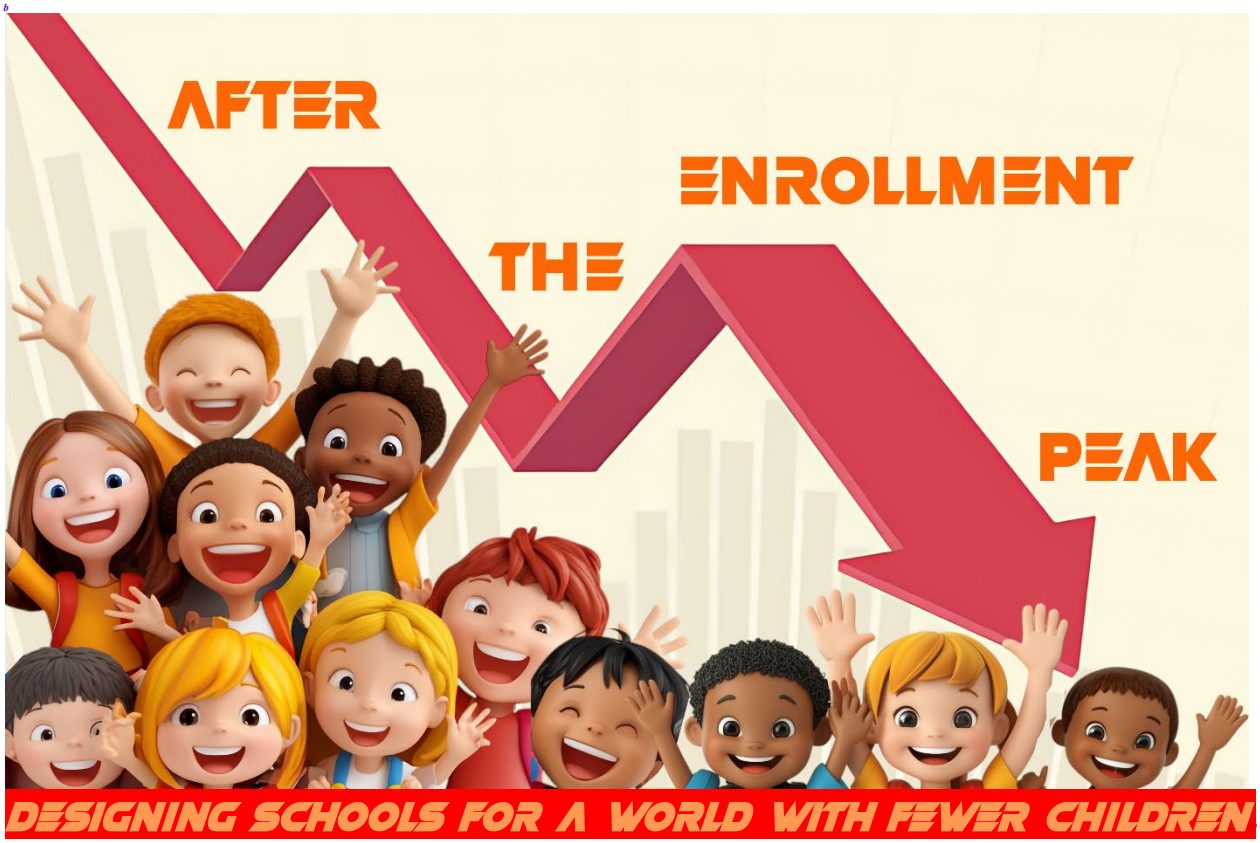


THE SCHOOL SYSTEM BUILT FOR GROWTH

Modern education systems were largely designed around an assumption so deeply embedded that it seldom needed to be stated: there would be more children tomorrow. More classrooms would be required, more teachers would need to be recruited, and new campuses would be constructed as cities expanded and participation widened. Ministries planned for rising cohorts; districts measured progress partly through access and expansion; universities developed pipelines for an enlarging teaching profession. For much of the twentieth century, this logic was entirely rational. Population growth, urbanization, compulsory schooling and widening educational participation made expansion the dominant grammar of system design. That grammar is now beginning to fracture.

The United Nations Department of Economic and Social Affairs describes the demographic transition as the historical movement toward longer lives and smaller families. Its *World Population Prospects 2024* reports that fertility is already below the replacement level of 2.1 births per woman in more than half of all countries and areas. Populations in 63 countries and areas—containing 28 per cent of the world's population—had already peaked by 2024, including China, Germany and Japan, while other countries will move into similar demographic territory over the coming decades. The significance is not simply that some national populations will become smaller. Their age structures, spatial distributions and dependency patterns are changing as well, creating consequences for institutions built during periods of demographic expansion.

Education encounters these changes earlier than headline population decline because schools experience demography through **cohort succession**. Fewer births become smaller early-childhood cohorts, then smaller primary intakes and eventually shrinking secondary populations. A country does not need to be losing population overall for individual regions or school systems to encounter contraction. Migration, housing, employment and urbanization can simultaneously concentrate young families in some places while leaving rural, peripheral or

economically declining communities with progressively fewer children. Demographic change enters education not as a single national trend but as an uneven reorganization of where learners are located and how many institutions are required to serve them.

At the same time, it would be a serious error to narrate the future of education as a universal movement toward fewer students. UNESCO's 2026 Global Education Monitoring Report estimates that **273 million children and young people remain out of school globally**, with Central and Southern Asia and sub-Saharan Africa accounting for approximately three quarters of that population. In many countries, population growth continues to intensify pressure for teachers, classrooms and educational access even while other systems confront surplus capacity. Enrollment in sub-Saharan Africa, for example, continues to expand substantially even as low-fertility societies debate school consolidation. The defining global condition is not demographic decline but **demographic divergence**: expansion in some systems, contraction in others, and frequently both within the same country.

That divergence makes declining enrollment far more complicated than its arithmetic suggests. A school serving substantially fewer students does not shed costs in the same proportion. Buildings continue to require maintenance and utilities; safeguarding and leadership remain necessary; transport networks must still operate; and specialist expertise may be required even when only a small number of students need it. Educational capacity is composed partly of divisible costs and partly of institutional capabilities that cannot be reduced student by student. A physics teacher, counsellor, special-education specialist or school leader does not become proportionately less necessary simply because enrollment falls by a particular percentage.

Nor does demographic contraction automatically resolve teacher scarcity. The UNESCO–Teacher Task Force *Global Report on Teachers* estimates that the world will require approximately **50 million additional primary and secondary teachers by 2030** to achieve universal education, with shortages driven not merely by enrollment growth but by attrition, retirement, recruitment difficulties and the distribution of qualified professionals. The coexistence of declining cohorts in some regions and teacher shortages in particular subjects or locations exposes the weakness of treating workforce planning as a simple ratio between teachers and students.

The first strategic error, then, is to interpret demographic contraction principally as a budgeting problem. A system may indeed need fewer classrooms or fewer employees in some locations, but proportional retrenchment can destroy capacities that are difficult to rebuild. The more consequential question is which capabilities should contract, which should be redistributed, and which should become more intensive precisely because there are fewer learners.

