA has accelerated learning and enriched the educational experience. Additionally, it has had a positive impact on the social development of students, fostering empathy and teamwork. Personally, I find great satisfaction in this approach, with reduced correction work, increased creativity, and a sense of accomplishment. ALfA is a model I wholeheartedly endorse for the educational community.'

– Moushumi Sengupta, Grade 3F, Gomti Nagar Extension

A capable teacher in the ALfA curriculum will work 'Why?' questions into the framework of every lesson, as well as ask such questions spontaneously when the opportunity arises. Prompts like, '*Why might the author have made that plot choice?*' or '*Why is that country's clothing so much more colourful than others?*' make the day more exciting and keep children's minds engaged. And open-ended questions can lead to research projects that students work on over many days or weeks.

Some traditional teachers seek to demonstrate their expertise by knowing all the answers. In contrast, the ALfA teacher does well to adopt the Socratic approach—asking questions as if from a position of ignorance to elicit our students to think more deeply and explain themselves more cogently.

Scan the QR codes to hear teachers' experiences with the ALfA programme.

Government school teachers, Unnao district

City Montessori School, Lucknow

Conclusion

Many teachers are skilled experts in their subject, but that has little impact on whether they can teach well. We have all had brilliant instructors (like Professor Viru 'Virus' Sahastrabuddhi in *Three Idiots*) who failed to connect with their students due to their teaching style or demeanour. Our children don't need experts impressed with their knowledge; they need galvanisers who help students discover new knowledge themselves.[9]

The roles of the ALfA teacher—from making pairs to normalising the class, from asking questions to encouraging students—are ultimately much more meaningful and fulfilling than the traditional teacher, who merely writes on the board and checks homework. The ALfA teacher serves simultaneously as a friend, role model and inspiration. But they are no longer the focus of the class, which has been placed squarely on the students. They just help those students to fly.

CHAPTER 7

From Degrading Grades to Inspirational Ipsative

'Your grades are not your destiny: They're just letters and numbers which rate how well you performed in one artificial arena, once.'

– Charlie Brooker[1]

Think back to when you were a child. Recall the atmosphere around the testing season. How did you spend your time in the weeks leading up to your tests? How did you feel waiting for the score in the following days? Did you care about the life relevance of the material you were learning, or were you more worried about how your marks would stack up against other children? How much of your energy during the year was spent preparing for tests, taking tests, and agonising afterwards?

Do we test more than we teach? India's Academic Year*

- April: School Admissions. Children as young as three take tests to enter kindergarten. Only a few weeks of schooling.
- May-June: Summer Holidays
- June: School term starts back. Many private schools have weekly tests
- July: Quarterly exams
- September: Half-yearly exams
- December: Winter Holidays
- January: 'Pre-board' exams
- Feb-March: Board exams. These last several weeks, with a few weeks of build-up devoted to 'revision', which often amounts to cramming

* Varies to some extent state-to-state

If you're reading this book, chances are you performed well on exams. So, expand your recollections to consider how other students felt during this time. Were some children stressed out because they thought they would underperform? Were others tense and worried even though they

would likely do fine? Did you have classmates who had given up on getting a decent result?

Now fast forward to the current education system, and ask yourself – are today's children forced to spend more time testing than you did? And is this a good or a bad thing?

Tests are the centrepiece of traditional education. In recent decades, certain countries have begun to revolve their schooling system around achieving standardised test scores. Other countries had already been doing this for almost a century.

The call for higher standards in education is understandable. But when tests become the goal of teaching rather than a tool, their true purpose—to inform and guide future learning—is lost. Instead, learning becomes merely a tactic to achieve good grades. This is a classic case of putting the cart before the horse!

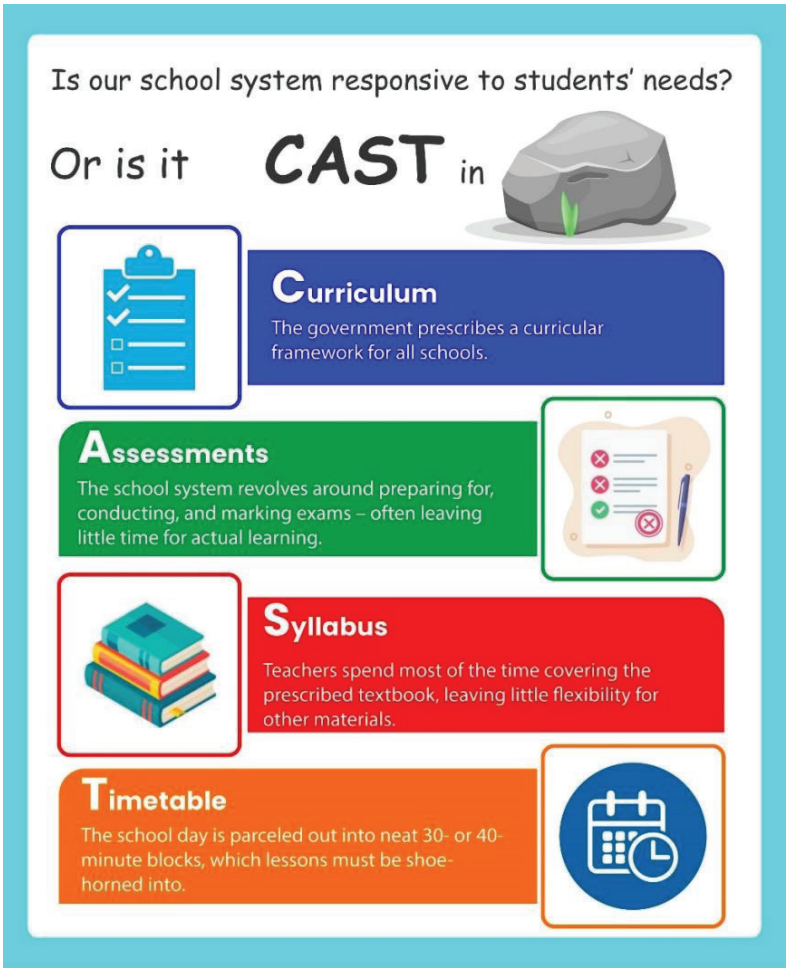
The school system is rigid, with everyone taking the same exams on the same fixed dates. This rigidity ignores the natural variation in learning rates. If a child needs an extra week (or month) to learn the material, the looming gap in their education is ignored. Any material that student fails to understand by the test date is tossed aside, and the child forgets about it to move on to studying for the next set of tests. Exciting subjects and projects not covered by the test are also sidelined. Meanwhile, most fast learners, who are able to pick up more than the test will cover, are usually reluctant to move on to other interests, afraid that if they study anything other than what's on the test, they might forget test material and thus score a couple of points lower.

Students' needs are subservient to the system's rules. Indeed, Curriculum, Assessments, Syllabus and Timetable form a CAST, binding students and teachers to follow constraints they never choose.

The excessive focus on grades fundamentally degrades education, forcing children to compete against each other. Such competition can strip away many of the positive lessons and habits that you've been learning about in the first six chapters. That's why the ALfA programme uses ipsative assessments, in which students 'compete with themselves', tracking their own progress over time. This chapter will guide you in a new kind of testing that enhances real learning rather than misdirecting it.

Are Exams Failing Our Students?

The school system's focus on comparative evaluation can drive youth to extreme responses.



India is notorious for student deaths during the testing season.[2] In 2019, a software error by an Indian test-scoring company sent out inaccurate 'fail' results that led to twenty students killing themselves.[3] Such students are often pressured by their parents, who are so desperate for their children to score well on tests that they will go to absurd lengths to help them succeed. In one notorious 2015 incident, hundreds of relatives were seen scaling the wall of an exam centre to pass 'answer chits' to their children inside.[4]

It is not just India: the consequences of high-stakes testing are felt worldwide. In South Korea, nearly one in three students have had suicidal thoughts due to their academic burdens.[5] England reports that teenage suicide has become an epidemic during exam season, with nearly half of suicides occurring among youths who had a test upcoming or had just

Class 12 Student Ends Life in Lucknow After being Scolded by Mother

A Class 12 student died allegedly by suicide after being scolded by her mother for waking up late in the morning and not studying in Lucknow. Police have sent the body for a post-mortem.

The deceased, identified as Sanskriti Singh, was yet to write her board exams. Reportedly, Sanskriti woke up late in the morning, due to which her mother reprimanded her.

Upset over her mother's scolding, she went to her room and closed the door. It was when she didn't come out of the room for long, even after knocking, the door was broken with the help of the neighbours. And it was found that Sanskriti had ended her life.

Srivastava, A. (2023, 1 August). 'Class 12 student ends life in Lucknow after being scolded by mother.' *India Today*.

received the result.[6] In the USA, suicides among middle-school students (7th and 8th Class) jumped when a new federal policy emphasised high-stakes testing.[7]

A defender of the traditional education system might argue that only a small proportion of young people take their lives, and the majority of students are fine. However, the evidence suggests that exams damage many students in less visible ways.

One central concern is competition. Schools have taught students to view their grades as comparative ranks. As a result, children forget the reason for learning and only look at how their score compares to others. The greatest insult comes when teachers use norm referencing ('grading on a curve'). This suggests to the child that the teacher doesn't care what specific things they understand, only whether they can do better than their peers. The focus on competitive performance discourages learners from cooperating and minimises positive social interaction in class. It can also sap intrinsic motivation, which reduces comprehension and retention.[8,9,10,11]

A second issue with exams is that many children define themselves by the results. Students who perform worse than their peers believe they're stupid and give up. The impact can be particularly harmful in school systems that implement 'tracking' or 'remedial education', the practice of grouping learners into different classes based on their earlier test performance. Separated from their more privileged peers, the children in the lower track become trapped, unable to reach for the same life goals offered to students in the 'high-achieving track'.

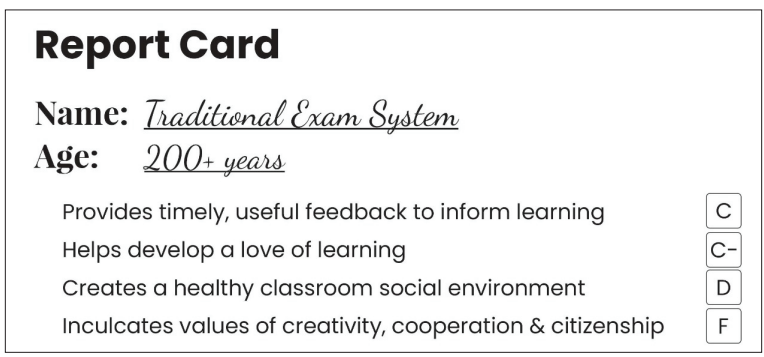
Even the highest scorers will sometimes internalise results in an unhelpful manner. These children become wrapped up in their identity as a topper and lose sight of mastering the material for its own sake. In many cases, they're afraid of dropping from their position and thus choose more accessible work that allows them to maintain their average. High scorers may avoid interesting but challenging courses.[12] In this way, even good marks can distract from the greater goal of stretching students in their learning.

Carol Dweck's groundbreaking book *Mindset* notes that simply telling students test scores often reinforces a 'fixed mindset'. In contrast, more specific feedback, prompting reflection on what has been learned and the next steps, can foster a 'growth mindset'.[13]

The third issue with mainstream evaluations is their focus on summative scores. For instance, when a student receives an 82 per cent score in their English course, that number represents the average of numerous tasks: reading comprehension, literature discussion, grammar competency, essay writing, classroom presentations, etc. How does a score compiled from many disparate sources tell the child anything useful about their learning achievement? The goal of assessment should be to identify areas for improvement, but grades combine everything into a single number and thus have limited use in helping the learner improve.[14,15]

Imagine that a school nurse measures a boy and finds him to be 160 cm tall and weighing 40 kg. But instead of telling him his height and weight, the nurse averages the two together and gives him a score of 100. The unitless, abstract number is useless for him. He can't use it to check his growth or plan his diet. In much the same way, the average score given in an exam tells a student little about their strong suits and potential areas for improvement.

Overall, when we put traditional exams to the test, there is considerable room for improvement!



Given the cost of exams—wasted learning time, unhealthy competition, and driving some young people to cheating, stress, or even their deaths—many commentators have called for an overhaul of our testing agenda.[16] But what other options are available?

Re-examining Exams

Finland has eliminated comparative assessments and letter grades before the 6th standard. Instead, they rely on descriptive reviews and content-based feedback.[17] As a result, only 7 per cent of Finnish students experience anxiety when working on maths at home, compared to over 50 per cent of students in performance-driven nations.[18] Incidentally, Finland's PISA test scores are among the world's highest—even though Finnish educators place minimal emphasis on testing![19] Finland's success proves that you can run a high-performing education system without subjecting learners to standardised tests.

However, simply scrapping high-pressure tests without more nuanced assessment options may not be successful. Indian government schools have a 'no-fail' policy, often reducing tests to a mere rubber-stamping exercise. Many students reach Grade 6 without being able to read, write, and perform basic numeracy. We need some form of assessment for students to diagnose learning gaps and progress towards their next learning milestone.

The key is to reimagine examinations that serve the child rather than burden them. We urge administrators to drop the aspects of testing that promote performance focus, comparison to others, undue stress, and loss of intrinsic motivation while maintaining the elements that enable students and teachers to achieve their learning goals.

Where could you find tests that fulfil such criteria? The answer is in ALfA's process of assessment, which radically differs from traditional exams in three key ways:

- An emphasis on progress (self-reference), not percentile (norm-reference).
- Feedback focuses on students' specific competencies, not cumulative score
- Providing the space for self-reflection rather than standardised scores

Progress, Not Percentile

In ALfA, learners measure their progress against their previous performance instead of comparing their scores to anyone else's.[20] Rather than asking, 'Am I doing better than others?' the student's attention is

focused on: 'Am I doing better than I was before?' Instead of worrying, 'What can I do to score a higher rank?', the ALfA learner wonders, 'Where do I still have more to learn?'

As Gwyneth Hughes notes in *Ipsative Assessment: Motivation through Marking Progress*,[21] informal ipsative (compare-with-self) evaluation is already standard in the classroom. Teachers like to tell learners when they've improved in a particular skill. Educators often notice that praising a child's progress has a more positive impact on his attitude and future effort than comparing the student to his peers.

