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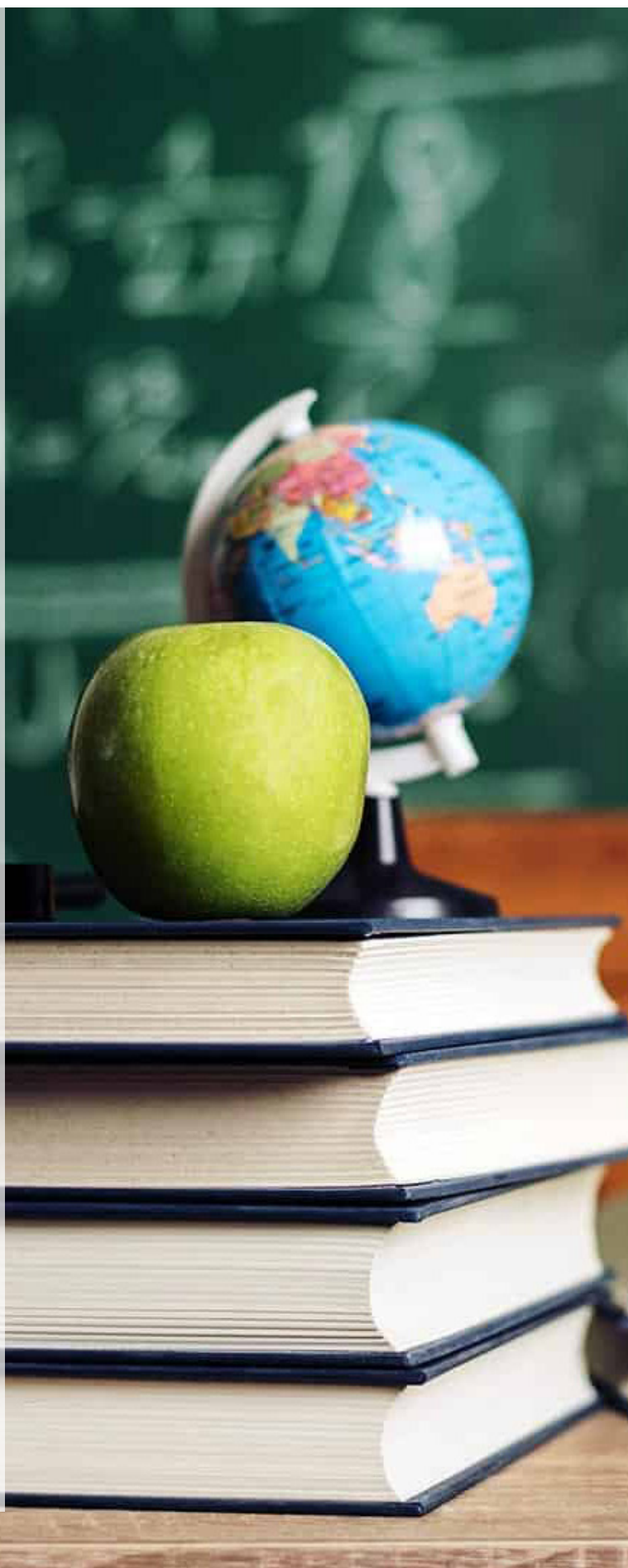
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SPECIAL REPORT

EDUCATION

- > Access to education
- > Quality and cost of education
- > Education policies
- > Challenges for the Lebanese University
- > Special needs education
- > Technology education





By Thomas Schellen

THE GAP IS GROWING WIDER

The Lebanese educational landscape

Despite large variances in concepts of what constitutes a good education and the curious inconsistency which individuals tend over time to exhibit on the matter, the value of education as a public good is constant throughout history and across societies as diverse as classical Greece, imperial China, and contemporary America. In our global era of universal human standards, education is affirmed in the Sustainable Development Goals (SDGs) of the United Nations and has become elevated from a lofty but vaporous ideal to a target of nations.