A second error is to assume that **school closure itself constitutes a demographic strategy**. Consolidation can sometimes be educationally justified. Larger institutions may offer specialist teachers, facilities or programmes that very small schools struggle to sustain, and research on educational consolidation has found benefits under some conditions. Yet the evidence is markedly context-dependent. Research on rural school consolidation in China, for instance, shows that policies designed around economies of scale can produce very different effects across populations. A 2022 *World Development* study of minority regions found that consolidation moved students toward better-resourced but more distant schools while also reducing minority-language provision and producing unequal educational effects, particularly among already disadvantaged groups.

Research from European rural communities similarly complicates any assumption that closing a small school merely removes an inefficient facility. Studies in Sweden describe village schools

as **time-space hubs** around which family routines, social networks and community activities are organized; their disappearance alters far more than students' classroom location. Finnish research has found that population decline accelerated in communities following primary-school closure, while a quasi-experimental study of eight Danish village-school closures identified a significant longer-term deterioration in local population development. These findings do not establish that every small school should remain open. They demonstrate instead that school restructuring can redistribute social, geographical and economic costs beyond the education budget itself.

This is why contemporary research increasingly places school closure within questions of **spatial justice and territorial equity**. Educational opportunity is not distributed only through curriculum standards or funding formulas; it is also distributed across space. Decisions about where schools, teachers and specialist services are located determine who travels farther, whose communities retain public infrastructure, which families can realistically access provision, and which regions absorb the consequences of institutional consolidation. Research on school closures in Ontario, for example, has found unequal socio-spatial patterns, including higher incidence in deprived communities, reinforcing the case for equity-oriented rather than purely efficiency-oriented decision making.

The challenge after the enrollment peak is not to make a shrinking system resemble a smaller version of the one that preceded it. It is to redesign educational capacity for a different demographic reality. That redesign reaches into pedagogy, workforce architecture, school networks, curriculum breadth, infrastructure, transportation, technology, community relationships and the very meaning of a campus. Smaller cohorts could create opportunities for deeper personalization, stronger inclusion, richer professional collaboration and more deliberate use of teacher expertise. They could equally produce fiscal retrenchment, fragmented provision, hollowed-out rural schools and a cycle in which declining enrollment generates declining quality, thereby weakening communities further.

The difference will depend on whether leaders respond to demographic change primarily through **subtraction or institutional adaptation**. A future-ready education system must confront a question for which the architecture of mass schooling was never fully designed: **How do we preserve educational breadth, equity and intellectual vitality when there are fewer learners to distribute across the schools, teachers and communities we have built?**

1. DEMOGRAPHIC TRANSITION ENTERS THE CLASSROOM

Demographic transition theory offers the clearest starting point for understanding why shrinking enrollment is not, in many systems, a temporary fluctuation but part of a durable structural transformation. The theory describes the historical movement from societies characterized by high mortality and high fertility toward longer life expectancy and smaller family size. Mortality typically declines first; fertility subsequently falls; population growth slows and may eventually stabilize or become negative. The United Nations Department of Economic and Social Affairs now uses this framework explicitly to interpret contemporary population trajectories and to distinguish countries according to the timing of their population peaks. In 2024, 63 countries and areas containing 28 per cent of the world's population had already reached their peak population size, while another 48 are projected to peak between 2025 and 2054. By contrast, populations in 126 countries and areas are expected to continue growing through 2054.

Education encounters this transition through **cohort succession**. A falling fertility rate does not immediately empty secondary schools. It first reduces the number of births, then the size of

early-childhood cohorts, followed by primary intakes and, eventually, secondary enrollment. This temporal sequencing gives education systems something strategically valuable: advance warning. The demographic transition can often be seen approaching through birth registrations, early-childhood participation and local population movements years before its effects become visible in secondary schools or surplus buildings. The policy failure occurs when those signals remain confined to demographic reports rather than being interpreted as intelligence about future staffing, infrastructure, curriculum provision and school-network design.

The transition is also profoundly uneven. UN projections place China, Germany, Japan and the Russian Federation among countries whose populations have already peaked, while Brazil, Iran and Viet Nam belong to the group expected to reach their peaks during the next three decades. India, Indonesia, Nigeria and Pakistan, meanwhile, are among the countries projected to continue growing through at least 2054. Such contrasts make the idea of a singular "future of schooling" untenable. Some governments will need to manage sustained contraction while others continue expanding access, and many will be required to do both simultaneously in different parts of the same national system.

National trajectories, moreover, are often too coarse for educational planning because **demography has a geography**. Eurostat's 2026 regional analysis illustrates this clearly. Although the European Union's total population increased during 2024, largely because positive net migration outweighed negative natural change, population still declined in 36.9 per cent of EU regions. Many of the regions experiencing the strongest natural decline were rural or remote areas characterized by low fertility and older population structures. National stability can coexist with sharp territorial contraction, just as growing metropolitan corridors can coexist with rapidly ageing or depopulating peripheral communities.

This produces what might be described as **territorial demographic asymmetry**: a mismatch between where educational capacity has historically been built and where future learners will actually live. Schools, buildings, specialist facilities and transport networks are comparatively immobile, while population distribution can change through migration, housing markets, employment restructuring, urbanization and regional economic decline. Educational systems may consequently inherit surplus capacity in one locality while experiencing shortages only a few hours away. Aggregate enrollment forecasts cannot capture this problem adequately; planning must also examine spatial distribution, accessibility, mobility and the changing relationship between schools and their surrounding communities.

Demographic contraction further disrupts the assumption that fewer students should automatically generate proportionate savings. Education contains substantial **indivisible and fixed costs**. A school still requires leadership, safeguarding, heating or cooling, maintenance and a minimum level of curriculum provision regardless of whether enrollment falls modestly or substantially. Research on economies of scale in education has repeatedly found that per-pupil costs tend to be higher in very small schools and districts because fixed and administrative costs are spread across fewer learners. At the same time, the literature does not support the conclusion that continually increasing school size produces unqualified educational benefits. A systematic review of secondary-school size found evidence of lower per-pupil costs at greater scale but also emphasized the absence of a simple optimal school size across educational outcomes, while cost-function research has similarly shown that potential economies of scale must be weighed against organizational and educational consequences.

Recent school-finance research reinforces the same problem from the perspective of declining enrollment. Funding often falls relatively quickly when student numbers decrease, while expenditure cannot adjust at the same speed because districts retain buildings, staff obligations

and other fixed costs. This creates an asymmetric fiscal problem: revenue may follow students downward more rapidly than institutions can responsibly reduce capacity. In rural and sparsely populated areas, the dilemma becomes even sharper because eliminating apparently inefficient capacity may increase transport distances or undermine reasonable geographic access to schooling.

This is why the administrative language of "declining enrollment" can obscure the scale of the transformation. It sounds as though the challenge concerns fewer names appearing on registration lists. In practice, demographic contraction changes the **density, distribution and viability of educational provision**. It raises questions about the minimum scale required to sustain curriculum breadth, how far children should reasonably travel, whether scarce specialist teachers should belong to individual campuses or wider networks, how professional isolation can be reduced in very small schools, and whether every campus must continue operating as a conventional self-contained institution.

