

Briefings

Thought leadership for the independent schooling sector

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THE CONTRIBUTION OF INDEPENDENT SCHOOLS TO THE QUEENSLAND ECONOMY

From the Executive Director

High levels of parental satisfaction with independent schools is well recognised and evidenced by increasing enrolments in the sector over many years.¹

The excellent educational outcomes of independent schools are fundamental to parental satisfaction with independent schools consistently in the top performing schools in Queensland whether measured by OP scores or NAPLAN outcomes. The destinations of graduating Year 12 students from independent schools show higher proportions of students from the independent sector going onto tertiary education and to further education and training².

Students attending Queensland independent schools are estimated to have contributed to a 3.54 point increase in the mean PISA test score for Queensland in 2018³.

The contribution of independent schools to the Queensland community is further enhanced by their importance to the economy at both the State and local level. A recently ISQ commissioned report (*Economic Significance of Independent Schools to the Queensland Economy*, AEC Group, June 2020) finds the sector contributed nearly \$5 billion to annual Gross State Product (GSP) in 2017-18. On average one enrolment at an independent school added \$40,300 to GSP.

As states and regions across Australia respond to the wide-ranging economic fall-out from the COVID-19 pandemic, jobs will be a key economic indicator and a focus of governments. The Queensland independent sector supports the livelihoods of over 33,560 full-time workers either directly employed or supported through the sector's purchase of goods and services elsewhere in the economy. That's one job for every 3.6 students enrolled at Queensland independent schools and a total annual wages investment of \$2.95 billion benefiting local households.

Of 115 industries modelled by AEC Group in its study, independent schools were the 29th largest contributor to



1 See for example, Independent Schools Queensland's *What Parents Want*, available at <https://www.isq.qld.edu.au/members/what-parents-want-survey>
 2 See *Next Step* the post-school destination survey available at <https://qed.qld.gov.au/publications/reports/statistics/schooling/learning-outcomes/next-step>
 3 Source: *Economic Contribution of Independent Schools to the Queensland Economy*, AEC May 2020, available at <https://www.isq.qld.edu.au/members/economic-significance-of-independent-schools>

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overall Queensland jobs, employing more people than Queensland's rail transport industry, postal and courier delivery services industry and the telecommunications services industry. The independent sector ranked as the 22nd largest contributor overall to Queensland employee incomes.

As national and state and territory governments chart a path to economic recovery, employing an armoury of stimulus measures to boost jobs and private investment, it's vital that successful public-private partnerships, such as the enduring one that has existed between governments and independent school parents for 50 years, are not forgotten or eroded.

This is particularly important for regional families and their local economies, with the small and large networks of independent schools in some communities making contributions to their local economies that exceed the state average. Among them are regions such as the Gold Coast, Moreton Bay and Sunshine Coast region, which contribute the highest number of jobs and GSP, outside Brisbane.

Independent schools operate with funding support from three key stakeholders, the Australian and Queensland Governments and parents. Governments together, on average, account for about 50 percent of independent school funding with the remaining 50 percent met by the private contributions of parents.

This valuable partnership delivers both economic returns and government savings. In Queensland for every \$1 of combined public recurrent and capital investment in the sector, Queensland derives \$3.66 in economic benefits. In addition, by not taking up a fully funded place at a state school, independent school families free up \$1.02 billion in recurrent and capital funding annually for governments to spend on other essential services and nation-building programs. In the education sector, these savings equate to the construction of five new Prep to Year 12 schools and jobs for more than 10,100 beginning teachers.

Nationally the Independent Schools Council of Australia estimates the sector frees up \$4.8 billion annually in recurrent funding alone. The role independent schools and their tax-paying parent communities play in reducing the financial impost on the public purse in this period of unprecedented economic disruption should not be taken for granted; it must be encouraged and supported to continue.

The significance of parental investment in schooling is further highlighted by data which shows in 2018 approximately \$121 million was contributed by parents of Queensland independent school children and the community to fund capital infrastructure and improvements. According to the AEC Group report, this is representative of the savings to Queensland and

Australian Governments resulting from private funding for the provision of independent schools.

Prior to the COVID-19 pandemic, economic conditions supported increased parental investment in school education. Between 2014 and 2019 the Australian independent schooling sector recorded average annual enrolment growth of 2%.