Since you already know it works in informal contexts, why not try it in formal ones? In ALfA assessments, teachers no longer highlight the learner's absolute score or compare it to the scores of her peers. Instead, they show the student how much they've improved compared to a baseline test at the start of that lesson or term. Whereas only a few students in a traditional classroom are in the running for the highest percentiles, in an ALfA class, absolutely any child can achieve impressive progress in a given week.

I (Sunita) spent years working in Iceland. One of my friends was Martha Jones Dotter, a Grade 1 teacher. After many conversations on the subject, Martha took a risk, switching to a form of assessment that tracked progress rather than percentile, focusing on students' growth, not their grades. She found, to her astonishment, that students completed their year's work in just three months.

Competencies, Not Cumulative Score

A second key to ALfA assessments is that they give detailed feedback on how students progress in specific competencies. The reports deliberately avoid adding up the scores to provide an average or cumulative mark.

You've seen how student attention fixates on the big red number that old-school teachers print on top of a test. Though the teacher may have written helpful comments throughout the rest of the paper, children rarely take more than a cursory glance at these suggestions. All they can see is the final score. Our performance-based system has conditioned them to ask, 'What score did I get?' not 'Where are areas I need to improve?'

Genuine change starts when we stop placing this total at the front. Instead, an ALfA learner gets separate scores analysing their improvement in each skill tested on that exam. For example, a young child's math test might have one score for how they did on basic subtraction, another for their results on subtraction with carrying, and a third for their performance

on story problems. The learner can then compare each score with how they did in that area before they started the unit.

These finely tuned grades enable the learner to understand what they are doing well, how they've improved, and where they might still need to work harder. Breaking it down by task/ competency draws the learner's attention to the material rather than an arbitrary external standard. As every skill becomes a learning goal, adding scores to produce a single grade is unscientific and unnecessary. These changes help reduce the child's urge to make comparisons.

I (Sunita) stripped report cards of the 'total score' in my first experimental school over two decades ago. Initially, I got a lot of pushback from parents who wanted to compare their children to others. Over time, parents could also appreciate the more joyful learning that flourishes when children are free to focus on learning rather than their scores.

Self-reflection, Not Standardisation

When my (Sunita's) son Robbie was four, he asked me to show him how to draw a star. I showed him a simple design of two interlocking triangles (the 'star of David'). He went away for some time, reappearing later with

a page full of stars. He had ticked some and crossed others. I asked him about it; he responded, 'Mama, some of these I drew very neatly while others weren't so pretty.'

The traditional exam system drives forward relentlessly, giving no space for self-reflection. When students get their marks back, the class has moved on to the next lesson. Any feedback the test provides is useless because nobody has the time to use it!

In contrast, the ALfA assessment system forms a cycle, looping back to cover the same content in more depth or with different activity if a student requires it. Assessments inform the learning process rather than taking place outside of it.

Contrasting the Traditional and ALfA Assessment Systems

In traditional classroom exams, the teacher is the judge of the student. With standardised exams, a bureaucrat outside the school sits in judgment of both the teacher and the student. These external judgments are supposed to induce students (and teachers) to work hard. Traditionalists fear that a lack of high-stakes testing will lead to mediocrity and children not caring about their performance.

But extensive research[22] and our own experience shows that intrinsic motivation, not extrinsic judgement, is the key to maximising learning. One way to foster intrinsic motivation is to give time to students to reflect on their work. That's why ALfA provides time for students to mark their work and that of their peers. Not only does this save valuable time for the teacher, but it also means students review and reflect on their work rather than just look at the mark.

This idea may seem obvious in a subject like maths—the teacher can put the correct answers on the board and have students check to see what they understood correctly and what they got wrong. But even in something more subjective—writing an essay—the teacher can suggest a rubric and invite students to score their own and their peer's work. Through this process, they gain a greater appreciation for what their work needs to improve rather than just focusing on the score. Assessment is seamlessly integrated with the learning process.

Self-marking seems absurd within a traditional education framework. The focus of that system is entirely on scores and ranks; nobody cares if genuine learning occurs. In ALfA, with the focus shifted away from students' scores, there is space for children to reflect on their work and plan the following action steps. This process fosters a virtuous cycle, with

more joyful learning leading to more significant effort, producing more progress and greater satisfaction and joy.

Stages of Assessment

The ALfA system has five stages of assessment, designed to give learners continuous opportunities to work towards improvement.

First, after students have completed their initial assigned tasks in pairs, they create problems based on the prompts in that day's material. They then use these problems to quiz each other, providing instant error control. Each child discovers whether they can answer their partner's questions, checking their grasp of the subject without the pressure of being evaluated by a teacher. Whenever a learner gets the answer wrong, both students work together to revise and improve the response.

This cycle of assess and adjust, assess and adjust, steadily pushes them forward. Since learning pairs only see each other's work and advance at their own pace, no one has to worry about how they measure up to the rest of the class. There is no exterior force or arbitrary rush in this process.

Think of how this instant control of error compares with traditional quizzes. When you get a quiz result back the next day (or even longer), you've already moved on to the next lesson, and any learning opportunity has been lost. In contrast, every learner in ALfA receives instant feedback on their work, one problem at a time.

Stage Two assessment is a fun group quiz from the classroom teacher.* After a paired learning session, she will bring the class together and ask multiple-choice questions. Students write their answers on individual slates or whiteboards and hold up their responses for the teacher to see or use a show of hands. These responses allow us instructors to quickly understand how many learners have understood the concepts and help us gauge what might need additional review and when we'll be ready to move to the next unit.

Stage Three assessments are communal grading of classroom worksheets and homework. Children exchange papers and underline errors as a fellow learner in the front of the classroom demonstrates how to solve each problem. This active review gives learners a better opportunity to revise their work than they would get from traditional teacher-corrected papers. Cheating is not a concern because these worksheets are just a check on progress and don't affect student grades.

Stage Four is a paper to evaluate understanding before moving on to the next unit. Rather than being at a fixed time, ALfA assessments

* See Chapter 3.

Feedback Question Design

You can pinpoint your students' conceptual challenges if you devise your questions cleverly. For instance, consider this question with four options:

I have Rs 108. My friend gave me Rs 35. How much money do I have now?

A. Rs 143
B. Rs 1313
C. Rs 458
D. Rs 73

If almost all students answer option A, you know the class has mastered addition. But where must a student have gone wrong to get options B, C or D?

Option B	Option C	Option D
108	108	108
+35	+35	–35
1313	458	73

- Option B indicates that the student hasn't grasped the notion of carrying. They have added 8 and 5 to give 13 and have written this in the ones column rather than transferring '1' to the tens column.
- Option C suggests that the student wrote the sum out by aligning the leftmost digit of the numbers, which means that they added 350 instead of 35.
- Option D would be selected if the child misunderstood the word question and subtracted 35 instead of adding it.

This single question lets us understand which part of the problem-solving process needs to be addressed.

may occur every week or every few weeks – whenever a unit has been completed and students are ready. This examination helps cement the material into the learner's long-term memory. The teacher gathers the best student-produced problems compiled during the week(s), adding her own challenging questions if needed. After the quiz, the teacher puts the answers on the screen or shares them verbally, ready for students to check each other's work. They then fix their errors while showing their work, not trying to achieve a particular score but to complete and comprehend each problem. Everyone has the opportunity to make some progress each week; thus, all are on an upbeat track.

The fifth and final evaluation stage is an externally sourced cumulative exam at the end of each quarter. This benchmark assessment double-checks student progress against an outside norm. Teachers may use the standardised tests their governing body requires or any relevant examination borrowed from another school. The rationale behind using an external assessment is to ensure that the class's progress is in line with the expectations of wider society. However, it is still essential that the exam chosen is constructive, measuring skills and comprehension rather than arbitrary facts and rote learning.

Even in this cumulative assessment, the teacher won't place a summative score at the top of the test. Instead, each student will get a list of scores showing how their competence in each category compares to how they did at a previous point. Thus, they can see skill-by-skill how much they've improved. The goal, as always, is not to raise the stakes but to discover the remaining gaps.

For example, the end-of-quarter language progress report for a Class 2 student might say that the young reader has improved from 'sufficient' to 'excellent' in letter recognition, from 'sufficient' to 'good' in combining letters, and from 'struggling' to 'needs more work' in vocabulary; but are still at 'struggling' in reading comprehension. Thus, the student has reasons to feel optimistic about their progress, while learning where they need to keep working harder.

Contrast this with a traditional exam system, where the quarterly, half-yearly and final exams all test different content. I may have scored an 'A' in a Term 1 test on 2-digit addition and a 'B' in a Term 2 paper checking multiplication. But does this mean my math skills have gotten worse—or simply that the Term 2 content was much harder? By comparing apples with oranges, the traditional exam system fails to measure progress.

An ALfA report card doesn't show any summative grade. Instead, teachers break up each subject into those essential content areas, showing where the child started and their progress so they and their parents can visualise the journey towards competency. Better yet, we can empower children to make their report cards, reflect on their work, grade themselves against a transparent set of metrics, and decide on the next steps.

An ideal report card depicts progress in graphical form. This report is more complex than simple numerical marks but far more helpful. Furthermore, its complexity makes it harder for learners to compare themselves with others. Every student will have some strengths to be proud of. And everyone will always have other things to work on.

Encouragement, Not Praise

As we assess our students' learning, it is natural that we will also give them verbal feedback on their progress. Unfortunately, teachers often use reprimand and praise instead of more practical encouragement.

The harmful effects of reprimanding children are widely known. Movies like *Taare Zameen Par* ('*Like Stars on Earth*') highlight the detrimental impact of reprimand on students. Yet, this message bears repeating, given that verbal and even physical punishment is still common in many countries.

Reprimand/punishment is counterproductive to learning because:

- Fear instigates a 'fight, flight, or freeze' response, causing the learner to get angry at the teacher or wish they could hide. The stress hormones produced in this response cause the student's brain to recoil and negatively impact the student's social, emotional and physical health.[23]
- Reprimand often leads to greater aggression, disruptive behaviour and disengagement from class activities.[24]
- Low expectations of students can be a self-fulfilling prophecy. Psychologists have a name for this phenomenon—the Pygmalion effect—whereby students internalise the expectations others have on them, substantially impacting their performance.[25]

For these reasons, ALfA teachers do not rebuke students and never use physical punishment. They carefully avoid damaging a child's spirit and instead look for ways to build their learners' capacities.

It may be surprising to readers that the wrong 'praise' can be almost as harmful as criticism.[26] Teachers who compare learners to each other promote the same issues of competition and unhelpful performance focus that plague comparative testing.

Recipients of praise in the classroom have been shown to reduce personal initiative and take fewer risks afterwards. Such children are sometimes insecure in their status, afraid to get anything wrong and go down in others' estimation. People who fear failure remain stuck in a 'fixed mindset'. In contrast, those viewing failure as an opportunity for learning tend to grow and improve over time.[27]

If you want to encourage students effectively, the key is to frame each piece of feedback so that it helps them focus on the learning process and strive for specific positive behaviours. We avoid comments that compare them to other children or call attention to their grades. Here are some principles that will help you distinguish positive feedback from unhelpful praise:

Highlight Effort Rather than Innate Traits

- Helpful: 'Great work on that problem!'
  Hurtful: 'You're so smart!'
- Helpful: 'It looks like you're enjoying yourself!'
  Hurtful: 'You're my favourite.'

It's more effective for teachers to highlight the effort it took for a student to answer a problem correctly than to praise their students for innate traits. Congratulating a child for their hard work will encourage them to keep working hard in the future. It also won't be taken negatively by other children because they can also aspire to work hard (unlike an innate trait).

Focus on Learning Rather than Performance

- Helpful: 'Keep trying. This concept will help you understand how animals survive in deserts.'
  Hurtful: 'If you don't learn this, then you won't pass the ecosystems test.'
- Helpful: 'It was wonderful to see how much you understood when you worked together as a pair.'
  Hurtful: 'Your pair had the highest score today.'

Unlike score-focused comparative statements, the more targeted process-focused comments orient the student towards the best aspects of education. In this way, we emphasise the underlying goal of learning: deeper understanding, practical application, and self-improvement.

Make Ipsative Statements Rather than Comparative

- Helpful: 'You've improved since yesterday.'
  Hurtful: 'You did better than Juan.'
- Helpful: 'I enjoyed how you used rhyme and metre effectively in that poem.'
  Hurtful: 'You had the best poem in the class.'

When students compare against each other, there can only be one child who comes 'first', while half the class will always be 'below average'. In contrast, when everyone competes with themselves and focuses on progress over time, everyone can be a winner as they improve.

Motivate Rather than Rebuke

- Helpful: 'Try again, keep thinking.'
  Hurtful: 'Wrong.'

- Helpful: 'Look at the question again. That's not quite what it's asking, can you read it again and think about it in a different way?'
  Hurtful: 'Get it right! Don't you understand?'

It's not productive to punish mistakes. Instead, we recognise them as an opportunity for further learning, as stepping stones to success. This attitude will not only help students in school; it will prove invaluable in their everyday lives.

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Bringing Parents and Administrators on Board

You may think, 'Sure, I understand this is a good idea, but how do I convince my parents and administrators of that?' Some teachers want to reform but feel external pressures that keep them stuck on the status quo. One way to guide them to a new mindset can be to use these same ipsative principles in meetings with parents and at the administrative level, reaping the fruits of better evaluations in every situation.

With an ALfA mindset, we can relieve parent-teacher meetings of their usual stress. It is an unfortunate fact that many students are terrified of these parent meetings. As a former classroom teacher myself, I (Jon) have seen how rarely 'normal' parent-teacher meetings lead to improvement. Considering the time and effort that parent-teacher meetings take and the unique opportunity they provide to bring the key stakeholders together, shouldn't we try to make them more productive?

In a traditional parent-teacher meeting, the teacher dominates—telling the parents about the child's test scores and behaviour—while the child is a passive listener. An ALfA parent-teacher meeting flips this on its head: the student shares the report card with her parents and describes where she has improved and what aspects still challenge her. Rather than just reading the paper's results, she can input her personal experience, telling what she learned and enjoyed in various modules or explaining where she struggled and what was challenging.