The demographic transition enters the classroom long before it becomes visible as an empty building. It first appears through smaller cohorts, uneven enrollment patterns, altered age structures, shifting teacher demand and widening differences between localities. The strategic task is not to wait until a school becomes financially untenable and then respond through closure. It is to interpret demographic change early enough to redesign educational capacity while leaders still have meaningful choices about what to preserve, redistribute and transform.

2. FROM SCHOOL CLOSURE TO NETWORK DESIGN

When enrollment begins to contract, consolidation is often the most visible institutional response. A school falls below a preferred enrollment threshold, per-pupil operating costs rise, staffing becomes difficult, and merging campuses appears to offer an administratively rational route toward greater efficiency. Under some conditions, that conclusion is defensible. The difficulty begins when enrollment size is allowed to function as a proxy for educational viability, because the value of a school cannot be understood adequately through unit cost or headcount alone.

Research on school closure increasingly demonstrates why the problem is more complex. In their major review of closure research, Mara Casey Tieken and Trevor Ray Auldridge-Reveles argue that closures should be understood partly through the lens of **spatial injustice**. Across both rural and urban contexts, closures are not distributed neutrally: they can remove educational and community institutions from places already experiencing economic or social disadvantage and redistribute the consequences of restructuring unevenly across populations. Their analysis challenges the assumption that efficiency, equality and improved educational opportunity necessarily move together.

Spatial justice matters because educational opportunity is geographically constituted. A school can remain formally "available" while becoming substantially less accessible when travel time increases, transport becomes unreliable or daily journeys impose greater logistical demands on children and families. A 2024 systematic review in *Educational Review*, synthesizing 26 studies across several countries, found that longer travel times and transportation difficulties were generally associated with poorer academic outcomes, except in circumstances where additional travel enabled students to reach substantially higher-quality schools. The evidence does not imply that longer journeys are invariably harmful. It does demonstrate that consolidation transfers part of the cost of system reorganization from institutions to learners and households.

Geographic isolation also interacts with the quality of educational provision itself. Bonilla-Mejía, Londoño-Ortega and Henao's 2024 study of rural schools in Colombia found that greater distance from towns and state capitals was associated with lower elementary-school test performance. Importantly, part of this disadvantage was explained by differences in teachers' educational attainment and employment stability. Geography, in other words, affects education not only because children travel farther but because remote schools often operate within more fragile professional labour markets. Closing one local institution does not automatically eliminate territorial disadvantage; students may be relocated while the underlying problems of transport, teacher recruitment and unequal regional capacity remain.

None of this justifies romanticizing every small school or presuming that closure is necessarily harmful. Consolidation can improve educational opportunity when it gives learners access to stronger staffing, leadership, facilities or pathways that very small institutions cannot sustain. Li and Gao's 2024 study of rural China found that school consolidation increased the probability of students entering high school, taking the college entrance examination and completing more years of formal education. Other longitudinal research on China has similarly identified gains in years of schooling associated with consolidation, partly through improvements in educational inputs and school quality.

Yet even the Chinese evidence illustrates why effects must be treated as conditional rather than universal. Hannum, Liu and Wang's analysis of China's rural school-closure initiative examined consolidation precisely because the promise of economies of scale had to be weighed against longer travel distances and potential inequalities in access. More recent evidence similarly suggests that long-term attainment gains can coexist with increased primary-school dropout among particular groups, including girls, children whose parents have less education and learners in economically weaker regions. Consolidation may improve average outcomes while distributing its costs and benefits unevenly.



Evidence from Rajasthan provides another useful counterpoint. Vinitha Varghese's analysis of a large-scale school-merger programme found no overall decline in village enrollment or teacher numbers following consolidation. The reform increased students' access to principals and added teachers within affected villages, and girls' enrollment increased slightly. At the same time,

achievement effects were mixed: the proportion of high-performing Grade 5 students declined, while effects for Grade 8 students were comparatively small. The significance of such findings is not that consolidation either "works" or "fails," but that its consequences depend on what educational capacities are gained, what access costs are created, and which groups bear them.

The appropriate response is neither indiscriminate closure nor unconditional preservation. Demographic contraction requires a shift from **campus-by-campus viability calculations to school-network design**. The relevant unit of planning is not always the individual school but the wider ecology through which students obtain teachers, subjects, specialist support, facilities and social connection.

A network perspective asks a different class of questions. Which educational functions genuinely require a fully staffed standalone campus? Which expertise can be shared across several schools without weakening relationships or access? Can science laboratories, arts facilities, counselling, special education, advanced courses or professional development operate as regional assets? Could several smaller campuses share leadership, curriculum planning or specialist teachers while retaining local provision for younger children? Might declining-enrollment buildings be repurposed as learning and community hubs rather than treated immediately as redundant infrastructure?

Existing practice shows that such arrangements need not remain theoretical. In South Korea, for example, provincial education authorities have developed forms of cooperative provision in which small rural schools operate shared curricula, joint programmes and common attendance zones rather than relying solely on closure. Jeonbuk's current *Eoulim School* model includes curriculum-cooperation arrangements between small schools and shared catchment mechanisms intended to sustain rural educational ecosystems. Such models do not eliminate the pressures created by demographic contraction, but they illustrate an important institutional alternative: **sharing capacity without necessarily centralizing every learner**.

Age and educational stage should also influence network design. Proximity matters especially for younger children, whose schooling is more dependent on family routines, travel time and local relationships. Older students may be better positioned to access larger specialist centres, shared advanced courses or regional facilities, provided transportation and pastoral support are adequate. A rational post-peak network may preserve dispersed early-years and primary provision while concentrating some secondary and specialist functions. The appropriate architecture need not be identical across the educational lifespan.

This leads to a more useful planning principle: **capacity should be distributed according to educational function rather than inherited institutional form**. A campus does not need to provide every service independently in order to remain educationally valuable. Equally, a larger consolidated institution should not be assumed superior because it produces lower unit costs. The relevant test is whether the network as a whole preserves strong teaching, curriculum breadth, meaningful relationships, reasonable travel and equitable access while deploying scarce expertise intelligently.

Demographic contraction creates an opportunity to reconsider the assumption that every school must function as a self-contained organization. Future systems may increasingly depend on federated campuses, itinerant specialists, shared professional teams, cooperative curricula, regional learning hubs and multipurpose infrastructure. These arrangements allow local presence and system-wide expertise to coexist rather than forcing policymakers into a binary choice between maintaining every existing institution and closing it.

The strategic objective is consequently not to preserve buildings from change, nor to treat consolidation as inherently progressive. It is to reorganize capacity without producing **educational deserts** in the pursuit of efficiency. A system designed for fewer children must become more spatially intelligent: capable of removing genuine redundancy while preserving proximity, professional quality, curriculum breadth and educational opportunity across the places where children actually live.