In Queensland sector growth has boosted economic activity. Between 2013-14 and 2017-18 enrolments in Queensland independent schools increased by 6,000 to 121,000 students and school numbers increased by 15 to 205 schools. Over the same period the sector added an extra \$735 million to GSP (18% increase) and supported 2,702 extra jobs (9% increase) paying an additional \$530 million in wages and salaries (22% increase). Jump forward to 2020 and the sector's 218 schools now enrol almost 129,000 students – 15% of Queensland's school-age population.

There has been renewed public appreciation for the expertise and contribution of principals, teachers and other school staff, who worked tirelessly at the height of the pandemic to ensure education would not become a casualty.

While the contribution schools make to realising student potential and building the nation's human capital are well-known, the economic activity they generate locally and the value this adds to state and national economies should also be recognised as critically important.

For example, independent schools received nearly \$50 million in revenues from overseas students in 2017-18. The international students also spend money in the broader Queensland economy estimated by AEC Group to be a further \$50 million principally in

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the retail trade, accommodation and food and beverages sectors.

Importantly, enhanced educational outcomes provided by independent schools are linked to an estimated contribution to growth in Queensland GSP of around \$217 million in 2017-18.

Like many sectors of the economy, it is unclear how the pandemic economic after-shocks will impact independent schools. What is clear from this latest economic modelling, is that independent schools are strong performing national investments that governments can ill-afford to take for granted.

There is a vital need, and a significant opportunity, for both the Federal and State Governments to enhance their

support for choice in schooling through funding and regulatory packages that further enable independent schools to play their part in not only educating Queensland's young people but contributing to a strong and vibrant economy.



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REVISITING ANTIFRAGILITY MID-PANDEMIC



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When schools were finalising their strategic and operational plans and budgets towards the end of 2019, no one could have foreseen that the most significant disruption to their operations in decades was lurking just around the corner.

No mountainside executive retreat, educational futures thinktank, or strategic planning process could have anticipated the challenges schools would soon have to brave in the face of the COVID-19 pandemic caused by the tiny novel coronavirus particles.

Schools, generally, attempt to tame the future by employing strategic governance practices, such as the study of forecasts, analysis of trends and management of risks. For these practices to render acceptable results, the future needs to be somewhat predictable. However, the defining feature of ‘black swan events’ – unprecedented incidents with severe consequences like COVID-19 and the Global Financial Crisis (GFC) – is their unpredictability. This raises the question of whether schools could do anything else to situate themselves favourably for when the next black swan arises.

In his book *Antifragile – Things that Gain from Disorder*, Nassim Taleb (2012) describes a perspective on risk and uncertainty that schools may find helpful in their strategic planning. Consider a parcel labelled ‘fragile’ – it needs to avoid knocks and bumps as much as possible, otherwise it will deteriorate. A robust parcel is indifferent to the way it is handled as it will always remain the same. An imaginary ‘antifragile’ parcel,

on the other hand, actively invites mishandling because it improves as a result.

In what ways could independent schools become (more) robust, or even antifragile, and increase their confidence in facing an uncertain future? Could this change their attitude toward risk? This article explores some of the main ideas behind Nassim’s concept of antifragility, discusses criticisms of it, and points to potential applications for the consideration of school leaders and governors.

Antifragile in a Nutshell

Taleb (2012) asserts that confidence in our ability to estimate the likelihood of future events in the real world is entirely misplaced. He argues that if a turkey could statistically calculate its risk of imminent violent death, it would have every reason to believe that on the day before Thanksgiving, it had never been safer. Things happen outside of its control and beyond its prior experience.

The 2011 tsunami rolling onto the shores of Japan was the carving knife to the Fukushima nuclear reactor. Its engineers had built it to withstand impacts from natural disasters they expected to occur in that area, but the force of the tsunami was without

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precedent. Calculating risks of such rare events within acceptable confidence intervals is impossible, Taleb argues.

Daniel Kahneman (2011) affirms our oblivion of what lies ahead. Leaning on fifty years of research in the area of stock trading, he claims that fund performance has a year-to-year correlation “barely higher than zero [...]”. There is general agreement among researchers that nearly all stock pickers [...] are playing a game of chance” (p. 215).

Big data has also not yet delivered on its promises to help us keep the future in check. The Google Flu Trend project, for example, tried to leverage Google’s vast amount of data to predict seasonal flu hotspots, spectacularly missing the 2013 flu season (Lazer et al., 2014). “We have never had more data than we have now,” Taleb concludes, “yet have less predictability than ever” (p. 307).