As in the classroom, the teacher's role will be to ask questions where it would be helpful, but he doesn't need to take the stage away from the learner. Once again, the teacher is the galvaniser and motivator, not the judge. Inspiring students to reflect on their learning and find room for improvement on their own will bring far more benefit than any amount of fear.

The shift to ipsative assessments also creates new opportunities for the school institution. For example, rather than advertising the scores of top students, what if a school showcases students who made the most significant gains? When a school lays claim to a learner's excellent marks, it is unclear whether the school or the learner produced those results. Perhaps the child was already brilliant, or they achieved their results via extensive home study or the help of outside coaching institutions. But when a school can show that its learners consistently improve their skills, regardless of where they started, then the quality of the school and its role in learning become more apparent.

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We hope you can see the potential ALfA assessment has to transform the classroom experience. Compared to traditional education norms, this chapter may seem radical. So many of our schools are obsessed with letter/number grades, summative test scores, high-stakes evaluations, and competition for rank. But who do those ordeals serve? Instead, focusing on student progress and individual skill competencies could bring us closer to the true purpose of education: for students to be driven by their love of learning, charting their course towards a more profound understanding in a collaborative journey with their peers.

CHAPTER 8

Five ALfA Activities You Can Try Out Today

'A journey of a thousand miles begins with a single step.'
– Laozi, 6th century B.C.[1]

So far in this book, we have dissected how the traditional industrial education system fails to serve children's needs and interests. We've presented a compelling alternative programme whose pedagogy and philosophy enable all children to learn swiftly and joyfully. And in the previous chapter, we showed how ALfA transforms that most stressful aspect of the traditional education system: assessments.

If you're a teacher reading this, you may wonder how to get started with ALfA. Understandably, you may feel nervous about rearranging your classroom to revolve around paired learning and hands-on activities. Switching to a new curriculum, processes, and pedagogies can be daunting.

Reimagining education does indeed require a leap of faith. But to help ease the process, we've put together five simple activities you could try in your classroom tomorrow. They don't require extra materials, new books, or specialised training. They don't even take very long. But these activities will unlock your students' enthusiasm, insight and understanding – so much so that you won't want to turn back!

Claps and Snaps

One of our favourite introductory maths activities involves clapping and snapping to represent numbers. In this game, a clap signifies 10, and a snap means 1. The activity aims to get a feel for each place value and clarify to students that they can't mix and match numbers in different places.

Call a child forward to do a demonstration—you clap and snap out a number, for instance, 32 (three claps and two snaps), and the child tells what it is. Then, let the child try clapping and snapping a number, and you identify it.

Follow this up by calling two children forward to give a demonstration with new numbers. (Look at Chapter 6 for a reminder of the five-step ALfA lesson that these demonstrations form a part of.)

Once the class has the idea, have them try the activity in pairs: Child A claps and snaps a number; Child B tells what it is. Then, they swap roles and make more numbers. The teacher doesn't tell children what numbers to make—they make their own.

The activity can be easily modified and extended in any number of ways:

- **Reversing order:** One child calls out a number, and the other claps and snaps it out.
- **Writing:** One child claps and snaps a number, and then the second writes it down.
- **Three and Four-Digit Numbers**: Introduce the shoulder tap (hundred) and overhead clap (thousand)—or any other actions your children choose—to make larger numbers.
- **Zero**: Encourage children to spice it up by including a '0' digit in the number. Students with a weak understanding of place value often struggle to write numbers like 'five hundred and six', sometimes writing 500 and then putting a 6 on the end – 5006. But when children do 5 shoulder taps, 0 claps and 6 snaps, this helps them understand how many zeroes should be in that number and where they come.

Of course, there are some practical challenges that you might encounter in such an activity—but there are also many ways to address them. A common issue is that clapping and snapping can be pretty noisy, as a classroom of kids vigorously represents different numbers! We can fix this by asking for a 'silent clap' and 'silent snap'—with children observing their partners closely rather than relying on the audio.

The clapping and snapping activity gives a glimpse of the power and beauty of the ALfA process.

Paper Folding Fractions

There is a misconception that hands-on learning works for simple concepts but not for more mature learners. On the contrary, the ALfA process is effective across a wide variety of ages, topics and difficulty levels—as we can see in the following paper-folding activities that teach fractions.

Start by giving each pair a blank piece of paper. Ask Child A to fold the paper in two, then Child B to colour one of the two rectangular parts. Ask the class, 'How many parts are coloured in?' and write '1' on the board

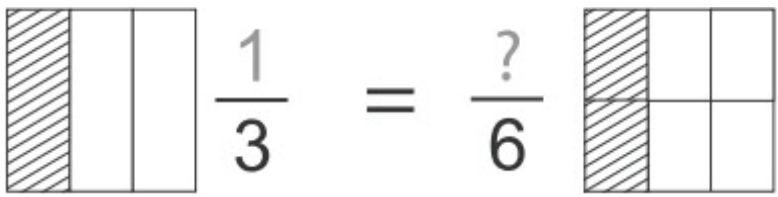
when they respond correctly. Then ask, 'How many parts are there in total?' writing '2' on the board beneath 1. Draw a line to form the fraction 1/2. Explain that this means 'half'.

Try a few more demonstrations with different fractions, for instance, 2/5 (Child B folds the paper in 5 parts, and Child A colours two of them). Once the children have gotten the idea, they can make new questions for each other in pairs. One student folds and colours the paper, and the other writes down what it is; then they swap roles.

When trying this activity in our 2023 Summer Literacy Intensive, we were impressed to see children give each other (and solve) more challenging questions, like 9/ 32. Despite the physical constraints – being unable to fold a paper more than 6 or 7 times—some ingenious children took the challenge to a new level, using a ruler to neatly draw lines representing up to 240 parts. The enjoyment of posing a challenging question to their peer led to the integration of other mathematical skills, like measurement and geometry, into the fraction lesson. Best of all, students unlocked their creative problem-solving (and problem-posing) skills.

As with clapping and snapping, we can extend the activity to cover related concepts. For instance, to understand fraction addition, we can have Child A colour 3 out of the 8 parts, then Child B colour another two parts. They can then count to see that five out of eight parts have been coloured (5/8). Once again, they can make many more such questions for each other in their pairs.

The concept of equivalent fractions also becomes simple and concrete in this activity. Child A can write 1/3 and represent it by folding a piece of paper in three parts and colouring one. Child B can then fold the paper in half in the opposite direction. When they unfold it, they see that the new fraction thus formed is 2/6 (two parts coloured out of a total of 6). They understand that this equals 1/3 since there was no change to what proportion of paper is coloured. The pair could repeat this process, folding it in half again to make 4/12 or in thirds again to make 6/18.



Many adults—even college graduates—don't fully grasp why multiplying the numerator and the denominator by the same number forms an equivalent fraction. But here, young children gain an intuitive

understanding of how to make equivalent fractions using nothing more than a folded paper.

One Two Three

Invite children in their pairs to make three chits of paper and write '1', '2' and '3' on them. Let Child A arrange the chits to form a three-digit number, for instance, '123', after which Child B writes it down. Child A rearranges the digits to make another number, like '213', and then Child B writes it. They continue this process, finding as many different numbers as they can. Then they check the final list and re-write it in ascending (or descending) order:

123
132
213
231
312
321

This simple activity ties together a host of maths concepts, such as:

- **Place Value**: the '3' means '300' if it's in one position, '30' in another, and '3' elsewhere).
- **Ascending/Descending order**: comparing numbers' sizes and arranging them in order.
- **Permutations & Combinations**: calculating how many different numbers can be made with a given set of digits comes under a branch of mathematics called combinatorics.

Beyond maths skills, the process builds teamwork and, like so many paired activities, has a built-in control of error: one child might say to the other – 'No, we've had that number already', or 'Wait, what if we try arranging them like this?'

As with the other activities, you can modify this one to engage with it at many levels. Ask children to choose any random three digits—for instance, 3, 7, 4—and see how many numbers they can make. To raise the difficulty level, encourage children to make four chits, including two each of two different digits, like '1122'. Working out how many numbers can be made now becomes a more complex problem. If you use four entirely different digits, like '2468', the number of permutations swells to 24. These additional options stretch children's ability to work through the possibilities methodically.

Hopefully, you now have some great ideas for your next maths class! You may be wondering, though—what about language? Read on.

Letter Scramble

How many words can you make using nothing but the following letters?

Y A T L I E C R

Arrange the letters differently to make as many words as possible in two minutes. Go ahead, give it a try!

How many did you get? What was the longest word?

Now, try this out in your classroom. Write up the letters on the board. Let students work in pairs, each making a list of words. They can then compare their lists, adding any new words their partner has and checking each other's spelling. They can also compare their combined list with other children's lists to see if there are additional words to add.

Try it again with a different set of letters. Then, for the third time, let the kids make their own sets of letters and give them to each other. One fun idea is for a pair to pool the letters of their first names and then see how many words they can make from those.

The process builds vocabulary as children learn new words from each other. Students improve their spelling and determine which letter combinations lead to more words. Beyond language, you'll also see creativity blossom as they spur each other on to think of more and more words. The activity is generative, open-ended, and joyful.

Consider the significant learning impact gained despite requiring minimal teacher effort. The teacher only had to write eight letters—and the kids may have written some 80 words. They are getting a lot of writing practise, but with cognitive excitement rather than the rote repetitive 'Copy down what's written in your notebook.'

Noun Verb Noun

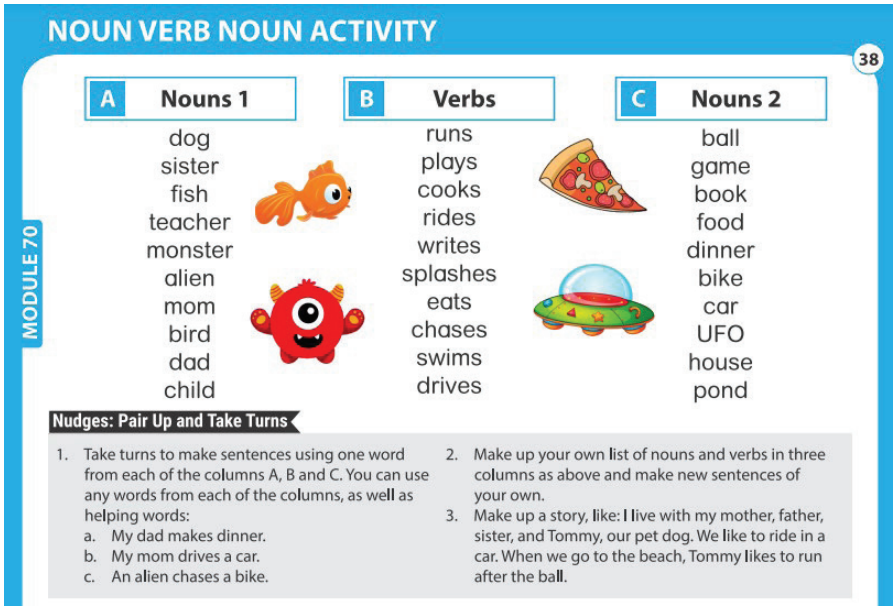
Look at the three columns in the image overleaf.

Choose a word from each column and use them to construct a sentence, including connecting words as needed. For instance:

- **Dad cooks dinner**.
- A **dog splashes** in the **pond**.
- The **alien chases** a **car**.

Now try it out in your class. Each child can write 5–10 sentences, then their partner reads and checks them. Some sentences will be sensible, others silly!

Like the letter scramble activity, 'Noun Verb Noun' is generative, enabling children to come up with endless sentences—10 words in each of



NOUN VERB NOUN ACTIVITY

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MODULE 70

A Nouns 1	B Verbs	C Nouns 2
dog	runs	ball
sister	plays	game
fish	cooks	book
teacher	rides	food
monster	writes	dinner
alien	splashes	bike
mom	eats	car
bird	chases	UFO
dad	swims	house
child	drives	pond

Nudges: Pair Up and Take Turns

1. Take turns to make sentences using one word from each of the columns A, B and C. You can use any words from each of the columns, as well as helping words:
   a. My dad makes dinner.
   b. My mom drives a car.
   c. An alien chases a bike.
2. Make up your own list of nouns and verbs in three columns as above and make new sentences of your own.
3. Make up a story, like: I live with my mother, father, sister, and Tommy, our pet dog. We like to ride in a car. When we go to the beach, Tommy likes to run after the ball.

the three columns gives 1000 possible sentences. The teacher has minimal work to set up the activity, but the kids can occupy themselves for a whole period or more and even continue the work at home!

There are many ways to extend this and make it more challenging. Start by inviting children to add more words to the three columns, multiplying the number of possible sentences. Then, you could introduce a fourth column—an adjective (before either of the noun columns) or an adverb (after the verb column).

In keeping with the ALfA philosophy, this activity takes a topic traditionally regarded as dry—syntax and grammar—and transforms it into a game. Children are grasping an intuitive understanding of what a 'noun' and a 'verb' are without needing to memorise definitions. Rather than being told passively, they work out the basic structure of an English sentence through active experimentation.

Many Activities, One Process

We chose these five activities because they are quick, simple, and require no specialised materials. But ALfA is more than just a set of activities or books—it is a way of thinking, a pedagogy. The activities provide a window into the heart of the process:

- **Paired Learning:** After each brief demonstration, children spend the rest of the lesson working together in pairs, ensuring they are highly engaged throughout the lesson.