3. THE TEACHER WORKFORCE PARADOX

Declining enrollment appears, at first glance, to offer an obvious solution to teacher shortages. If there are fewer students, fewer teachers should be required. Yet educational labour markets rarely behave with such arithmetic simplicity. Teacher demand is shaped not only by cohort size but by attrition, retirement, subject specialization, geographic distribution, inclusion requirements, class organization and the professional conditions that determine whether educators enter and remain in the workforce. A system can experience demographic contraction and teacher scarcity simultaneously.

Recent global evidence makes this distinction increasingly important. Updated data released by UNESCO, the UNESCO Institute for Statistics and the International Task Force on Teachers for Education 2030 in October 2026 estimate that approximately **50 million additional teachers will be required worldwide by 2030** to achieve universal pre-primary, primary and secondary education. Crucially, 58 per cent of those teachers will be needed not because student populations are expanding, but to replace educators leaving the profession. Attrition converts teacher demand from a simple demographic calculation into a workforce-renewal problem. A shrinking school-age population may reduce aggregate staffing requirements in one part of a system while retirement, resignation or recruitment failure simultaneously produces shortages elsewhere.

Nor are shortages distributed evenly. International evidence on mathematics and science staffing illustrates how aggregate national supply can conceal profound institutional inequality. A 2026 longitudinal analysis using four cycles of TIMSS data across more than 40 education systems found that mathematics and science teacher shortages affected a majority of participating schools across successive cycles. Schools serving socioeconomically disadvantaged communities consistently reported substantially higher shortage rates than more advantaged schools, demonstrating that scarcity is not simply a question of how many teachers exist but of **where expertise is located and which learners can access it**.

Geography creates a parallel problem. A 2024 systematic review of initiatives designed to recruit teachers into regional and rural areas found continuing difficulties attracting candidates to geographically underserved communities. Alternative pathways and university–school partnerships showed promise, particularly when they recruited candidates with regional or rural connections, but the review also found limited systematic evidence that many recruitment initiatives produced durable workforce solutions. Demographic contraction does not necessarily move teachers toward the schools that need them. It can instead leave systems with simultaneous surplus and scarcity: too many positions in one locality, too little specialist expertise in another, and professional labour markets that do not reorganize as quickly as population patterns.

This means that post-peak systems need to replace the language of **workforce reduction** with that of **workforce rebalancing**. The strategic question is not merely how many teachers a system will require, but which expertise must be preserved, where that expertise should be located, how it can circulate across institutions, and which forms of professional work should

become more intensive as cohorts shrink. A smaller student population could release capacity for richer feedback, inclusion, mentoring, curriculum design, collaborative planning and sustained professional learning. If staffing is reduced mechanically in proportion to enrollment, however, the system may reproduce exactly the same workload, isolation and pedagogical limitations at a smaller scale.

The concept of **professional capital**, developed by Andy Hargreaves and Michael Fullan, provides a useful way of understanding this problem because it treats educational capacity as more than individual teacher headcount. Professional capital combines **human capital**—the knowledge and skill of individual educators—with **social capital**, the professional relationships through which expertise circulates, and **decisional capital**, the capacity to exercise informed judgment in complex educational situations. Demographic contraction makes these distinctions particularly consequential. A small school may remain professionally strong when specialist knowledge moves through well-designed networks, while a larger staffing establishment can remain educationally fragile when expertise is isolated and professional collaboration is weak.

Future workforce architecture should become more networked. Mathematics, science, languages, arts, special education, counselling and other specialist expertise need not always be owned exclusively by individual campuses. Regional professional teams, federated staffing arrangements, itinerant specialists, cross-school professional learning communities and joint appointments can allow scarce expertise to serve multiple institutions while maintaining local educational access. Digital collaboration can extend such networks further, but technology should increase the reach of professional expertise rather than provide an administrative rationale for withdrawing human expertise from geographically marginal schools.

Demographic contraction also reopens a pedagogical possibility that age-graded mass schooling has often treated as exceptional: **multi-age and multigrade education**. Mixed-age classrooms are already a structural reality in many small and rural schools, and recent scholarship increasingly argues that they should not be understood solely through a deficit lens. A 2025 review of multigrade teaching and learning suggests that these settings can function as productive environments for developing pedagogies suited to heterogeneous classrooms more broadly, particularly when examined through an inclusive-education lens. Their effectiveness, however, depends heavily on the quality of curriculum design, teacher preparation and instructional resources.

Evidence from the Maldives illustrates both the opportunity and the constraint. Mariyam Shareefa's study of differentiated instruction in multigrade classrooms found reported benefits for students' academic progress and psychosocial development, while simultaneously identifying teachers' limited preparation, planning time, workload and assessment demands as significant barriers. The lesson is not that combining grades automatically improves learning. It is that multigrade organization can support differentiated instruction and peer interaction when teachers are prepared to work with heterogeneous groups rather than expected to teach several conventional grade programmes simultaneously.

Curricular resources present a similar challenge. A systematic review of international research on textbooks and teaching materials in rural schools found that conventional resources frequently remain organized around standardized, single-grade assumptions and require substantial adaptation for multigrade settings. The review emphasized the need for materials that respond to mixed ages and levels while supporting active participation, inclusion and contextualized learning. More recent research from Spanish rural schools reinforces this finding: teachers commonly rely on graded materials designed for conventional classrooms

despite recognizing that these resources are poorly suited to multigrade pedagogy, while many report little specific preparation for rural or multigrade teaching.

Teacher development must change alongside workforce architecture. Systems cannot create mixed-age classrooms as an emergency response to falling enrollment and expect teachers trained exclusively for age-segregated provision to improvise. Professional preparation needs to encompass curriculum mapping across developmental continua, flexible grouping, differentiated assessment, peer learning, independent-learning routines and the orchestration of simultaneous instructional activity. Research on differentiated instruction more broadly shows that effective professional development is most successful when it combines active learning, collaboration and reflection over time rather than treating differentiation as a collection of isolated classroom techniques.

Leadership preparation requires equal attention. Small multigrade schools often place principals in hybrid roles in which they simultaneously teach, administer, supervise curriculum and maintain community relationships. South African research with teaching principals in rural multigrade schools identifies heavy workload and inadequate professional development as recurrent difficulties, suggesting that organizational redesign without corresponding leadership capacity can simply transfer demographic pressure onto a smaller number of professionals. Declining enrollment should trigger a **reallocation of professional capacity rather than a crude subtraction of personnel**. Some posts will become unnecessary, and responsible systems cannot avoid difficult staffing decisions indefinitely. But workforce planning should distinguish between genuine redundancy and strategically important expertise. It should anticipate retirement and attrition, facilitate mobility between campuses, strengthen cross-school professional networks, redesign preparation for heterogeneous and multigrade environments, and use released capacity to deepen the forms of professional work most closely associated with educational quality.