Taleb further contends that it is a fallacy to explain human achievement largely as the result of deliberate planning and goal setting. Nokia didn’t plan to dominate the 90s telecommunications market when it started in 1865 as a pulp mill. The early researchers of chemotherapy merely stumbled upon the treatment when conducting autopsies of WWII soldiers who had been exposed to mustard gas. And if humans were indeed setting their own goals for progress, he quips, would they not have taken less than 6,000 years to set themselves the goal of putting wheels on suitcases?

For Taleb, the future is much less predictable than we usually assume. Hence, we should not waste our time trying to keep it in check. Rather, we should focus on what we can control – our exposure to uncertainty. How robust are we to withstand unprecedented challenges, and how ready are we to exploit unforeseen opportunities as they come our way? Do we stand to lose or gain from uncertainty?

Figure 1: An antifragile vocabulary for your next strategic risk discussion

Antifragile: To benefit from volatility and disorder. This occurs when there is less to lose when things don’t go our way than what we stand to gain if things pick up.

Asymmetry: Picking up coins in front of a steam roller symbolises a detrimental asymmetry between frequent small gains and rare disastrous losses. Alternatively, frequent small losses juxtaposed with rare enormous wins result in a positive asymmetry.

Barbell approach: To concentrate on two extreme sides and neglect the middle. The sides are (1) creating robustness against unexpected and extreme risks, and (2) creating likelihood for extreme opportunities to occur. Taleb suggests that we usually tend to neglect those extremes in favour of average risks and opportunities.

Black swan: The assumption that because you’ve never seen one, black swans don’t exist. Black swans are extreme events that were not foreseen, have a major impact and appear to be explicable in hindsight.

Heuristics: Practical decision-making tools (e.g. recognition heuristic, take-the-best heuristic, fast-and-frugal trees) that have been shown by Gigerenzer (2007) to be effective in uncertain environments because of their simplicity and use of less data.

Hormesis: The response of an organism to strengthen under the right amount of external stressors, such as weight-bearing exercises that improve bone density or germ exposures that strengthen the immune system.

Skin in the game: Taleb’s ethical rule is that those who stand to gain from something also must bear the risk to lose from it. Passing on the price of losing to others (e.g. through bailouts) is unethical.

Tinkering: Experimentation within a “failing fast” model where failures are numerous but small. They lead to rare opportunities whose value is vastly greater than all the resources spent on the failed experiments combined.

Via negativa: To resist our bias towards always wanting to act, and to consider more often what not to do. We can predict fairly well what will happen if we stop doing something. But if we start doing something new, we have limited information about potential outcomes and unintended consequences.

Adapted from Taleb (2012).

Fragile organisations stand to lose from uncertainty and have reason to be concerned about the future. Like a teacup, their structural integrity is best preserved in calm and predictable environments.

Who is fragile? For Taleb, a teacup is more fragile than a plastic cup should the grandkids come over. One bank is more fragile than another should a financial crisis occur, and a military dictatorship is more fragile than Switzerland should political change happen.

Taleb sees fragility whenever there is more to lose than to gain. If an increase in enrolments, say, two hundred students, would benefit you less than the harm you would feel from losing the equivalent amount, that creates a detrimental asymmetry – Taleb’s definition of fragility.

Systems become more fragile if redundancies are removed, often by well-meaning attempts to optimise them. Aeroplane safety relies on redundancies, for example, by carrying extra fuel. Any effort to save weight and cost by reducing this redundancy will make a plane more fragile. Human bodies also feature redundancies: kidneys, lungs, neural networks. In business, available cash is an important redundancy. It does not only protect a business in a downturn, but it also provides the means to make bolder decisions when opportunities present themselves. Businesses without cash reserves are fragile.

Secondly, systems become more fragile by removing healthy stress. As an example, Taleb cites the degradation of bone strength when removing the stress of weight-bearing loads. In the area of economics, he lambastes the fiscal policies of the US Federal Reserve

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Bank under Alan Greenspan, who attempted to remove economic stress by fastidiously adjusting economic levers to moderate and smooth out regular boom and bust cycles. Taleb argues that this made the economy more susceptible to the big bust of the GFC because it prevented many small, regular and necessary market corrections from taking place.

Lastly, fragility increases when risks can build up undetected. This happens when individuals or systems are incentivised to hide risks in order to achieve their objectives. Executive bonus payments without clawback provisions for individuals and government bailouts for organisations are Taleb's examples of such incentives. Liability for risky behaviour is transferred to others while its benefits are retained.

Now to the opposite – what is antifragility?