- **Known to Unknown, Simple to Complex, Concrete to Abstract**. The ALfA process scaffolds upwards in difficulty level, helping children derive insight and incorporate each new piece of knowledge into their existing mental frameworks. Many of these games used simple actions (like folding paper or rearranging chits) to convey complex, abstract concepts (fractions, permutations).
- **Deeper Understanding**: The activities lead to more insights and genuine learning instead of simply following the rules of a process.
- **Minimises teacher workload**: The teacher is active in setting up and demonstrating the activity—but after that, children are activated, and the teacher needs to observe and encourage them. Rather than needing to 'mark' each student's work, children check each other.
- **Flexibility of Learning Level:** Every child can do the same activity but modify it to suit their learning levels.
- **Spirit of Adventure:** Children enjoy giving their peers challenging questions, pushing each other onwards and upwards.
- **Social Skills:** If a child gets it right, their partner says 'well done'. If they get it wrong, the second child says, 'Try again'. The one-on-one modality enables continuous affirmation throughout the lesson—something that is impossible in a teacher-led classroom.
- **Control of Error:** Immediate, individualised feedback in the paired setting enables learning gaps to be identified and worked in the context of the lesson.
- **Beyond Academics**: These activities are great for teaching literacy and numeracy, but they're even better for developing critical 21st-century skills (Chapter 5), including communication, collaboration, critical thinking and creativity.

Taking the Next Step

Have you tried these activities in your classroom? If you've glimpsed the beauty of paired learning and the power of learning via doing, are you ready for more?

If so, join us in our next online training! Scan the QR code or go to www.dignityeducation.org to check out the details and enrol in the next event. We regularly run free, 3-hour online workshops in which you will get the chance to:

- Watch videos that take you inside the ALfA classroom
- Explore the ALfA learning materials

- Try out some hands-on activities—those described above and many more
- Raise and discuss any questions and doubts you might have
- Network with other like-minded educators from your country and around the world

Once you've attended a training, you can use the ALfA materials in your class. Access the e-books and start teaching today by scanning the QR code or searching 'ALfA Way' in Google PlayStore. The programme is currently available in 30 languages—if not yet in yours, we request your help replicating it.

The classroom is the ultimate testing ground for education. A new pedagogical theory can sound great in a textbook, but unless it works in practice, it won't help. We warmly invite you to try out ALfA with your children. The proof of the pudding is in the eating!

CHAPTER 9

Teacher Question and Answer

Whenever a new educational framework is introduced, people conditioned to the old ways push back. This response is perfectly reasonable: Our children's education is a big deal, and we shouldn't make changes lightly! It's essential to have an informed debate before accepting any new system. So, how do we address the most common objections to the ALfA approach?

Our answers are in the following pages. Beyond our own replies, we've given space for a few ALfA teachers and principals to share their experiences.

'Some people say kids don't want to learn and are inherently lazy. How will they learn if we don't force them?'

Children gravitate towards your expectations. If you teach pupils to sit quietly and not participate, they will get bored and check out. Thus, 'lazy students' are the inevitable consequence of a teacher-centered pedagogy. Like Alfie Kohn said, 'As a rule, it's hard to deny that their excitement about learning is almost visibly drained away by the Old School approach.'[1]

If you instead encourage students to actively engage with the material and make it easy and fun to do so, most will embrace the opportunity.

Just watch a group of kids at play. How often do you see the children standing around, doing nothing? You know that's not natural! Children love being active; they will play with whatever is available. Active play among children can last hours at a time, whether alone or with a friend or group, and is typically only interrupted if an outlet for passivity (such as a television or smartphone) is given to them.

> 'ALfA is a wonderful pedagogy, which makes a significant impact on the kids' learning and development, enhancing their skills and confidence level. I feel that ALfA is a great way to proceed for the pre-primary education as they enjoy what they do and learn. The basic skills are honed through this methodology. This is real education.'
>
> – Jyoti Kashyap, Principal

Every child is capable of active engagement. The key is to condition them to active learning as soon as possible. The longer it takes to adopt a

paired learning strategy like ALfA in your classroom, the more bad habits you'll have to work out of them before they know how to embrace the programme for all it's worth.

'ALfA sounds great for children who already have some sense of what they're doing, but can that system work for young kids? How can two beginners learn from each other if both are starting from zero?'

This objection is the most common and easy to understand. When we think of a teacher, we think of a subject-matter expert. How can anyone teach before they've understood the subject that they're teaching?

The trick is to realise that peer learning is different from traditional teaching.

A substantial body of data supports the assertion that peer tutoring works in lower grade levels, including Grade 2, Grade 1, and even Kindergarten.[2,3,4,5] In one study of first graders, 83 per cent of tutees showed significant improvement in their ability to read sight words despite the median tutor knowing less than 20 per cent of the given sight words during pretesting.[6] In a study of number sense among kindergartners, five-year-old students could tutor each other in basic number theory despite many of the tutors being weak in the concept themselves.[7]

The basic concept behind ALfA is that two minds are better than one, even among beginners. One student is not 'teaching' the other so much as two students are taking turns leading while they break down the task they've been given. In any task that is age-appropriate for students to work on alone, it will be even easier to work on as a pair.

'Accelerating Learning for All provides strategies to move all students towards becoming independent, critical thinkers. It enhances their reading skills and self-confidence. Students participate in collaborative tasks and hands-on activities, which helps them learn new concepts easily.

In Kindergarten, there were so many good changes as the learners can read new words easily and their learning pace also increased. The new admissions who were not aware of phonics and were not able to read a single word – they are reading their text books very easily after AlfA. The students also learned mathematics above their level and easily understood the topics through different activities. Parents are also happy with this new way of learning.'

– Ms Shivani, Kindergarten Teacher

Of course, this learning climate doesn't happen automatically. It's not as simple as 'pair them up and let them go'. Students at early literacy levels will struggle as peer tutors if they have to work with traditional materials. To be effective, young learners need specifically designed, easy-to-understand materials, with clear pictorial prompts that even an illiterate student can follow. This is the strength of ALfA—we have designed it with the student pairing pedagogy at the forefront rather than retrofitting materials to the learning methodology after the fact.

Not all students thrive in this setup. Why don't we use alternative strategies for those who prefer solo learning or face social challenges?

We work from the belief that communication and collaboration are essential skills for every student, not just optional skills for those students who gravitate towards them most easily. Even introverted students will

'ALfA is a student-led platform wherein students actively participate in the teaching-learning process. The collaborative activities via pair learning have developed confidence in them and motivated them to express themselves in front of others, especially the introvert and slow learners.

- Learners are not assessed based on marks, rather they are given the chance to correct their mistakes which also serves as a reflection for their teacher where she needs to emphasise or revisit the topic one more time.
- Learners get the chance to understand the topic on their own, they retain content for a longer duration as they go deeper by framing questions on their own.
- Learners' communication skills have improved. They have become more fluent in speaking and answering questions, especially the slow learners and passive learners have started participating and interacting with others in the class.
- Hyperactive students take initiative to help those who are struggling. They also take interest in framing their own questions, composing their own poems and stories, framing maths problems.
- They have become more cooperative with each other they have learnt to share their things and help each other.
- Learners have become independent and confident. They are able to find and work on their own mistakes which help them to retain information and self-assessment.'

– Mrs Tayyaba, Grade 2A Teacher

one day have to engage with coworkers, customers, and management, and it would be a disservice to fail to prepare them for this just because social interaction isn't their strong suit. We don't want our less social students to end up among the majority of graduates who lack teamwork and communication skills.[8,9]

ALfA processes give shy students a safe, low-stakes environment to step out of their box and express themselves. Their learning efforts are alongside a friendly student partner rather than the stress of performing in front of the whole class. Our focus on empathy and understanding others helps ensure that the student pairings are a safe space for every student. And the normalisation of pairing in the classroom conditions their expectations so that all students know that participation is a normal part of the learning day and not something extraordinary they have to worry about.

Many students need opportunities to work on material alone, but that is best taken advantage of with assigned homework rather than wasting class time. Since the classroom space is their opportunity to work together, why not use it?

'I've heard that student-led learning only works for kids from privileged backgrounds. Don't students from more difficult backgrounds need explicit instruction?'

Sadly, the students most in need of new and progressive methodologies have often been subjected to the most boring, regressive teaching techniques. Due to low expectations or a misunderstanding of effectiveness, students from disadvantaged backgrounds often find themselves subjected to rote learning and programmematic, inflexible learning systems because their teachers believe 'that's the only way they'll learn.'

This way of thinking isn't logical. If rote learning techniques are boring for privileged students, will they not bore the underprivileged, too? Suppose peer learning is the best means for students from a higher socioeconomic class to remain engaged and reduce off-task behaviour. Why can't it also help the lower socioeconomic class students stay engaged? Good pedagogy is good pedagogy, regardless of the student's background. We must ensure we're paying attention to all students, monitoring progress closely, and responding to needs and deficits in any particular student's learning as those needs arise.

This is not to say that you can throw children into the classroom and assume they'll figure it out. This 'progressive' extreme isn't helpful either.

The ALfA material explicitly scaffolds students from their current 'knowns' to reach specific learning objectives. It is the teachers' role to help all pupils adopt the ALfA methodology so that they can successfully grapple with each lesson in turn. Once the basic paired learning methodology is understood, we believe all students can thrive in such a system, not just the privileged ones. In Chapters 10 & 11, we'll show some proof that this belief is well-founded.

Two young boys, both from slum communities, read the ALfA Hindi book together. Lucknow Summer Literacy Intensive, 2023

'Doesn't the peer learning process hold back the more advanced children? Some of my children already have good literacy and numeracy skills – what does ALfA offer them?'

Research shows that advanced students benefit from explaining concepts to their peers.[10,11,12,13,14,15] When I (Jon) was a gifted student, numerous teachers utilised me as a peer tutor, even in settings where paired learning was not the norm. I gained significant retention and depth of understanding when I explained the material to another child. Remember, the very base of the Learning Pyramid* is 'Teaching Others', but most students rarely get

* See Chapter 6.

a chance at that level. Working to help other children leads the advanced student to wrap her mind around the concepts in a more complete manner than completing problems by herself ever would.

Advanced students in a paired learning programme will also gain soft skills. Chapter 5 discussed why 4C skills and 4C traits are vital to a child's education. Peer instruction encourages empathy, kindness, respect, and learning while helping young people to enhance their communication and collaboration skills. It gives them a deeper understanding of the material, instils the value of learning, and helps them develop their teaching skills.

True, the most gifted students will not cover as much class material through peer tutoring as they might if they were working independently. Nor would they go as fast as they could if the teacher continued with the advanced material and ignored the rest of the class. But the gains they achieve in return are a deeper understanding of the subject and a love of learning that can pay dividends far beyond the next test.

Do we want children who only care for their own advancement and do nothing for their peers? Do we want children who believe a 95 per cent is the end of the world and will go to any lengths to pass up their fellow students? Or do we want well-rounded stars who take the time to comprehend material at a deeper level and understand why it's so crucial that their classmates comprehend it as well?

'ALfA promotes active engagement by encouraging children to participate in collaborative tasks and interactive activities. They feel confident enough as they are not assessed on the basis of only their marks, as in the traditional method. They are not rote learning the concepts, hence they are creative and their critical thinking is enhanced. They have become more social as they are paired randomly and can interact with their peers to promote and enhance the learning. Introverts have starting expressing themself as they are not scared of being questioned individually.

Moreover, reading the modules has helped them in many ways and has improved their comprehension skills. Paired learning in ALfA encouraged students to comprehend and discuss texts with their peers. ALfA has also helped students in becoming fluent and they can effectively convey their thoughts with their peers, think and ask creative questions. Their spoken English has improved a lot.'

– Ms Shivangi, Grade 1 Teacher

'Using concrete materials sounds intriguing, but our students have been conditioned to solve problems with pen and paper. Why not just keep going with what works?'

Pen-and-paper worksheets are useful practise for pen-and-paper tests. But are we sure those children can perform the same tasks in the real world? It's impossible to know. Some students transition smoothly from paper to reality without a hiccup, while others are unable to make the leap because they never understood the real-world basis for the numbers they were manipulating on paper. Why not introduce the concrete representations

Learners use ice cream sticks and matchsticks to solve a division problem. Lucknow Summer Literacy Intensive, 2023

of the ideas right at the beginning, so you *know* they understand what they are doing from the start, rather than hoping they get it later?

ALfA works out of Dr. Jerome Bruner's Concrete-Pictorial-Abstract (CPA) approach.[15] It's not just more effective from a learning standpoint; it also sets the student up for future success by ensuring that the concrete meaning of every concept is explicitly tied to the abstract representations from the beginning. This has the dual benefits of helping students who struggle with abstract concepts *and* helping all students transition to applying the abstractions in real life when that time comes.

'Why are there so many students talking at once? Productive classrooms shouldn't be so noisy.'

A quiet classroom is not necessarily a superior learning environment. Sadly, the passivity of factory-style classrooms has become ingrained into our consciousness such that many teachers have a visceral reaction against noise in the classroom. These traditional teachers associate noise with off-task students and a lack of classroom discipline.

The noise in an ALfA classroom has no relation to off-task or disrespectful noise; indeed, it is *productive* noise. It is the noise of fifty per cent of students actively solving problems at any given time rather than just one or two. It is the noise of students developing their communication and collaboration skills. The noise proves engagement, rather than the uncertain silence of a teacher-centred classroom that can mean anything from deep thought to daydreaming.

Another advantage of noise in the ALfA classroom is that it provides opportunities for the ALfA teacher to check understanding. When students in a traditional classroom are silent, the teacher doesn't know how much they each understand from the lesson. But as the teacher moves about an active ALfA classroom, she can listen to every pair and monitor their learning level in real-time without stopping the process or interfering.

'Is ALfA a phonics-based reading system or a whole language based reading system?'

ALfA is its own unique system, which can't be easily fit into the phonics box or the whole language box.[†] ALfA takes the best of both worlds by building on the process of sounding out words while teaching students to read whole words and sentences with understanding from the beginning.

The key novelty of ALfA is that it moves from known to unknown, thus ensuring a deeper inclusivity than traditional phonics while retaining the

[†] See Chapter 2 for a more detailed treatment of the reading wars.

commitment to explicit decoding. The programme scaffolds instruction in a manner responsive to students' individual needs, thus encouraging more equity in education than either phonics or whole language. ALfA does this by focusing on each student's capacity and building on prior knowledge.

The most prominent weakness of whole language is that it sometimes leaves behind students who don't naturally decode words, especially those from disadvantaged backgrounds. The drawback to phonics is that it can be tedious and loses track of context in favour of repetitive, mechanical processes. Thus, both phonics and whole language pose challenges for struggling readers, either in skills or motivation. ALfA targets these struggling readers where they're at without compromising the progress of the rest of the class.