The opportunity is substantial. Fewer learners can produce greater educational intimacy only when demographic space is deliberately converted into **professional capacity**. Without that conversion, smaller schools risk becoming thinner schools—characterized by narrower expertise, greater professional isolation and diminished curriculum opportunities. With it, demographic contraction can support a different architecture of teaching: one in which expertise travels more intelligently across institutions, professional relationships become stronger, and teacher time is redirected toward the complex intellectual and relational work that most directly improves learning.

4. Protecting Breadth in Smaller Schools

Demographic contraction creates an educational paradox. Smaller cohorts can make schools more relational, more responsive and potentially more attentive to individual learners, yet the same decline in numbers can weaken the breadth of what an institution can sustain. The tension becomes particularly pronounced in secondary education, where curriculum diversity depends on specialist teachers, viable subject groups, laboratories, technical facilities, arts provision, counselling and extracurricular programmes. Many of these capacities require a minimum scale. When cohorts become very small, the difficulty is not simply whether a school can remain open, but whether it can continue offering students a sufficiently rich educational experience.

Research on school size suggests that this relationship should be understood as a **trade-off rather than a search for an ideal numerical size**. Economies-of-scale research generally finds that larger secondary schools can spread specialist staffing, facilities and administrative costs across more students, although estimates of an economically efficient school size vary

substantially across jurisdictions and depend on what measures of quality are included. The same literature cautions against assuming that larger institutions are educationally superior simply because they are cheaper per student. Cost efficiencies can coexist with losses in intimacy, participation or organizational coherence.

The countervailing advantages of smaller settings are well established in research on student engagement. Reviews of the engagement literature have associated smaller schools with greater opportunities for participation, stronger social relationships and increased involvement in extracurricular and cooperative activities. These effects are not automatic, nor do they mean every small school possesses a strong relational culture. They demonstrate instead that institutional scale shapes the opportunities available for students to become known, participate and develop sustained relationships within the school community.

Class size presents a similar caution against simplistic conclusions. Smaller classes can improve learning conditions, but reducing the number of students does not constitute a pedagogy in itself. Research from the Tennessee STAR experiment demonstrated substantial benefits from significant reductions in early-grade class size, with particularly strong effects for disadvantaged students. Subsequent classroom-process studies by Peter Blatchford and colleagues found that students in smaller classes were more likely to interact with teachers, sustain dialogue and remain engaged, while pupils in larger classes were more likely to be off task. Research in secondary mathematics and science has similarly shown that larger classes can constrain small-group work, discussion and more innovative instructional practices.



The implication for post-peak systems is important. The educational value of smaller cohorts depends partly on whether teachers alter what becomes possible when fewer learners are present. Merely reproducing the instructional routines of a thirty-student classroom with eighteen students leaves much of the released capacity unused. Smaller groups can instead permit more sustained formative assessment, individual conferencing, extended dialogue, inquiry, project-based learning, flexible grouping, interdisciplinary work and differentiated support.

This is what might be described as **pedagogical intensification rather than institutional thinning**. Demographic contraction should not simply produce smaller versions of existing classrooms while staffing and provision are simultaneously stripped away. It should create the conditions for more intellectually and relationally intensive education. The relevant question is not merely whether class size has fallen, but whether teacher attention, feedback, student participation and the complexity of learning have increased as a consequence.

Protecting such depth, however, does not solve the separate problem of curriculum breadth. Very small cohorts can make conventional subject timetables difficult to sustain, particularly when specialist teachers are required for only a few students. Post-peak systems need greater flexibility in how curriculum entitlement is organized across time, groups and institutions. Portugal offers one policy example. Its curriculum reforms strengthened school autonomy and flexibility, including interdisciplinary curriculum management and differentiated pedagogical approaches within a nationally defined entitlement framework. The important principle is that local flexibility operates within common educational expectations rather than replacing them.

New Zealand provides a different illustration of the same balance. Schools are expected to develop localized curricula responsive to their learners' identities, languages, cultures, interests and communities while still working from national curriculum expectations. Evaluations of implementation also reveal the tension inherent in such autonomy: localization can increase relevance, but excessive narrowing can undermine students' access to the broader knowledge that a national curriculum is intended to guarantee.

This distinction becomes especially important under demographic contraction. Flexibility should not become a euphemism for offering fewer things to fewer children. A student in a depopulating rural community should not inherit a narrower intellectual horizon simply because only a handful of peers live nearby. Systems need to separate **curriculum entitlement from campus self-sufficiency**. Guaranteeing access to chemistry, music, languages, advanced mathematics or technical learning does not require every campus to possess every specialist, facility or programme permanently within its own walls.

Once this distinction is made, a wider range of institutional arrangements becomes possible. Specialist teachers can work across federated campuses. Schools can synchronize timetables so that particular subjects are taught across several sites. Laboratories, arts facilities and technical workshops can operate as shared regional resources. Advanced courses can combine synchronous digital teaching with locally present educators who provide supervision, feedback and relational continuity. Universities, cultural institutions, employers and community organizations can also contribute to a wider learning ecology when the enrollment of an individual school is insufficient to sustain certain opportunities independently.

Technology can support this architecture, but it should not be mistaken for the architecture itself. Remote access to a specialist teacher is qualitatively different from assigning students recorded material or placing them in front of a screen without meaningful instructional support. Effective digitally mediated provision still requires interaction, feedback, appropriate materials, local facilitation and opportunities for students to ask questions and participate intellectually. The governing principle should be **distributed expertise rather than remote substitution**.

Curriculum breadth must also extend beyond examinable subjects. Music, drama, visual arts, languages, sport, clubs, competitions and other forms of enrichment are often among the first areas threatened when participation falls because their cost per student becomes easier to question. Yet these activities contribute to school connectedness, peer relationships, identity formation and opportunities for students to discover capabilities that conventional attainment

measures do not capture. Research on student engagement has long associated opportunities for participation in extracurricular and social activity with stronger behavioral and emotional engagement in school.

The challenge, , is not simply to preserve existing provision despite smaller numbers. It is to redesign the relationship between **scale, curriculum and pedagogy**. Demographic contraction can create more humane and intellectually demanding learning environments, but only when schools deliberately reinvest smaller cohorts into deeper interaction while systems protect breadth through curriculum flexibility, institutional networks and shared specialist capacity. Fewer students should not mean fewer educational possibilities. In a well-designed post-peak system, it should mean that the possibilities available to each learner become more deliberate, more accessible and more substantial.

5. Reimagining the Campus as Shared Infrastructure

Demographic contraction changes not only how many schools a system can sustain, but what a school building should be expected to do. In growth-oriented systems, campuses are typically designed as dedicated educational assets: classrooms, laboratories, administrative offices and recreational spaces organized primarily around the needs of enrolled students. In shrinking regions, however, this single-purpose model can become increasingly inefficient. Underused classrooms accumulate, fixed maintenance costs remain, and communities risk losing substantial public infrastructure at precisely the moment when other local services may also be retreating.

A more adaptive response is to reconceive the school as **shared civic and social infrastructure** rather than as an institution whose value is exhausted by its enrollment count. Recent research on schools as social infrastructure argues that school facilities can function as multifunctional community hubs when they incorporate adaptable layouts, shared public spaces and stronger physical relationships with surrounding neighborhoods. Such arrangements can support not only education but also social cohesion, community participation and local resilience. The significance is architectural and institutional at the same time: a building becomes more valuable when it can support changing patterns of use rather than remaining locked into one age group, one timetable and one organizational purpose.