One of Taleb's pictures for antifragility is the Greek mythological creature Hydra. For every head Heracles cut off, the Hydra would regrow two. The monster is less affected by the downside (pain) than what it benefits from the upside (more heads). This summarises Taleb's definition of antifragility: the asymmetry of having less to lose than to gain from uncertain events makes you appreciate volatility; it makes you antifragile.

Taleb observes antifragility in many spheres of life: culture, ideas, political systems and technological innovation all thrive and develop in uncertain environments while stagnating under calm conditions.

While individual aeroplanes are fragile, the airline industry has an anti-fragile property: It improves its safety-related knowledge and systems every time an error or accident occurs. The industry relies on volatility to harvest the information gleaned from mistakes.

In summary, Taleb's big idea in *Antifragile* (2012) is a shift in thinking about risk. He warns of the illusion that risk management is about getting a handle on the future. We should be more concerned about risk exposure.

Critical Reception

Taleb's work is frequently critiqued as being derivative. Concepts like spreading your bets, trial and error, or hormesis (stressors that are bad in large, but good in small doses) are not new and have long been the subject of intellectual traditions (refer to Figure 1). Taleb often fails to acknowledge these historical lines of inquiry, leaving him open to the criticism that he is obscuring how little original thinking he has to add.

In the quest for antifragility, Taleb encourages a greater focus on improbable events (both positive and negative) because when they occur, the rewards of being prepared will more than make up for missing out on the steady returns of average events.

With that said, how much greater should this focus be? How improbable are these improbable events? Some of Taleb's critics say it is in the nuance of these decisions that value is found, rather than in a general aphorism that is so broad as to be nearly meaningless. Too great a focus on uncertainties can lead to wasted effort pursuing nightmares and daydreams. This effort would be better spent studying observable realities of which we have a stronger grasp.

Some critics argue that rather than seeking to be anti-fragile, being robust is worthy enough a goal. Since black swans occur so infrequently, traditional contingency planning and risk management practices remain the most useful approaches.

Taleb responds that the goal of being robust is, in fact, not enough. Since perfect robustness in which no stressor causes any harm is not achievable, and even near-robust systems will deteriorate over time, only antifragile properties will lead to ongoing survival.

Ultimately, the worth of Taleb's ideas will be judged by the only expert that Taleb trusts, the Lindy Effect. Applied to the world of ideas, this effect leads Taleb to conclude that only books that are still in print decades or even hundreds of years after publication contain robust enough thoughts that are worth noting. We will have to wait to see if Taleb's ideas will stand the test of time.

Application

To assist school leaders and governors consider their school's stance in relation to Taleb's paradigm, we

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identified several questions schools might find helpful in interrogating their current risk exposure. The examples provided are for illustration purposes only. The value for schools lies in a deep engagement with the questions.

Taleb contends that strategic priority should be given to removing fragilities as a first step. Discussing the following questions may help with this task.

- **What are the risks that could defeat us?** The only reason that schools cease to exist is if they encounter some kind of failure (in finance, operations, governance, etc.) from which they cannot recover. Schools that agree with Taleb's notion of unpredictable black swan events will not skip this first question.
- **What causes make us fret the future?** The more a school's health is dependent on the realisation of its projections (e.g. enrolment forecasts), the more its leaders will be uneasy about the future. A typical cause for such dependency is financial debt. Removing or minimising those causes will diminish fragility.
- **Do we have adequate redundancies?** The more a school optimises its operations, the smaller its acceptable margin of error will become. While some may regard idle cash as wasted, for Taleb, it's an essential redundancy in moving toward robustness. Non-financial redundancies can also be deployed in many areas of a school's operation, such as in IT where backup systems have always been a regular feature.
- **Are our people incentivised to address risks?** Short-term executive contracts can provide incentives to downplay risks in favour of rushed results. For Taleb, the best way to incentivise people appropriately is by creating 'skin in the game'. Hammurabi's code from ancient Babylonia condemned a builder –

the person with the most intricate knowledge about build quality – to death if the house he had built collapsed and killed its owner. Less macabre but still potent, school leaders experience the power of skin in the game when their children attend the same school. Taleb also talks about 'social skin in the game' when he describes small communities in which we have to see each other all the time – at the shops, at church, etc. This creates an incentive to do the right thing otherwise you lose the respect of the people within your community.