Students ask each other questions and work through the first module of the ALfA English book together. Lucknow Summer Literacy Intensive, 2023

We're already using Think-Pair-Share. How is ALfA any different?

While Think-Pair-Share is also a paired learning system, its structure, strengths, and best-case uses differ from the ALfA system.

First, Think-Pair-Share devotes substantial class time to individual thought and reflection. This approach is comfortable for the student who

can already read and make progress independently but does little for the student who doesn't know where to start.

ALfA, on the other hand, pairs students up from the beginning of the process. Thus, even the least-prepared learner has a partner to help start the process and keep it going when things get rough. Think-Pair-Share is most useful for students who already know what they're doing and how to build forward. In contrast, ALfA facilitates progress together at all stages of learning.

Also, the structure of Think-Pair-Share is more rigid in that children only complete the specific problems that they are given. It doesn't easily facilitate the child-driven development of new problems that ALfA allows. ALfA pedagogy sets up the partner pairs to keep engaging indefinitely as they develop more variations on the prompt, transforming the process from a merely 'child-centred' learning style into a 'child-led' learning system.

'Accelerating Learning for All has revolutionised the education system by providing a fun and interactive approach to learning. This innovative pedagogy has proven beneficial for both students and teachers of my campus.

By working in pairs, children engage in collaborative learning, which has not only enhanced their understanding of the subject matter but also fostered teamwork and communication skills. ALfA has made teaching difficult topics much easier for the teachers, as they are able to present them in a fun and engaging way. The reading skills of children have improved immensely through ALfA, as they actively participate in asking and answering questions. This exercise has promoted effective communication and helped children express themselves confidently.

We can proudly say that ALfA brings out children's creativity by encouraging them to think critically and come up with innovative solutions. It provides a supportive and interactive learning environment for all. ALfA nurtures the creative potential of each and every child. Overall, ALfA has transformed education by making it more enjoyable and meaningful for students and empowering teachers to create engaging learning experiences.

The classroom environment has become more positive and cheerful. Parents are happy with the amazing growth and confidence of their children. It's truly remarkable how ALfA has impacted the education landscape.'

– Ms Deepali Shukla, Principal

'If students lead the learning process, then how can we guarantee that they'll learn the right things?'

A common misconception is that student-led learning strategies can't have clear school-derived learning objectives. In ALfA, the students control their learning process, but the teacher and the programme still set the learning goals. In Chapter 7, we showed you five layers of assessment strategies that allow the teacher to ensure students comprehend and retain the necessary material over the short and long term.

'What will the parents think, how do I explain it to them?'

There is little doubt that many parents can be regressive in their learning preferences for their children. Most mothers and fathers have never been educated in pedagogical techniques or gotten the chance to try different systems; they only know how they were taught 20, 30, or even 40 years ago. Of course, that experience may have been outdated and unhelpful even back then.

The best way to develop an understanding with parents is by facilitating their education in the ALfA process. It is vital that the teachers understand why the system is being changed and the positive arguments for ALfA so that they can communicate those to the parents efficiently during parent-teacher meetings and school open days.

Parent Experiences of ALfA

'I would like to thank the school for introducing this super interactive new learning ALfA programme. I have seen so much excitement in my daughter before every class, mainly because of the simple yet interactive learning tools. She loves the puppets Tina and Toto, they have become her best friends. The programme is well structured for all the three subjects and the way the students interact with each other and learn to communicate in the process is commendable. Thanks for this special gift.'

– Mrs. Shabistan Rahman Ansari,
Mother of Alvina Ansari, Class 2A

'Kavya is well-occupied with the ALfA programme. Her performance has improved in Mathematics and English. This programme has helped implement activities effectively which has led to a better understanding of the topic.'

– Anurag Jaiswal, Father of Kavya Jaiswal, Class 3D

'Since our son Vinayak started learning in the ALfA programme, we've seen a remarkable change. He's become more independent, confident, and inquisitive about his studies. This approach has made learning fun for him, and his academic performance has improved noticeably.'

– Mother of Vinayak, Class 3F

'It is devastating to see our children experiencing difficulties in understanding maths. ALfA class makes it easier and interesting and dissolve all difficulties of my daughter and now she is taking more interest than earlier. Thank you ALfA.'

– Mother of Anzalna Imran, Class 3H

Scan the QR to hear more parents speak about their experience of ALfA.

'I'm already overburdened with my curricular load – how can I start from scratch and implement an entire new system?'

A harried teacher is not an effective teacher. The responsibilities of educators are significant enough as they are; we would not recommend anything that adds to this burden. That's why we have designed the ALfA programme with the goal of reducing the teacher's workload.

Training only takes a day or two. The prompts are easy to follow; most learning comes as you go. You don't have to create materials because they are given to you, and more are made within the instructional time in collaboration with the students. Making and marking worksheets is no longer an additional out-of-classroom responsibility for the teacher.

The great workload advantage of the ALfA system is that it shifts many routines to the students, freeing up the teacher to choose her daily focus. You will need several weeks to implement the system and help the students grow out of their previous academic habits. But once the norms are in place, the pace of the teacher's day becomes far more manageable. Instead of juggling a lecture delivery, checking for understanding, and managing discipline issues all at once, the facilitating teacher is free to wander around the room at leisure.

On top of that, the extra time ALfA gains by accelerating foundational literacy cannot be taken for granted. After a 45-day programme to help the students achieve essential reading and math skills, the rest of your curriculum will go much faster. Think of all the time your students would

have spent learning the 3Rs that you now have freed up to go deeper and also devote to other subjects!

'Phase 2 involves transitioning from ALfA Study Material to the school's recommended textbooks while maintaining the ALfA pedagogical principles of random pairing and taking turns. The learners were initially facing problems doing the written assignments but gradually they managed to maintain a balance of traditional content with ALfA's unique approach to learning. Peer checking is also continued. The learners are enthusiastic and are able to interpret the HOTS [Higher Order Thinking Skills] questions.'

– Ms Lipika, Grade 1 Teacher

Peer Learning for Teachers

The best way to win over any sceptics is to have them try out the programme themselves! In City Montessori School, Gomti Nagar 2, a pilot is underway in which some of the sections implement ALfA, and others use the regular curriculum. The teachers of the different sections visit each other's classes periodically to observe and learn through peer-sharing.

'All the children were able to answer questions related to the different topics covered in the second term. Learners were confident and could answer the questions related to the topic (time).'

– Seema Tripathi, a non-ALfA teacher observing an ALfA Grade 1

'During the session, I introduced the ALfA technique. The students found it enjoyable and engaging. They actively participated, asking questions among themselves and expressing their curiosity while learning. Their enthusiasm and interest in the ALfA approach were evident as they interacted with their peers and had a fun time exploring the topic together.'

– **Yusra Fatima**, an ALfA teacher observing a non-ALfA Grade 1

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It can be daunting to try something new.

The early automobile was initially met with scepticism and deemed incapable of replacing a horse-drawn cart. The idea of a flying machine was considered impossible until the Wright brothers suddenly made it work.

When mobile phones were introduced, many were initially sceptical. Would they work? Would they be too disruptive? But as people started using mobiles, the benefits became apparent. Now, mobiles are seemingly indispensable and very few still use landlines.

Once you try out ALfA in your classroom, we feel confident that you won't turn back.

Part C

POLICY

The previous section was for teachers interested in implementing *Accelerating Learning for All* in their classrooms. But suppose you are a school administrator, government policymaker, or NGO leader. In that case, you might be thinking about how to apply the ALfA programme on a larger scale. This section shares how different implementations of ALfA have worked out and gives a roadmap for trying it in your context.

Chapter 10 examines the ALfA programme in India—from our earliest experiments in the slums of Lucknow to the latest collaborations with the state education ministry.

Chapter 11 explores how ALfA has spread to many countries worldwide—from government schools in Maldives to adult education in the US.

Chapter 12 concludes with a call to action. We break down a seven-step process with which you can bring ALfA's foundational literacy and numeracy to your communities.

CHAPTER 10

From Slums to States: ALfA's India Story

> *'I walked down the corridor and saw children reading newspapers, quite tough language, in English and Hindi both. They were reading very beautifully. It's a big deal, the level they have reached.'*
>
> **– Alok Ranjan,** former Chief Secretary of Uttar Pradesh, observing the ALfA programme at City International School, 2022.[1]

ALfA was born in 2014 in the slum communities of Lucknow, India.

Unfortunately, many children in these communities had failed to learn how to read in their local schools, both public and private. In addition, numerous adults and even some kids had never attended school or dropped out early. We wanted to give residents there one more chance at a decent education.

This was how two authors (Jon and Sunita) first met: Sunita had a new literacy programme, and Jon, already living in one of Lucknow's largest slums, was interested in trying it out. The results were immediate. An analysis of Jon's first 100 learners found that students took an average of 63 sessions to progress from complete illiteracy to a 3rd Standard reading level.[2] That's three years of learning in less than three months! What's more, each session lasted just 10-15 minutes.

This data confirmed what we had already seen firsthand. Within a week of starting the programme, its potential was obvious. Children who previously could not recognise letters now sounded out multi-syllabic words. Those whose parents had given up on them receiving an education were now coming to class every day. Though school-going kids needed time to drop unhelpful patterns they had learned in rote education, the progress they made once accustomed to the system was remarkable.

A few weeks later, we launched the *Each One Teach One* campaign. Through this initiative, we trained student volunteers to help at least one illiterate person in their community. The programme reached tens of thousands of youth across India between 2014 and 2019. We advertised similar opportunities at education conferences, and soon, partner NGOs were founding literacy programmes in Mizoram, West Bengal, Uttar

Pradesh, Maharashtra, and Telangana, bringing a first step in education to thousands more.

Our first book, *Disruptive Literacy*, shares many of their stories and a vision for how India and other countries can swiftly become literate through a people's movement for literacy.[3]

To Teach a Village

After working in various slums of Lucknow, we embarked on an experimental endeavour to foster literacy within a village community. Karauni, a small village approximately 30 kilometres southwest of Lucknow's city centre, was chosen as our pilot location. A comprehensive survey uncovered that, out of a population of 4,365 residents, more than 1,200 individuals between the ages of 7 and 70 could not read or write in their native language, Hindi. Notably, two-thirds of these illiterate individuals were women.

Our team creatively promoted literacy by organising events such as songs and marches and drawing inspiration from local art forms and folklore. These activities served to engage potential learners and volunteers within the community. The efforts culminated in a village-level meeting, which attracted curious people eager to learn more about our literacy programme.

Ultimately, we identified 22 women who selflessly volunteered to become mentors, committing their time to this noble cause without expecting any compensation. This diverse group included college graduates and those who had only completed Grade 5 education. Among its members were young, unmarried women and older, married ones. We conducted an intensive four-hour training session on effective literacy instruction to prepare this group of mentors for their mission.

This small but determined group of volunteers then embarked on an ambitious mission: to eradicate illiteracy within the village. Hailing from various hamlets across the village, the mentors began spreading the word among their neighbours, relatives, and friends. Organically, small groups of women gathered in open spaces or mentor's homes, typically dedicating an hour each afternoon to learning to read and write. Beyond literacy, these gatherings provided a supportive and friendly environment for social interaction, fostering the development of community networks.

In a remarkable achievement, the 22 literacy mentors reported that the initial group of 180 women became literate within just two months. In August 2015, these newly literate women took the National Literacy

Mission test, marking the first time many had set foot inside a school. Astonishingly, 135 formerly illiterate women passed the test on their first attempt. Their joy was palpable as they received literacy certificates from the Government of India, certificates they could now read themselves. Subsequent batches of learners followed suit, with hundreds more gaining literacy skills.

The impact of this literacy initiative extended far beyond mere reading and writing skills. Many newly literate individuals continued their educational journey, with some learning English and a few pursuing formal qualifications through the National Institute of Open School. Others formed self-help groups and established livelihoods, engaging in small-scale pickling or craft-making businesses. For most, the benefits of literacy reverberated across multiple aspects of their lives, from enhanced domestic dignity to increased empowerment within the broader society.

> A week ago, 40-year-old Gudiya, a native of Karauni village in Lucknow's Sarojini Nagar block, went to a nationalised bank to inquire about the balance in her savings account. The bank staff told her a figure, but Gudiya insisted he recheck it. When the staff refused, she told him that only that morning she had received a text message, according to which ₹15,000 had been credited into her account. The staff rechecked and found her to be right. He apologised. 'I told him I wasn't illiterate. I learned how to read and write ever since the Global Dream Literacy Mission started in my village,' Gudiya told HT.
>
> – *Hindustan Times Report*, September 8

Literacy for Mothers

As we argued in our first book, *Disruptive Literacy*, child and adult literacy are two sides of the same coin. Girls who learn to read grow into educated women, who in turn will ensure their children learn to read.

IIMPACT Foundation works to teach both children and mothers the crucial skills of literacy and numeracy.

In 2022, we tried the ALfA programme in Murshidabad District, West Bengal. Some 50 volunteers used the ALfA pedagogy and processes to teach nearly a thousand women how to read. After this successful implementation, IIMPACT decided to scale the programme across different districts. In December 2023, we conducted an online and then an in-person training for over 200 facilitators, who will teach Foundational Literacy and Numeracy to 8,000 women. It's likely that the moment you

read these words, a group of women are learning to read with the ALfA materials!

School Trials in Hamirpur

After collecting data on ALfA's efficacy in non-formal literacy labs for two years, our first pilot study in a school setting came in 2016. Teachers in five schools in Hamirpur, Uttar Pradesh, were asked to supplement their literacy strategies with ALfA's programme. At this early stage, ALfA used a combination of group instruction, peer learning, and individual targeted help.

The selected teachers gave a pretest to 439 school students to measure their literacy levels before programme implementation. We found that only 20 per cent of the learners in Grades 1–5 were literate, including just 33 per cent of those in Grades 3 and up. These numbers are even more shocking when we consider that they only account for the pupils still attending school. We mourn the many children who dropped out after an unsuccessful first few years and thus were no longer around to be tested.