Japan provides one of the clearest large-scale examples of this principle in practice. Declining student populations have produced thousands of closed schools and surplus classrooms, yet a substantial proportion of these spaces have been repurposed rather than abandoned. According to Japan's Ministry of Education, Culture, Sports, Science and Technology, 7,612 former school facilities created through closures between fiscal years 2004 and 2023 were still standing as of May 2024; 5,661 of them—74.4 per cent—were already being used for other purposes. These included social education, sport, welfare, community exchange and economic activity. MEXT's 2025 survey likewise found that 72,902 of 74,138 identified surplus classrooms in public elementary and lower-secondary schools—98.3 per cent—were being used in some capacity.

The lesson is not simply that empty school buildings can be recycled. It is that educational infrastructure can be reorganized around **community ecology rather than institutional ownership**. A declining-enrollment campus might combine conventional schooling with early-childhood services, adult education, professional learning, counselling, health provision, libraries, digital access, arts programmes or community organizations. The broader community-school literature provides a useful precedent for this kind of integration. A major research

synthesis of 143 studies found that well-designed community schools commonly combine academic provision with integrated student supports, expanded learning opportunities, family and community engagement, and collaborative leadership. These models demonstrate that schools can function as educational institutions while also coordinating services that address wider social and developmental needs.

The important caution is that multifunctionality should not become indiscriminate accumulation. A campus does not become strategically valuable simply because more services are placed inside it. Recent evaluations of community-school models show that effects vary according to implementation quality, coordination and local context. A 2025 statewide evaluation in Tennessee, for example, found modest improvements in English-language-arts performance, suspension rates, student mobility and teacher turnover after adoption of the model, but no consistent gains across all outcomes. The implication for post-peak systems is that shared infrastructure requires purposeful governance: services need to reinforce one another and respond to identifiable community needs rather than merely occupying available space.

There is also a strong sustainability argument for designing school buildings to accommodate multiple forms of use. A 2024 study in *Building and Environment* found that increasing utilization of school facilities through adaptable design can produce both economic and environmental benefits, particularly when buildings are capable of supporting external users beyond conventional school hours. The wider implication is that physical flexibility should be treated as a form of institutional resilience. Buildings that can accommodate new programmes, user groups and configurations are better positioned to absorb demographic change than campuses designed around fixed assumptions about cohort size and educational organization.

This changes the meaning of **asset management** in education. Leaders need to know more than how many buildings a system owns or how many seats each building contains. They need to understand utilization patterns, maintenance burdens, accessibility, demographic projections and the potential for alternative educational or civic uses. Some buildings will remain necessary despite low enrollment because they protect geographic access. Others may be better suited to consolidation. Still others may become regional centres for specialist teaching, professional development, early-years provision, health services or adult learning. The objective is not to preserve every physical asset, but to ensure that decisions about buildings are made according to future educational and public value rather than inherited organizational boundaries.

The concept of a **learning hub** is especially useful in a post-peak system. A hub can support several surrounding schools through shared laboratories, arts and technical facilities, professional development, specialist teachers, assessment services, digital infrastructure or community programmes while allowing smaller campuses to maintain local access. Such arrangements separate the location of expertise from the requirement that every learner or every service be permanently centralized in one institution. They also make it possible to maintain educational presence in communities where a fully self-contained school might no longer be viable.

The architectural consequence is significant. Future school design should become more **modular, adaptable and reversible**. Spaces should be capable of changing function as cohorts expand, contract or reorganize. Laboratories may serve multiple campuses; libraries may operate as community learning centres; unused classrooms may become teacher collaboration studios, special-education environments, early-childhood spaces or adult-learning facilities. A campus designed exclusively around one age structure and one institutional model may become increasingly brittle in a demographically volatile environment.

There is also a compelling social argument against treating closure or abandonment as purely administrative acts. Research from Finland found that communities surrounding primary schools experienced faster population decline after closure, with effects particularly pronounced in rural areas. A quasi-experimental study in Denmark reached a similar conclusion: following the simultaneous closure of eight village schools, population development in affected communities was estimated to have been 7.6 percentage points less favourable over the subsequent decade than it would otherwise have been, with longer-term effects linked to social capital and housing-market dynamics. These findings do not imply that schools must remain open regardless of cost or educational quality. They show that the disappearance of educational infrastructure can alter the trajectory of the community itself.

The relationship between school and community is reciprocal. Population decline can weaken the viability of a school, but the disappearance of the school can in turn weaken the attractiveness, social cohesion and service ecology of the locality. Decisions about physical capacity should consequently evaluate not only enrollment but what might be called **public-value density**: the educational, professional, social and civic value generated by a facility relative to the resources it consumes.

A building serving fewer students may still produce substantial public value if it supports teacher learning, family services, specialist provision, community activity or lifelong learning. Conversely, maintaining an underused campus without a defensible educational or civic purpose simply because it already exists is not stewardship. The task is neither preservation for its own sake nor closure for the sake of apparent efficiency.

The challenge is to redesign physical capacity so that demographic contraction produces **greater versatility rather than institutional hollowing**. In regions with fewer children, the strongest systems will be those able to make their educational infrastructure more adaptive, more connected and more useful across changing patterns of need—not by burdening schools with unrelated responsibilities, but by embedding them more intelligently within the civic and social infrastructure of the communities they serve.

6. Planning for Contraction Before It Becomes Crisis

The most serious governance failure in a shrinking education system is not demographic decline itself. It is **institutional lateness**. Falling birth rates, internal migration and regional depopulation usually become visible years before their consequences fully reach schools, yet educational planning often remains organized around annual budgets, current enrollment and inherited staffing formulas. By the time a campus is judged financially unsustainable, the system may already have lost its most valuable resource: time. Opportunities to redesign provision gradually, redeploy expertise, repurpose infrastructure and engage communities before decisions become adversarial may already have narrowed.

This is why post-peak systems require **anticipatory educational planning**. UNESCO's International Institute for Educational Planning explicitly identifies shifting demographics, constrained public budgets, technological change and recurrent crises as conditions demanding a more agile conception of educational planning. Its 2026–2029 strategy moves beyond the production of static plans toward collective implementation, institutional learning and adaptation as circumstances evolve. Applied to demographic contraction, this means replacing episodic reactions with a continuously updated understanding of where children are likely to

live, which cohorts are moving through the system, what professional capabilities will be required, and where inherited provision is becoming misaligned with future demand.

Such intelligence must operate below the national level. Population change is increasingly territorial rather than uniform. Eurostat's 2026 regional projections illustrate the scale of this divergence: under its baseline scenario, **836 of 1,165 EU NUTS 3 regions—71.8 per cent—are projected to have smaller populations in 2050 than in 2025**, while other regions continue to grow. The same projections show particularly pronounced contraction across parts of eastern and southern Europe, alongside expected increases elsewhere. These are not predictions of an inevitable future; Eurostat explicitly presents them as scenario-based projections dependent on assumptions about fertility, mortality and migration. Their value lies precisely in showing why national averages are insufficient for planning schools, transport, facilities and teacher deployment.