- **To what extent is our risk-taking diversified?** Since we cannot avoid mistakes altogether, Taleb wants them to be small. In his 'small is beautiful' worldview, centralised, top-down experiments carry the highest risk for catastrophic failure. He prefers distributed experiments initiated by smaller entities that don't endanger the whole system while still carrying the option of big returns. Large-scale reforms to a school's pedagogical approach, for example, that are driven from the top without first being tested on a smaller scale may turn out not to be effective – or worse, may even impede student learning. Diversifying educational risk may lead schools to entrust departments or other sub-entities with the advancement of pedagogical innovations.
- **Are we considering subtractive strategies?** "Telling people not to smoke seems to be the greatest medical contribution of the last sixty years", writes Taleb (2012, p. 360). Subtraction is a robust strategy because we understand the things that we can remove (smoking) much better than the things we could add (medication). Schools may identify a wide range of activities that do not add value but inhibit resources. Rather than adding new services or systems whose value is yet untested,

dissolving others that are known to be ineffective may be the better strategy.

The following questions could assist in highlighting opportunities to develop antifragility.

- **Do we encourage creative tinkering?** Adopting a Silicon Valley-inspired 'failing fast' mindset, organisations that engage in bottom-up tinkering will have two main experiences. They will be faced with many but inconsequential failures, and they will expose themselves to the increased likelihood of stumbling over enormous opportunities (positive black swans). If staff and students are, for example, given opportunities for self-directed experimentation, one breakthrough discovery may justify all effort spent on seemingly inconsequential activities.
- **Do we harvest information from mistakes and failures?** Information gleaned from fiery crashes during the development of SpaceX's rockets turned into gold when it was used to create the only boosters in the world that can spectacularly land again (Fernholz, 2019). The task is to slant the asymmetry between the pain of the mistake and the gain from the resulting improvement in your favour. Schools already gather some information from mistakes, for example using often dreaded complaints registers. In what ways can these registers be harvested, ultimately causing them to be viewed as a treasure trove for improvement?
- **Are we positioned to stumble upon great opportunities?** Taking diversified and decentralised risks that have a limited downside exposure, but unlimited upside creates a favourable asymmetry. Investing energy in professional networks is an example of something with a limited cost but the potential for big payoffs.

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- **Can we recognise opportunities clearly?** The presumption that more data is always better has been effectively challenged by Gigerenzer (2007). With more data comes the risk of drowning in noise and missing the essential – as in the man who crossed the road determining people's eye colours and missing the truck. Many schools have recently been developing data plans. Do these effectively eliminate the noise and help a school recognise when to pounce on an opportunity?

What's Next

Consider a school yard full of children and adolescents interacting with each other, a quintessential manifestation of volatility and uncertainty, for good and bad. For more complexity, we add teachers, parents, community members and the external operating environment, and we are faced with the sophisticated web of inextricable causes and effects we call a school. This is the environment in which school leaders and boards are tasked with making decisions for the future.

Leaders can respond to this task in two ways: to dread the volatility and uncertainty, attempting to moderate it through meticulous planning, or to develop a perspective that views volatility as an opportunity, working towards reducing fragilities in favour of antifragility.

The impact that angst plays in our future planning is a noteworthy endpoint. How often have you mistaken a stick for a snake on a bushwalk? It is a natural human response that causes this alertness. The reaction has no downside while greatly enhancing our chances of survival.

Taleb wants us to be more uneasy about the negative black swans that might come our way. But on the other hand, he also encourages optimism. We can attempt to tame uncertainty after all, just not in the ways many of us have thought about before.

References

- Falkenstein, E. (2012, November 27). Taleb Mishandles Fragility [Blog post]. Retrieved from <http://falkenblog.blogspot.com/2012/11/taleb-mishandles-fragility.html>
- Fernholz, T. (2019, April 26). SpaceX's test failure shows exactly how spacecraft get made. *Quartz*. Retrieved from <https://qz.com/1604645/spacexs-test-failure-shows-how-spacecraft-get-made/>
- Gigerenzer, G. (2007). *Gut feelings: The intelligence of the unconscious*. Penguin Publishing Group.
- Kahneman, D. (2011). *Thinking, fast and slow*. Penguin UK.
- Lazer, D., Kennedy, R., King, G., Vespignani, A. (2014). The parable of Google flu: Traps in big data analysis. *Science*, 343(6176), pp. 1203-1205. doi:10.1126/science.1248506
- Muser, T. (2013, July 22). Taleb, and other overrated 'intellectuals' [Blog post]. Retrieved from <http://philosophicalmuser.blogspot.com/2013/07/taleb-and-other-overrated-intellectuals.html>
- Taleb, N. (2012). *Antifragile: Things that gain from disorder*. New York: Random House Publishing Group.



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