After that pretest, our instructors provided a two-hour training in the ALfA programme. The teachers then implemented supplemental ALfA literacy instruction daily for 12 weeks (comprising 43 instructional days with holidays and breaks excluded). When the trial was over, students took a post-test in the same format as the pretest. We've shown the results of those pretests and post-tests on a 4-level scale below, with '1' corresponding to mere letter recognition and '4' to basic literacy.

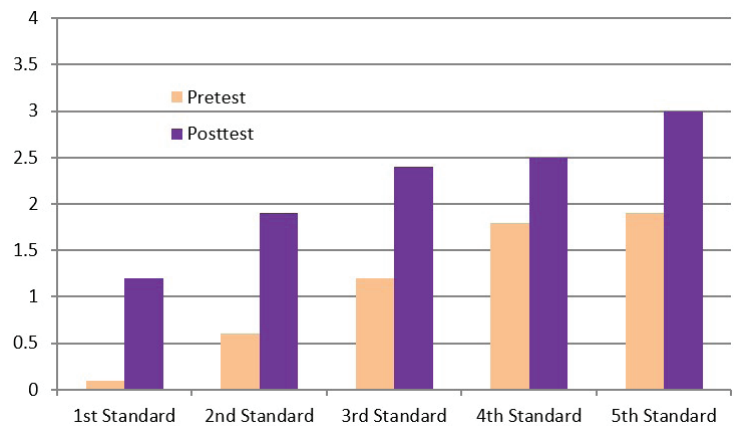


Figure 1: *Pretest/post-test scores in Hamirpur by class level*

In a twelve-week trial period, students advanced over one level on average, regardless of their starting point. If you compare the bars by class level, each class's post-test scores match or surpass the students' pretest

scores two years above them. In other words, twelve weeks of instruction with the ALfA toolkits created as much progress as two years of education had previously brought at those schools.

Following the Hamirpur trial, we tested ideas in City International Schools and City Montessori Schools. Over time, we shifted the methodology entirely to the paired learning model rather than just using paired learning as one tool among others. We also used this period to expand numeracy materials, which hadn't been employed in Hamirpur.

Putting ALfA to the Test in Shamli

> *'When these Grade 3 children first came to school, they were quite weak; many didn't even know the alphabet.'*
>
> – Amit Kumar, teacher

> *'Whatever they had learnt in or before the holidays, they had forgotten.'*
>
> – Nisha Chaudhary, teacher

> *'When the children returned after such a long time, it was hard to understand what to do with them and how to do it.'*
>
> – Shalu Sharma

The Covid pandemic learning losses from 2020 to 2022 were a massive global burden. These school closures and setbacks delayed our implementation programme by two years while further escalating the learners' needs. As several teachers shared, large cohorts of unschooled students entered the system in 2022. It was difficult for schools to respond.

This setback provided a novel opportunity for ALfA to show its merit. The Indian Ministry of Education requested our NGO to implement programmes to improve literacy and numeracy levels of two 'low performing districts', one of which was Shamli, Uttar Pradesh. When Covid restrictions ended, we planned an initial trial of twenty schools, half of which would implement the programme and the other half to be used as a reference group.

ALfA instructors prepared the teachers via a one-day training on the ALfA technique, including tutorials on paired learning, asking questions, and facilitating activities. These teachers then implemented those practices for 40 working days, using the ALfA books and methods for 45 minutes (one period) of Hindi and 45 minutes of Maths daily.

At the end of the trial, officials tested the children in Grades 3 and 5 using a multiple-choice exam based on the National Achievement Survey. These were the results:

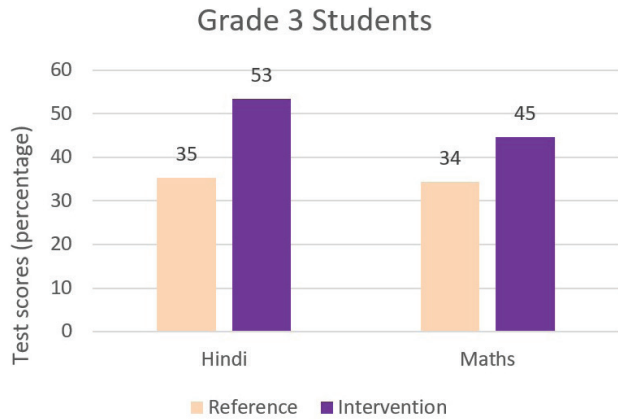


Figure 2: *Post-test results from Shamli for Grade 3 students*

Children from schools in the intervention group scored 18 percentage points higher than the control group in Hindi literacy and 11 percentage points higher in numeracy. Unfortunately, two schools in the intervention group chose not to use the ALfA materials during the trial period and had little progress as a result. Considering these two schools as part of the reference group, the difference between intervention group students and control group students would widen even further to 23 points for Hindi and 17 for Maths.

Grade 5 students also demonstrated impressive progress with the ALfA programme:

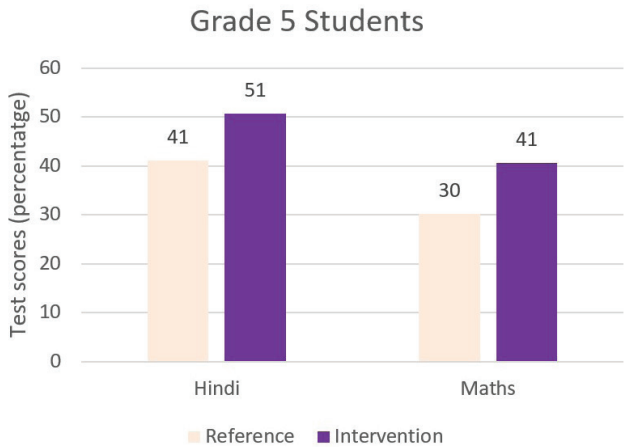


Figure 3: *Post-test results from Shamli for Grade 5 students*

Just as for younger learners, the intervention group scored substantially higher than the reference group in both Hindi (10 points) and Maths (11 points).

To confirm these results, our team visited four intervention schools and two reference schools to evaluate oral reading fluency. We tested students' reading pace in Words Per Minute (WPM), a measure of functional literacy in early readers. As in the written test, in-person evaluations indicated substantial advancement in literacy within the intervention group schools.

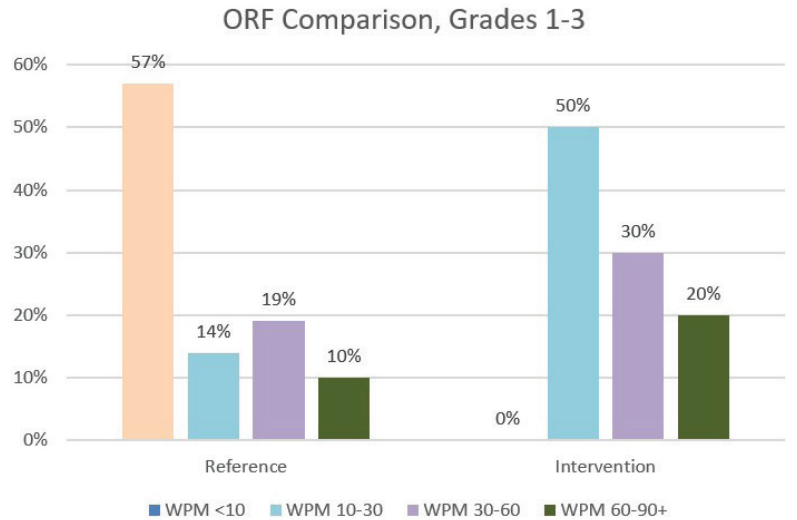


Figure 4: *Oral test results from Shamli for Grades 1-3*

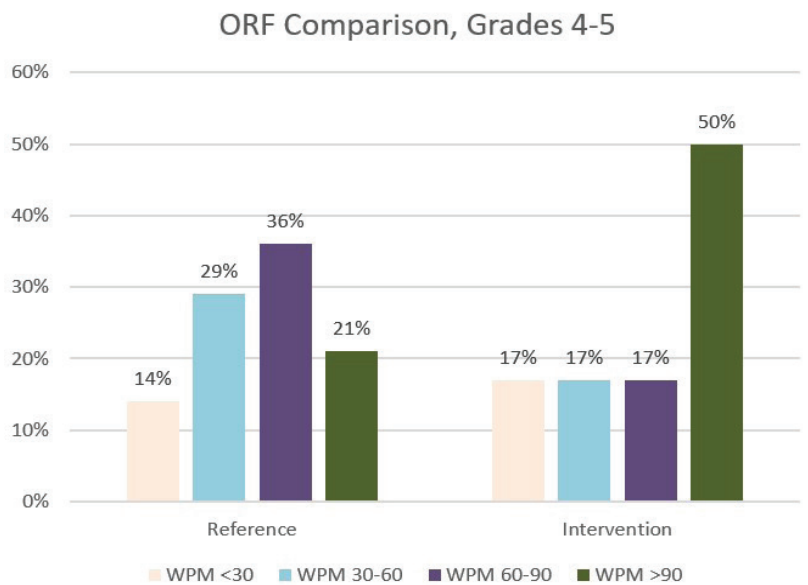


Figure 5: *Oral test results from Shamli for Grades 4-5*

In Grades 1–3, every child sampled in the ALfA classrooms could now read faster than ten words per minute. In contrast, over half of the control group's students were still functionally illiterate. And in all grade levels, the percentage of ALfA learners able to read at the fastest pace was now twice as high as for the control groups.

If students can show that much progress in 40 working days, imagine what ALfA could do for them when used year-round!

While visiting Shamli, we spoke to teachers and administrators to hear their observations. Their feedback was just as encouraging as the learners' performance.[4]

'Since we've used the FLN programme [ALfA] with the children, we've had very good results. Kids who weren't able to read at all, many are now reading newspapers.'

– Amit Kumar, teacher

'We were teaching the old way, but instead when we started teaching children with the ALfA method, we saw quicker improvement in the rate of learning.'

– Shalu Sharma, teacher

'My class's students have learnt to read the newspaper. I felt that this programme run by DEVI Sansthan is extremely commendable.'

– Mahima Arya, teacher

'I'm extremely happy that my kids can read. Class 1, class 2—all of the kids.'

– Anuj Kumar, teacher

'The results are highly positive and exciting. Children's attendance has also improved.'

– Praveen Kumar, BSA

'Some of my children have learned numbers in the thousands. They are understanding well. It's remarkable work, and the children's attendance is high.'

– Arvind Kumar, Class 2 Teacher

Several teachers highlighted our active methodology, pointing out that children who had struggled with conventional education were more engaged in ALfA's student-based programme.

'The ALfA technique is different from old methods because the students are in the centre of activities.'

– Meenakshi Panwar, Class 4 teacher

'The children are really enjoying ALfA. I also feel that children who were being left behind and those who thought education is a burden, they are also taking more interest and learning more easily and quickly.'

– Arvind Kumar, Class 2 teacher

Other teachers focused on the effectiveness of paired learning:

'When we explain things to the children, it takes time for them to understand. But when they are learning from each other, it's much easier. The technique is working, children are learning more quickly.'

– Nitin Kumar, teacher

'Children are learning very well in pairs. Even those who remain, I think will be able to learn to read in another 20 days.'

– Ravindra Kumar

Another common point of feedback was the ease for teachers. Teachers found the ALfA programme to be simple to learn and implement.

'This was a very easy technique which we have adopted and are using with our children. I think this technique should be used everywhere throughout India.'

– Alla Rakha, principal

Harvard Research on Shamli

A case study of this ALfA pilot was written in a book by Harvard Graduate School of Education professor Fernando Reimers. Here are some key quotes from Chapter 8 of *Rebuilding Resilient Education Systems after the COVID-19 Pandemic*:

'Accelerating Learning for All (ALfA) helps children quickly gain FLN competencies. The pedagogical approach works as follows: students start with known words in the form of pictures, identify the sounds, and work backward to the letters.'

'The effect size of the project was 0.23 for Grade 3 students and 0.89 for Grade 5… the results suggest there is significant value in pursuing the ALfA model in other schools if implemented in a coherent, structured, and coherent manner.'

'We recommend the UP government incorporate the promising ALfA pedagogy developed by DEVI for the first 6 weeks to quickly establish a strong FLN foundation.'

'Our role in this is minimal. Children that need help, we help them. But mostly, children are learning on their own.'

– Amit Kumar, teacher

'Children learn easily from ALfA. It's a simple technique.'

– Pavitra Kumari, Class 1 teacher

Impressed with the outcomes, the Shamli district authorities invited our NGO, Dignity Education Vision International (DEVI Sansthan), to implement ALfA in 200 schools across Shamli. The Uttar Pradesh Department of School Education later signed an MOU to implement ALfA in over 3,000 schools across fifteen districts.

Faster & Further: ALfA around the country

Test results from our other implementation district (Sambalpur, Odissa) are similarly encouraging, as are informal teacher surveys and classroom videos (scan QR).

Photos from ALfA Himachal Pradesh project. Clockwise from top left: Signing MoU with Director of Elementary Education, Shri Ghanshyam Chand (far left); teacher training in Solan district; children enjoy the ALfA numeracy materials; two students learning to read Hindi using the ALFA materials

More recently, the district of Solan, Himachal Pradesh, has taken up ALfA to implement across the whole district. We have signed an MOU with the State's Ministry of Education to be used to serve hundreds of thousands of children. Discussions are underway in other states, including Mizoram and Uttar Pradesh. There are exciting opportunities ahead as ALfA starts touching the lives of more students and teachers.

While looking to scale up, we keep returning home to the slums of Lucknow to experiment further with the teaching methodology. In the summer of 2023, we ran a bold experiment: gathering some 80 children for a 15-day literacy and numeracy intensive. The results were impressive—many students made substantial progress across English, Hindi and Maths despite barely recognising letters or numbers at the start.

Scan the QR for a report on the Lucknow Summer Literacy Intensive.

Children from several slums of Lucknow came together to learn Hindi, English and Maths using hands-on activities in our summer literacy intensive, 2023

Looking Forward

Careful evaluation of these initiatives will inform how ALfA moves forward. But just as important as the literacy and numeracy data is the testimony we get from our learners and their teachers. Do our programmes improve their spirits, deepen their appreciation of school, and make it more likely that struggling students will stay enrolled? Our experience suggests that it does. In the end, that will be among our most significant gains.