Effective governance requires **demographic intelligence at the level where educational provision is actually experienced**. That intelligence should connect at least five planning domains. Population and migration forecasts indicate likely cohort size and spatial distribution. Geospatial analysis identifies travel distances, catchment changes and emerging access gaps. Workforce data reveal retirement patterns, specialist shortages and opportunities for redeployment. Infrastructure audits show which buildings can be adapted, shared, repurposed or consolidated. Financial modelling clarifies which savings are genuine and which costs are simply displaced into transportation, staffing instability, facilities maintenance or reduced curriculum access. Treated independently, these datasets produce fragmented decisions; combined, they allow leaders to examine the consequences of restructuring before those consequences become difficult to reverse.

This makes **scenario planning** particularly important. Demographic forecasts should inform strategy without acquiring the status of certainty. Leaders might model several plausible futures: gradual contraction, accelerated decline, population stabilization through migration, renewed local growth linked to housing development, or continued metropolitan expansion alongside rural depopulation. Each scenario can then be tested against staffing, travel time, curriculum breadth, building utilization, capital investment and equity. The purpose is not to identify one future and optimize the system around it. It is to build arrangements capable of functioning reasonably well across several plausible futures.

The Joint Research Centre's work supporting Eurostat's 2026 regional projections demonstrates the usefulness of this approach. Regional demographic futures can be modelled under different assumptions concerning migration, fertility and longevity rather than treated as a single deterministic trajectory. For education systems, that distinction matters enormously. A school closed on the assumption of irreversible decline may be difficult and expensive to recreate if migration or regional development changes course; equally, maintaining excess infrastructure indefinitely on the assumption that enrollment will rebound can divert resources from current learners. **Reversibility becomes a governance virtue.**

Financial planning requires similar caution. Declining enrollment does not produce a uniform fiscal effect because funding systems differ in how quickly revenues adjust, while expenditure categories differ in how easily they can be reduced. A 2025 Annenberg Institute working paper examining U.S. public school districts from 1998 to 2019 found that districts experiencing enrollment decline often saw larger increases in per-pupil funding and resources than growing districts because revenues did not fall proportionately with enrollment. The finding complicates any assumption that contraction automatically produces either fiscal crisis or an immediate

financial windfall. Per-pupil resources may rise while aggregate budgets, buildings, staffing obligations and programme viability remain difficult to reorganize.

The relevant financial question is not simply **how much money fewer students should save**. It is how released or stranded capacity should be managed over time. Systems need to distinguish temporary diseconomies created by transition from permanently unnecessary capacity; protect expertise that would be difficult to reconstruct; and decide deliberately whether demographic space should support smaller classes, inclusion, specialist provision, professional learning or other improvements. Short-term accounting efficiency should not dictate long-term educational architecture.

Anticipatory planning must also include **procedural legitimacy**. Community participation becomes least meaningful when it begins after leaders have effectively decided which school will close. Research on contested rural school closures in Norway found that the transparency and organization of closure processes affected the legitimacy of decisions, even where economic pressures remained central. Experimental research on school-closure decision making similarly found that failing to provide meaningful pre-decision dialogue reduced public perceptions of legitimacy. These findings suggest that participation is not an ornamental stage added after technical analysis; it is part of responsible governance itself.

Recent research from Ontario reinforces the point. Studies of school-closure processes found that residents frequently felt they had little meaningful influence, while concerns about the reliability of data, the timing and format of consultation, institutional responsiveness and the apparent silencing of community perspectives damaged trust in governing institutions. The problem was not simply disagreement with closure. It was whether communities regarded the process by which decisions were reached as competent, open and fair.

A more legitimate approach would bring communities into the planning process before a preferred institutional solution has hardened. Families, educators and local stakeholders can examine demographic evidence, accessibility constraints, infrastructure conditions and alternative network configurations alongside system leaders. Participation does not mean that every local preference can or should prevail. Some schools will still need to close, merge or change function. But deliberation conducted early enough can reveal information that centralized datasets miss, make trade-offs explicit and distinguish genuine consultation from the management of opposition after a decision has effectively been made.

The emerging leadership task is one of **adaptive capacity management**. Education systems must become capable of resizing without indiscriminate retrenchment, concentrating specialist expertise without producing territorial exclusion, repurposing physical infrastructure without abandoning communities, and reallocating resources without treating demographic decline as synonymous with educational diminishment. This requires forecasting, but also judgement; data, but also institutional learning; efficiency, but also legitimacy.

Planning after the enrollment peak should begin years before classrooms empty. The systems best positioned for demographic contraction will be those that treat population change not as an unexpected emergency but as a foreseeable condition around which educational quality, equity and institutional capacity can be deliberately redesigned. The essential shift is from **managing decline after it becomes visible to designing adaptability before it becomes unavoidable**.

7. THE POST-PEAK SCHOOL DESIGN FRAMEWORK

Demographic contraction requires more than isolated decisions about staffing, school closure or class size. Education systems need a coherent way to redesign capacity while preserving quality, equity and intellectual breadth. The **Post-Peak School Design Framework**, conceptualized by Javeria Rana, brings together six interdependent design domains that leaders should examine before restructuring provision.

DESIGN DOMAIN	CORE QUESTION	PRACTICAL DESIGN MOVES
1. DEMOGRAPHIC INTELLIGENCE	Where will learners actually be, and how quickly is demand changing?	Track birth cohorts, migration, regional population change, enrollment trends and multiple demographic scenarios.
2. NETWORK ARCHITECTURE	Which capabilities must remain local, and which can be shared across schools?	Use federations, hub-and-spoke models, shared specialists, coordinated timetables and differentiated provision by age and geography.
3. PROFESSIONAL CAPACITY	Which teacher expertise must be protected, redistributed or strengthened?	Anticipate retirement, preserve scarce specialisms, deploy cross-campus teams, strengthen professional communities and prepare teachers for multi-age and flexible provision.
4. PEDAGOGICAL INTENSITY	How will fewer learners produce better learning rather than simply smaller classes?	Increase formative feedback, conferencing, flexible grouping, inquiry, differentiation, mentoring and curriculum responsiveness.
5. SHARED INFRASTRUCTURE	How can campuses remain educationally and civically valuable as enrollment changes?	Repurpose underused space, develop learning hubs, share specialist facilities and integrate community, early-years, professional-learning or public services where appropriate.
6. ADAPTIVE GOVERNANCE	How will the system resize without creating educational deserts or irreversible inequities?	Use scenario planning, equity impact reviews, transport analysis, community participation, phased implementation and regular capacity reviews.