But that declaration of promise for every society was 22 years ago. Although progress toward achievement of the SDGs and the predecessor Millennium Development Goals is being achieved and measured, the quest for quality education is still fraught with question marks (see Last Word page 80).

In the context of globalized capitalism since the late 20th century, it has, for example, become a growing trend to glance over or ignore the development of personal values, social competency, and self-confidence that is coherent with an individual's role in a sane society. But even if one only focuses on the "easier" target of getting a useful education in the sense of its economic utility, the world today, including Lebanon, is faced with growing problems about achieving an education with adequate economic benefits, let alone adopting new targets of education as necessitated by social and technical changes, such as the digital transition.

In Lebanon, these problems are exacerbated by one particular barrier, educational financing. This barrier to accessing a quality education applies universally to private households, whether they are seeking to enroll their children in primary and secondary school, or are moving them into tertiary education, of which Lebanon has an impressive number with large variances in reputations and tuition costs.

Stratification into different tuition and quality categories across Lebanon's regions (see story and infographic page 24) frequently begins with

pre-school and extends through the educational system, where 70 percent of costs are covered privately by Lebanese families. The top tier of tertiary education in Lebanon generally is perceived as consisting of private universities based in Beirut, such as the American University of Beirut (AUB) and the Lebanese American University (LAU) on the English side, and Université Saint-Joseph (USJ) and École supérieure des affaires (ESA) on the French side. According to the available statistics, about one quarter of the country's 120,000 students in a given cycle attend one of these pricey univer-

sities, as contrasted to about 37 percent that attend the public Lebanese University—an institution that is perennially battling a set of political and administrative challenges (see comment page 36). The balance of

38 percent of students in tertiary education are distributed over the fragmented landscape of around 35 privately owned institutions of medium- to medium-high reputation (and commensurate tuition fees), which are legally not-for-profit enterprises and mostly opened in the 1990s and after.

■ The financial barrier to accessing quality education applies universally to private households.

HISHAM AND ALI

Irrespective of the specific institution and education level, it is easy to get testimonies from parents on the financial challenges. Hisham and Ali are two 40-something fathers. Ali owns a taxi. Hisham owns a hair salon. Both men are retired from the Lebanese Armed Forces, and both belong culturally and economically to the Lebanese middle class—which today means, primarily, that each of them passionately laments how the leaders in the nation's political theater cannot be trusted.

In further parallels, both their families include two working parents and children in education and both struggle financially. Ali, who has two kids aged

Education

five and 12, is clear on his next major expenses: \$2,800 of school tuition for his younger and \$3,200 for his older child. “My wife is working full-time. I bought this license and taxi company to be able to give our income an extra push so that I can pay [for] school,” he says, adding with exasperation: “All that I work for is to pay for schooling. It is the same with me as for so many people in Lebanon.”

Hisham is looking at a new level of tuition stress; two of his children will soon enroll in a highly reputed university that will cost around \$16,000 of tuition for the year starting this fall, and jump to \$33,000 of tuition for both his children one year from now. “I have talked with the bank, and they will give a loan that covers about 30 or 35 percent of total tuition. But how can I pay tens of thousands of dollars each year? I have put a ‘for-sale’ sign on my house,” he exclaims, while the flat screen TV in his hair salon shows live pictures from the budget debate in Parliament. Hisham turns up the volume. Just now, two MPs are haranguing over who should talk for how long.

THE TWO FACES OF LEBANESE EDUCATION

As it is with practically all public goods in Lebanon, except for security, the allocation of public funding to education is rather low in international comparison when expressed as a share of GDP. Described in a 2017 education public expenditure review (PER) of Lebanon by the World Bank Group, the government expenditure in the first half of the 2010s was equal to 2.45 percent of estimated GDP and 6.4 percent of all expenditure. According to the researchers, total government expenditure on education was about \$1.2 billion annually and slightly below out-of-pocket annual education expenditure of private households of estimated \$1.3 billion. Bank loans and structured savings instruments for building up education reserves are available from banks and insurances, but not used extensively in the country (see box right).