ALfA has come a long way—from its start in the slums of Lucknow to now being on the cusp of state-wide implementation in Himachal Pradesh. Our NGO, DEVI Sansthan, launched the programme. But now ALfA is finding its way in the world—as partner NGOs, governments and schools adapt the programme to their contexts. We hope you will join us in this crucial work of building an education truly capable of solving the global literacy crisis.

> *'We need efforts which take the level of foundational literacy not just to pre-pandemic levels but to new heights. To this end, I want to congratulate Sunita Gandhi for her concept and programme, Accelerating Learning for All, which is being implemented in many parts of the country. Friends, it is possible to make people literate in 90 days using this programme. I hope that people will come forward in large numbers to join the programme and support it.'*
>
> **– Rajnath Singh,** Defense Minister of India
>
> (scan the QR to watch the entire speech [Hindi, English subtitles])

CHAPTER 11

Going Global – ALfA Around the World

In the last chapter, we saw how ALfA has been helping children and adults alike master foundational literacy and numeracy skills across many different states and districts of India. But it has also spread far beyond our borders, in widely varying contexts.

From the beaches of Maldives to the Peruvian Amazon, we are partnering with various organisations to improve literacy and numeracy programmes worldwide. Here, we give four case studies across as many continents to show how ALfA is proving to be an educational game-changer, from schools to slums to adult literacy settings.

ALfA has only spread globally very recently; the projects discussed are pilots at a much smaller scale than those in India. Still, as photos, videos, verbal testimonies, and test results emerge from our partner organisations, the early indicators are that ALfA is proving effective across different contexts.

Partnerships and projects discussed in this chapter are highlighted in this map

The Maldives – Ministry of Education & UNICEF

The Maldives has a population of 600,000 spread over nearly 200 inhabited islands. The highest point in the archipelago is just a few metres above sea level; thus, climate change presents a severe threat to the country. With fishing and tourism the primary industries, locals are hardy and resilient, skilled at finding ways around the challenges of remoteness.

As with India, the government of Maldives has done an excellent job ensuring near-universal school enrolment. However, quality concerns remain pressing—with a particular need to shift from rote memorisation to an education that builds twenty-first-century skills.[1]

The ALfA programme seeks to do just that. In September 2022, after discussions with the Ministry of Education, we conducted a baseline survey of 977 teachers from the nation's 2000-odd schools. They identified the most significant challenges as a lack of resources (55 per cent of respondents), busyness & high workload (49 per cent), lack of support from parents (39 per cent) and limited training (25 per cent).[2]

We began by partnering with the Maldives Ministry of Education to replicate the ALfA materials in the local language, Dhivehi. While English is crucial as a global language, we firmly believe in the importance of children having high-quality literacy programmes in their mother tongue.

The proposed use of ALfA in Maldives was modelled and analysed in Chapter 10 of *Rebuilding Resilient Education Systems after the COVID-19 Pandemic*.[3] Reimers and his Harvard graduate students recommended that the government try the ALfA curriculum in conjunction with teacher training.

To this end, we conducted a two-hour online workshop for literacy and another two-hour workshop for numeracy, with batches of 150–200 teachers at a time. The training explored the ALfA pedagogy and materials, equipping teachers with many practical activities to use in their classrooms. Across both literacy and numeracy workshops, over 90 per cent of participants said their views changed either 'much' or 'totally' due to the training.[4]

In post-training feedback forms, teachers' primary suggestion was in-person training. Their wish came true, as two delegations of educators—over 200 teachers, principals and government officials—visited Lucknow to see the ALfA programme in action and receive more in-depth training. The educators paid their travel expenses, indicating a strong level of commitment.

While teachers were eager to move forward swiftly, various external factors—including elections and a transition of power to a new government—meant that the project has started small, with an 18-school pilot (thirteen schools implementing ALfA, another five as a reference).

The project has been designed to investigate ALfA's efficacy under different modalities. Ten schools have been given hard copies of the ALfA books, while the other three use e-books on their smart boards. Each school was provided with numeracy hands-on materials. All thirteen schools do one ALfA period each day for literacy and numeracy.

Photos from Maldives ALfA project. Clockwise from the top left: Practicing shapes; Representing four-digit numbers using concrete objects; Making patterns; Depicting odd numbers using ice-cream sticks and toothpicks.

Along with the Ministry of Education, UNICEF Maldives is funding the pilot and studying it with a view to scaling it up. We eagerly await the results, but initial testimonies from teachers and parents indicate that the programme has a transformative impact. Photos and videos from the classes show a vibrant learning atmosphere, with students swiftly improving their literacy and numeracy skills and blossoming in confidence, communication and creativity.

Scan the QR or click here to hear directly from Maldivian teachers on the difference ALfA is making in their classrooms.

USA – Literacy Chicago

The USA is the world's largest economy—and most powerful nation. Yet they were not spared by the impacts of the Covid pandemic. The school disruptions and added environmental stress significantly affected American education systems, particularly lower-income families.[5]

Some parents are fighting back with innovative strategies. Recently, a group of parents filed a class action lawsuit against the state of California, demanding more resources and proven methodology to improve literacy in districts where as few as 10 per cent of the students are reading at grade level. This lawsuit led to a settlement granting $50 million for scientifically backed literacy instruction in 75 struggling schools.[6]

Kepler School

Kepler Neighbourhood School is a public charter school in Fresno, California, with lofty values: character, community, curiosity and creativity. Kepler began an ALfA pilot for their 4th-grade students in October 2023. Two months in, school superintendent Ms Rickie Dhillon had this to say:

'I am forever grateful for the opportunity you gave Kepler. In 4th grade, we had so many kids who couldn't write or read. Our 4th grade teachers are the most hardworking and understanding teachers, and they wanted kids to learn and read. My daughter is there in 4th grade, and her reading ability is now getting better each day, her scores improved significantly. Our school is excited, and our growth is accelerating. Everybody is praising the curriculum.'

The literacy crisis is even more pressing in Chicago, Illinois, where students have long suffered considerable disparities in opportunity. Shockingly, some 55 schools in Chicago did not have a single student at 'proficient' levels for reading and maths in 2021–22.[7]

And it is not just children who are being left behind. Up to 130 million adults (half the US population) struggle with low literacy skills.[8] Black Americans and immigrants are especially likely to have low literacy levels due to substandard education opportunities.[9]

Literacy Chicago is a 55-year-old community organisation that trains volunteers to run literacy classes for underprivileged Chicagoans. From April to June 2023, Literacy Chicago ran a small ALfA pilot for fifteen

Literacy Chicago: Volunteers' Perspectives

'A positive aspect of the ALfA reading programme is that students can work at their own pace. Some students may go through the first five lessons quickly; others may need to work on them slowly, repeating some over and over. Everyone makes progress, and the beauty of the faces on those who achieve even a little success is inspiring. Moreover, a little success opens the way to more enthusiastic practice when students see that they can achieve.'

– Marcia Banzuly

'This programme is fun to teach, easy for students to follow, and creates community and quick, efficient learning. The organisation of the lessons and plans is clear and supportive. I recommend it.'

– Alexandra Murman

'My students are adults ranging from twenties to eighty. Probably some of them have learning disabilities. They have negative experiences with testing and reading.

I am not a trained teacher, but I found the material very easy to use. There were a few British/Indian expressions that are not used or used differently in American English but that was not a big problem. One learner complained that the material was too easy and refused to continue! The ones who continued the process have positive results, including more participation, more openness, and a new ability to sound out words. All test scores went up.

The students liked working together, generally. A few students could not work in pairs and that took up a lot of teacher time. Some pairs have become close friends. I have a hard time retreating from the traditional teacher role and letting them help each other.

The math lessons are a brief introduction. I had to add a lot more exercises in addition and subtraction. I have had to become a math teacher but that has been interesting for me. Math scores have gone up significantly.'

– Teresa Kennedy

adults with literacy levels ranging from ground zero to third grade. To evaluate ALfA's efficacy compared to traditional methodologies, they ran a separate class using their earlier literacy materials and methods. Group A (3 students) attended only the ALfA class, while Group B (6 students) attended only the traditional class. Group C (6 students) participated in both classes, enabling an analysis of mixed methodologies.

Using a projector and the ALfA e-book, supplemented by hands-on literacy and numeracy materials, participants worked through the programme in pairs. Classes were conducted three times a week over three months, and then the learners' literacy levels were tested again.

The results were impressive. The ALfA group, some of whom could barely recognise a letter at the start, made rapid progress in reading and writing. The average rate of literacy improvement in the ALfA group was 6-fold greater than the control group.[10] Teachers also reported the power of the new pedagogy.

Interestingly, Group C students—who attended both traditional and ALfA classes—did no better than the control group. Joanne Telser-Frère, Director of Program Development at Literacy Chicago, attributes this to confusion arising from mixed methodologies. The sample size is small, but the results suggest that ALfA is best used as a stand-alone programme rather than being 'tacked on' to a more traditional pedagogy.

Volunteer teachers in the ALfA class also observed transformations extending beyond academic skills:

- **Confidence** among the students has soared, evident in their willingness to engage in class discussions. Their newfound assertiveness has translated into a more active role in expressing thoughts and tackling issues.
- **Attitude** towards reading underwent a noticeable shift. Once-hesitant participants now raise their hands, eager to showcase their newfound skills in front of the class.
- **Collaboration** has been embraced with a newfound willingness. While participants had previously resisted working in pairs, it is now a norm across the classes due to the experiences of the ALfA pilot group, who have now been integrated among the rest of the students.
- **Connectedness** has created ripple effects that extend beyond the classroom, with instances of spontaneous help observed among the ALfA pilot group. Whether assisting peers or seeking help themselves, these students have felt closer to each other.

Literacy Chicago is a powerful example of how new techniques can help plant the gift of literacy at any age.

Literacy Chicago: Learners' Perspectives

'It helps me spell. I can focus better and am learning to recognise the sounds.'

– Osman

'Now I know how to pronounce the words because I know the sounds of the letters.'

– Darian

'Now I can pace myself. You learn the sounds and break down the words to sound them out, it is easier to read.'

– Linnea

'I am making progress learning the sounds of the letters. It is helping me to know the meanings of the words I am reading.'

– Dahla

Photos from Literacy Chicago. Clockwise from the top left: a volunteer and learner do a role-play; two learners play a game with the letter cards, counting with matchsticks and recognising numbers, and a volunteer with the first learner

Scan the QR or click here to watch a video of the first Chicagoan learner trying out the ALfA programme.

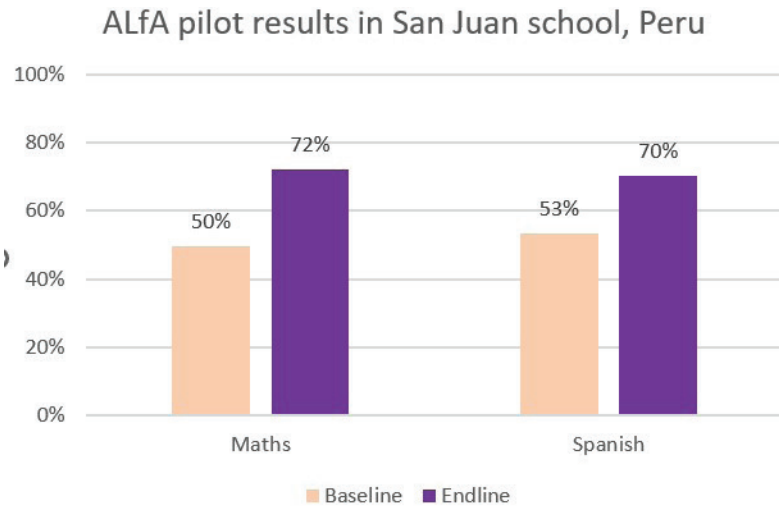
Peru – Arca Beta NGO

Peru is a vast, sparsely populated country, spanning from the Andes mountain range in the West to the Amazonian rainforest in the East. The government has made substantial investments in school systems, spending 17 per cent of its national budget on education.[11] But many gaps remain, particularly in remote tribal areas, which often lack infrastructure.

In this context, grassroots NGOs like Arca Beta are crucial.[12] Arca Beta runs several schools in and around the remote Amazonian city of Iquitos—the world's largest city without road or rail access.[13] After discussions in 2022, Arca Beta and DEVI Sansthan started to work together in early 2023 with online training and empowerment sessions.

We provided the organisation with ALfA Spanish and numeracy materials, and they have begun implementation in Grades 1-3 of two schools.

Initial photos, videos and testimonies have been encouraging. Tests in November-December 2023 confirmed the impressive progress, with children's maths and Spanish scores improving by 22 and 17 percentage points, respectively, after just three months of implementation.



Scan the QR or click here to watch a video of ALfA implementation in Peru.

Children in Iquitos, Peru developing their literacy and numeracy skills with the ALfA programme

Teacher Testimonies from Peru

'I want to testify of the progress we have made to date with the Grade 3A students of our educational institution in Iquitos. I started with 22 children, many of whom had some challenges with reading and mathematics. We have been able to achieve progress - little by little, I have seen improvement, more than anything, in terms of reading. Of the 22 who started, 19 children can now read fluently, and the rest are in process. I would have liked it to be 100 per cent, but there are many reasons, mainly because they often miss school.

Parents have also participated. They know about this project, ALFA, through this Indian NGO. Parents are happy because their children were at a disadvantage compared to those who already knew how to read but now are making good progress. I feel delighted with everything I have been observing in my children. Very grateful, and it will be an excellent experience for us to put this small project into practice next year.'

– Zenaida, Grade 3 Teacher, Sachachorro school, Iquitos, Peru

'This year, I have 30 students. When the students came first, they wrote scribbles; they didn't know how to read. The students began to pronounce the images and words from the communication book. They worked in pairs. They began to form simple words, then more complex words and small sentences. Now, 80 per cent of the students are reading. The parents and I are very grateful to this group [DEVI Sansthan] for supporting us with the strategies to apply, especially working in pairs so the students can read quickly. We are hoping that it will be not only in 2023 but also that we will participate in this group next year. It is engaging and exciting for the students. Thank you so much.'