The framework deliberately rejects the assumption that demographic contraction should be managed through proportional reduction. A 15 per cent decline in enrollment does not imply that every component of the system should contract by 15 per cent. Different capabilities have

different thresholds. A specialist science teacher may remain essential even when cohort size falls. A rural primary school may retain strategic value because of travel time. A large building may remain viable if it becomes shared infrastructure. Conversely, an inherited configuration may no longer justify continued investment simply because it has historically existed.

The framework should be used as a **cross-domain design exercise rather than a sequence of independent audits**. A decision in one domain must be tested against the others. Consolidating two campuses may improve staffing efficiency but worsen accessibility. Preserving every small school may protect proximity but undermine curriculum breadth. Reducing teacher numbers may lower expenditure while weakening specialist capacity. Repurposing underused facilities may increase public value while reducing the pressure for immediate closure.



Figure 1. The Post-Peak School Design Framework. *Conceptualized by Javeria Rana. The framework integrates Demographic Intelligence, Network Architecture, Professional Capacity, Pedagogical Intensity, Shared Infrastructure and Adaptive Governance as six interdependent domains for redesigning educational systems under conditions of demographic contraction.*

Three principles should govern decisions across all six domains:

> **Protect entitlement.** Demographic decline should not reduce learners' access to curriculum breadth, qualified teachers or meaningful educational opportunity.
>
> **Redistribute capacity before removing it.** Where possible, surplus time, space and expertise should be redirected toward stronger pedagogy, inclusion, professional learning and shared services before being treated solely as excess.
>
> **Design for reversibility.** Demographic forecasts contain uncertainty. Modular infrastructure, flexible staffing arrangements, federated networks and phased implementation allow systems to adjust when migration, fertility or regional development changes course.

The Post-Peak School Design Framework shifts the leadership question from **"What should we cut as enrollment falls?"** to a more productive one: **"How should we redistribute educational capacity so that fewer learners encounter no reduction in the quality, breadth or dignity of provision?"**

CONCLUSION: DESIGNING FOR DEMOGRAPHIC MATURITY

For more than a century, educational systems learned how to expand. They built campuses, increased participation, recruited teachers and organized schooling around the expectation that successive cohorts would justify continued growth. Demographic contraction requires a different institutional competence. It asks systems not how to become smaller in the narrow sense, but how to become **more deliberate about the capacities they retain, redistribute and redesign**.

The central lesson is that declining enrollment is not merely a population statistic. It is a systems condition. Demographic transition alters the geography of provision, the viability of campuses, the composition of the teacher workforce, the economics of specialist subjects, the design of classrooms and the relationship between schools and communities. Treating each consequence separately produces fragmented responses. Closure policies ignore workforce effects. Staffing reductions ignore curriculum breadth. Smaller classes are celebrated without changing pedagogy. Surplus buildings are abandoned without examining their civic value. The resulting system may become cheaper while also becoming intellectually narrower, territorially less equitable and professionally more fragile.

A more mature response begins with **spatial justice**. Educational access is shaped not only by whether a school formally exists but by distance, transportation, geography and the distribution of specialist expertise. This means consolidation cannot be evaluated through enrollment thresholds alone. Network design must ask which capacities need to remain locally accessible, which can be shared regionally and which should be concentrated without transferring disproportionate costs onto families and communities.

It also requires investment in **professional capital**. Fewer learners should not automatically produce thinner staffing structures. They create an opportunity to preserve scarce expertise, deepen collaboration, strengthen formative assessment, support inclusion and design more flexible pedagogies. Multi-age teaching, cross-campus professional communities and shared specialist teams can become purposeful features of post-peak schooling rather than improvised responses to scarcity, but only when teachers are prepared for those forms of work.

The same principle applies to infrastructure. A school building in a shrinking region should not be judged solely by the number of students occupying its classrooms. Its value may also lie in supporting early childhood provision, teacher learning, health services, digital access, community education or shared specialist resources. The future campus may become less institutionally self-contained and more deeply embedded within a local learning ecology.

None of these adaptations eliminates difficult decisions. Some schools will close. Some staff roles will change. Some services will need to be consolidated. Public resources cannot sustain every inherited arrangement indefinitely. The distinction lies in whether these decisions emerge from **reactive retrenchment or anticipatory redesign**. The former waits until decline becomes financially intolerable. The latter uses demographic intelligence early enough to preserve educational quality while changing the structures through which that quality is delivered.

The deeper opportunity is to reconsider what growth has sometimes obscured. Educational success should not be measured by the number of campuses opened, students enrolled or systems expanded. A demographically mature education system may serve fewer children while offering each of them richer relationships, broader access to expertise, stronger professional support and more adaptable learning environments.

After the enrollment peak, the task is not to defend the architecture of mass schooling against demographic reality. It is to design an educational system capable of remaining **equitable, intellectually ambitious and socially valuable even when expansion is no longer its organizing principle**.



FURTHER READING

Darrell Bricker and John Ibbitson — *Empty Planet: The Shock of Global Population Decline*
Bricker and Ibbitson examine the demographic forces reshaping societies as fertility falls and population growth slows or reverses. The book provides a useful macro-level context for understanding why education systems must begin planning for sustained contraction rather than treating declining enrollment as a temporary anomaly.

Paul Morland — *Tomorrow's People: The Future of Humanity in Ten Numbers*
Morland uses demographic indicators to explain how fertility, ageing, migration and population structure shape economic and social institutions. For educational leaders, the book is valuable because it situates school enrollment within the broader demographic transformations that influence labour markets, regional development and public-service demand.

Andy Hargreaves and Michael Fullan — *Professional Capital: Transforming Teaching in Every School*
Hargreaves and Fullan argue that educational quality depends on the combined strength of human, social and decisional capital. Their framework is particularly relevant to post-peak systems, where preserving and redistributing professional expertise may matter more than maintaining inherited staffing structures.

Ronald A. Heifetz, Alexander Grashow and Marty Linsky — *The Practice of Adaptive Leadership*
Demographic contraction is an adaptive challenge because it cannot be resolved through technical resizing alone. This book provides a useful lens for understanding why communities, leaders and educators must confront competing values, institutional loyalties and unavoidable trade-offs while redesigning provision.

Michael Fullan — *The New Meaning of Educational Change*
Fullan's work remains important for understanding how system-level reforms succeed or fail through implementation, professional culture and organizational learning. The book helps illuminate why demographic adaptation requires more than policy decisions about buildings or staffing; it requires coordinated change across institutional relationships and professional practice.

OECD — *Rural Well-being: Geography of Opportunities*
Although broader than education, this volume examines how geography, service access, infrastructure and demographic change interact across rural communities. It provides an important complement to school-focused research by showing why educational provision must be understood within wider territorial systems rather than through campus-level efficiency alone.

Taken together, these works broaden the discussion from declining enrollment to the larger questions of **demographic transition, professional capacity, adaptive change, territorial equity and institutional redesign**. They reinforce the central argument of *After the Enrollment Peak*: a system serving fewer children should not merely become smaller; it should become more deliberate about the educational capacity it preserves, redistributes and reinvents.



***Future-Ready Schools* is an exclusive feature by Javeria Rana on The Worthy Educator. Check back regularly for new insights on education transformed!**