– Sheila, Grade 1A Teacher, Sachachorro school, Iquitos, Peru

Kenya – Path Youth Organisation

Kenya is a rapidly developing country in eastern Africa. With a burgeoning young population—the nation's median age is just 20—Kenya has tremendous future potential.[14] Strengthening the education system is critical for this potential to be realised.

To this end, the NGO 'Path Youth' works for young people's education in Kenya. DEVI Sansthan conducted an online workshop for the master trainers of Path Youth, empowering them with the ALfA methodology. Path Youth then employed and trained community volunteers to teach children's classes.

Akeyo's Story

Akeyo, a girl of 9, came from a background with limited access to educational resources, and she struggled with reading and math. Her journey from uncertainty to confidence showcases the transformative impact of the ALfA programme.

Initially, Akeyo was hesitant to participate. She shied away from reading aloud and struggled to grasp basic math concepts. However, the bootcamp's various activities, including interactive games, paired reading sessions, and creative math exercises, captured Akeyo's interest. This encouragement motivated her to engage in activities and overcome her initial hesitations.

Paired activities allowed Akeyo to interact with her peers. Collaborative learning enhanced her social skills and exposed her to diverse perspectives, fostering a sense of belonging and boosting her self-esteem. These engaging activities made learning fun and allowed her to apply newly acquired skills in real-life scenarios.

As the bootcamp progressed, Akeyo's reading fluency and math comprehension improved noticeably. She began reading confidently in front of the group and demonstrated a solid grasp of foundational math concepts that had previously eluded her. One of the most heartwarming moments occurred when Akeyo confidently solved a math problem in front of her peers, beaming with pride.

Akeyo's success story is a testament to the transformative power of the ALfA Bootcamp. It demonstrates how targeted support, engaging activities, positive reinforcement, and peer collaboration can empower children to overcome challenges, develop confidence, and build a strong foundation for lifelong learning.

NB: Akeyo is a fictional name for confidentiality purposes.

Path Youth's first use of the programme was in an FLN bootcamp in August 2023 in Mombasa, one of the country's oldest and largest cities. Some 102 children aged 5–13 attended the camp, held daily for a month during the school holidays.

The literacy intensive was a great success, with most students recording substantial improvements in reading and math skills, as measured by standardised assessments and other indicators.

Beyond literacy and numeracy, participants' confidence and motivation for learning increased markedly as they experienced success and enjoyment in reading and math activities. A further positive was strengthened community involvement and support for children's literacy and numeracy development.

Testimonials from the Literacy and Numeracy Bootcamp

'I am very grateful to be part of this literacy and numeracy bootcamp. I have learned a lot, and now I have more confidence in reading and counting. Thank you for providing this opportunity to improve our education.'

'This bootcamp has completely changed my life. I had significant difficulties with reading and counting, but now I can say I have gained enough skills to overcome those challenges. I thank all the teachers for their dedication.'

'The literacy and numeracy bootcamp has made a significant difference in my life. I was very worried about my learning abilities, but now I can proudly celebrate my achievements. Thank you for providing this essential service.'

From Africa to Asia to the Americas, ALfA is spreading a new way of learning age-old reading and writing skills. If your organisation is interested in working together to use the ALfA programme in your context, we've set out some simple steps in the next chapter so we can get started immediately.

CHAPTER 12

Taking It Forward: Implementing ALfA in Your Context

Did you enjoy those ALfA case studies from across India and worldwide? You may be excited to try it out in your context but unsure how to begin. If so, this chapter is for you. Here, we share a seven-step roadmap to help you proceed on your ALfA journey.

As ALfA has primarily been used in a school setting, we created this roadmap accordingly. However, many of the steps would be similar in an out-of-school literacy or adult education programme.

We encourage you to try it out initially as a research pilot—for a limited duration, in a select number of schools, using a scientific testing process. Once you've seen the impressive learning outcomes for yourself, it will be time to scale up.

Planning

The first step is to discuss the ALfA programme with your organisation and key stakeholders. This might mean government officials, administrators, school principals, or more, depending on the context. Together, you can decide on the basic parameters of the implementation, including:

- **Scope:** An important decision is how many and which schools will implement the programme. We've had numbers ranging from a single school to hundreds of schools across several districts.
- **Duration:** Completing the ALfA programme with one period (e.g. 45 minutes) per day each for literacy and numeracy generally requires 45 days of implementation (two to three school months, depending on the number of holidays). Alternatively, the programme can be used in an intensive boot camp. Typical 'boot camp' instruction involves using the whole school day (up to four hours) over 20–25 instructional days.
- **Class level:** The ALfA programme is effective across all the primary grades, from nursery to Grade 5. However, some schools have implemented it only in their younger classes (e.g. Kindergarten to Grade 2). In contrast, others have targeted grades about to sit a standardised test (in India, Grades 3 and 5 do the National Achievement Survey).

- **Research Design:** A rigorous research design requires randomisation, with some reference schools keeping their old programmes, allowing the comparison of results between two similar cohorts. This randomisation can be done at the administrative level, for instance, randomly selecting half of the district blocks as the implementation group and the other half as a reference group. Randomised allocation can also be done at the school level or by section within a large school.
- **Modality:** Another critical decision is whether to use paper-based ALfA books or rely on e-books and apps. Going paperless can be low-carbon and low-cost for contexts with widespread availability of internet, smartphones and smartboards. In other contexts, the paper booklets are excellent. Paper use and printing costs remain low thanks to the slim booklets and paired learning design.

Memorandum of Understanding

Once you've worked out the plan, DEVI can sign a Memorandum of Understanding (MOU) with your organisation. Typically, we serve as the knowledge partner—offering free learning resources, training, and know-how. Your government/organisation leads the show as the implementation partner. Often, it is a non-financial MOU, particularly for pilot projects. The MOU will also cover technical but essential topics like intellectual property, data sharing and privacy.

Training

Teacher training may be the most crucial step. The ALfA books and activities are excellent, but only insofar as the programme's philosophy and pedagogy are followed. Training inspires teachers, renewing their vision and equipping them with the practical skills they need in their classroom. Training can be done in person or online, with each having its pros and cons:

Online Advantages

- Zero cost: avoids the need of venue, travelling, etc.
- Convenient & flexible for participants
- Easy-to-watch videos of classroom implementation

In-Person Advantages

- More personal connections and better networking opportunities
- A broader scope of paired activity demonstrations is possible
- Can be combined with the distribution of physical materials

Depending on your context, we can also opt for a hybrid approach. For instance, online training of your master trainers, who then provide in-person training for all the teachers.

Many school systems around the world are stretched for human resources. How is it possible to keep schools open while still sending teachers for training? Fortunately, the ALfA methodology is simple and intuitive to grasp, with 4 to 8 hours of training is enough to get teachers started. There are several ways to conduct training without impinging on the school calendar:

- Half the teachers of a school can come on one day, the other half on a second day; such that schools keep running on both days.
- Training can be conducted on a public holiday or official professional development day.
- Training can be done online after the end of a school day.

Massive Open Online Training

Online training is often considered to be ineffective, especially if done for a large group. But is it possible to run a large-scale, interactive and engaging online workshop? We decided to give it a try, running a 'Massive Open Online Training' (MOOT) in March 2023. We ran separate 2- or 3-hour English and Hindi sessions to train teachers on the ALfA literacy and numeracy pedagogy.

Showing videos of ALfA classroom implementation, we asked questions of the participants, who responded via the live chat. Sessions were broadcast live on YouTube, Facebook, and several other streaming platforms, and recordings were available to watch later. YouTube recorded 25,000 views across the sessions, with participants from over 50 countries and 26 states of India. Anonymous opinion surveys after the training found that:

- 86 per cent of participants said they would implement ALfA in their classrooms
- 93 per cent reported the online format to be effective
- 99 per cent said they had takeaway points

Baseline Testing

Before starting the programme, conduct rigorous testing across a sample of implementation and reference group schools. You can use your country/state's standardised test papers, or we can provide our materials based on India's NIPUN competencies. Ideally, testing will not be conducted by

teachers but rather by some third party to align with best practices in transparent data collection.

As discussed in Chapter 7, the assessment should be low-stakes for students. We are not interested in student's individual performance but rather in the overall trends.

Parent Orientation and Open Days

When the programme starts in earnest, keeping all stakeholders interested and involved is essential. That includes parents! Parental buy-in is crucial, but sometimes, parents fear change. They seek out the aspects of school they are most familiar with from their childhood—lots of memorisation, copious homework, and stressful tests.[1] Unfortunately, these are the very components that require a drastic overhaul! In this context, it is crucial to engage with parents, helping them experience the power of a new approach.

It helps to start by showing parents the evidence for ALfA outlined in the previous chapters. More than statistics and studies, videos of ALfA classrooms can help persuade and inspire parents. Better yet, try a school open day. Set up learning tables around different themes. For instance, one pair might be doing multiplication, another reading newspapers, and another doing fraction addition. Let parents wander the room, soaking in the atmosphere and asking the pairs questions. You can also turn the tables, with children asking the questions and parents trying out a hands-on approach to problem-solving.

Because children learn so rapidly using the ALfA programme, parental scepticism swiftly turns to satisfaction and praise.

Implementation

With all the puzzle pieces finally in place, it is time to go for it! Well-trained and well-equipped teachers can use the ALfA programme to swiftly empower their students with literacy and numeracy skills as well as critical twenty-first-century competencies. You can implement a weekly teacher meeting to enable teachers to discuss any questions or challenges.

Teachers should keep records of their student's progress throughout the implementation period. They can also post photos and videos in WhatsApp groups or Google Folders to create a powerful visual record and help inspire other teachers.

Data Analysis and Reflection

After the implementation period, repeat the earlier testing process (preferably in the same sample of schools). This enables us to compare

rates of learning progress between intervention and reference group schools. Technology like the Pragati App[2] facilitates swift analysis of which competencies the children have mastered and which require more work.

Once you have analysed the data, it is time to share the results with key stakeholders. Reflect strategically on the process. What went well? What would you do differently next time? If there's a story of transformation to tell, feel free to share it with the media and a broader audience. Then, plan how to scale it up—in more schools, a broader geography, or across different grades.

Ultimately, the goal is to incorporate and integrate ALfA pedagogy and processes across your curriculum. Beyond literacy and numeracy, all grades and subjects can benefit from more discovery-based, child-led, and paired learning.

***

This simple, 7-step roadmap can help you navigate your ALfA journey. But there's always more help if you need it. We are here every step of the way, eager to partner with governments, community organisations, NGOs and schools to unleash a learning revolution. Reach out to us today (see contact details on the inside back cover) to arrange an online or in-person meeting to discuss how we can work together towards a holistic and joyful education.

The Cost of Inaction

Change is hard.

We might feel daunted by the scale of the challenge. But remember, the cost of inaction is far greater. Literacy is critical to achieving all sustainable development goals—from ending poverty and hunger to achieving greater equality, improving healthcare to strengthening institutions.

The price of sustained illiteracy is enormous. Illiterate people earn 30 per cent-40 per cent less than their literate counterparts.[3] It has a huge social impact: worse health, lower mental well-being, and higher crime, to mention just a few. Tallying up all the different losses conservatively, experts estimate that illiteracy costs the world $1.2 trillion annually.[4]

In the digital age, the gap between people who can read and those who can't is growing wider and wider. The costs of illiteracy may continue to grow unless we take drastic action.

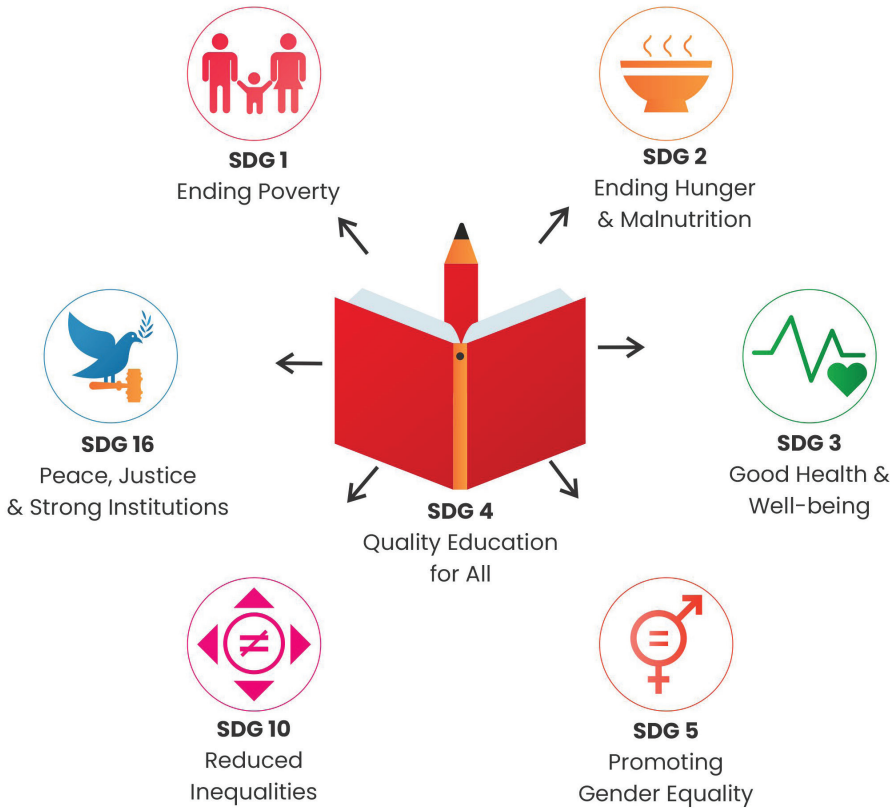
Compared to the costs of maintaining the status quo, the price of change is nothing. The ALfA toolkits cost around $1 to print and are

available freely as e-learning materials. The initial ALfA implementation takes just a few months to make children literate. Later is too late for millions. The future can't wait.

Given the low learning levels, boredom and staleness that the traditional education system produces, we have little to lose, and so much to gain.

So what are we waiting for? If not now, then when?

Let's start with building an education system capable of ending the global literacy crisis and ensuring every child and adult has the skills they need to flourish.



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