When private allocations of funding in Lebanon are taken into the equation, the country’s total expenditure on education reaches a comparable level to what in many other nations is managed under paradigms of progressive taxation, transfer payments to weaker income groups, and public administration.

Moreover, the share of education in total government expenditures has fluctuated rather extensively. By World Bank data collections, public expenditure on education—consisting of government spending on public and private education institu-



Top-reputed private schools in Lebanon are nests of quality education where future careers are being built for children from age three.

tions, education administration, as well as subsidies for households and other private entities—reached 8.58 percent of all government expenditure in 2013, but in previous years had vacillated between 5.5 percent in 2009 and 2010, less than 6 percent in 11, and a bit over 7 percent in 2016. And the fiscal commitments to education are not encouraging. “While government expenditure in absolute terms has gone up since 2005, the percentage share of education expenditure as a percentage of total expenditure has decreased by 17 points during the last decade,” the PER noted.

The deeper one looks, the greater the disequilibrium between public investment in education and private households’ burden of education expenditures appears. Additionally, whereas investment in education in Lebanon has “high returns” according to the World Bank—when comparing the income levels of people with a university degree against those of less-educated individuals—the opportunity cost, speed, and degree of certainty of labor market returns on investments in tertiary education in the domestic economy of Lebanon are factors of significant concern that are not mentioned in the report. These factors include the high unemployment of labor market entrants, and a high likelihood of university graduates will have to accept jobs that are socially, skill-wise, and geographically distant from their area of study.

Furthermore, the overall level of entry-level remunerations in Lebanon’s difficult economy is at increasing disparity to the growing cost of education. Kim Issa, director of advancement and alumni relations at the International College (IC) in Beirut, teaches undergraduate students at LAU

What happens when a family's pockets are not deep enough to finance their children's education? The answer that has come to prominence in the more capitalist societies of the world—led by the US—has been: get an educational loan. The results in contemporary America have been, well, impressive. On one hand, the percentage of millennials with bachelor degrees and above is the highest in history and 10 to 15 percentage points higher than in previous generations. On the other hand, sources such as the Federal Reserve and the College Board are reported to say that around 70 percent of students enter working life with the burden of student debt. According to a recent statistics by San Francisco-based Fintech site Credible, some 43 million borrowers of student loans in the US owe a total of almost \$1.6 trillion—or more than \$33,650 in average education debt per student.

In Lebanon, most people still do not face the dismal choice between practically being indentured by education debt for half of their lives and not pursuing a higher education. On one hand, Banque du Liban (BDL), Lebanon's central bank, has exhibited its customary prudence in the area of education lending. BDL has instituted privileges and exemptions from some retail banking regulations for educational lending as far back as Circular 81 in 2001 and has included some subsidies for educational loans in the course of providing various stimulus packages to the Lebanese economy in recent years. According to a statement cited recently in *The Daily Star*, BDL has extended support for educational loans issued in Lebanese lira over the past 10 years for a total amount of LL303 billion (\$201 million) with around 11,250 student beneficiaries.

Lebanese banks over the years have offered a number of short-term school loans—education experts told EXECUTIVE that many families would shun these one-year finance facilities because of the associated fees and also because

they felt confident that negotiating payment schedules with schools would be easier and bear less formal risk in case of missing a payment. Banks and insurance companies also attempted to market education savings plans and a variety of savings-cum-life insurance schemes that have, to date, increased in convenience, customization options, and transparency, but not necessarily in terms of uptake with a Lebanese population that is still overly shy when it comes to voluntary insurance.

Banks contacted by EXECUTIVE confirmed that families in search of long- and short-term education loans still have options in the retail lending market, even as the banking sector has in recent months been tightening the total lending portfolio by more than \$3 billion, according to BDL numbers cited by Bank Audi.

BML Bank tells EXECUTIVE that they offer loans with 1 percent interest on a one-year tenor, the length of time until the loan is due, for \$1,500–\$3,000 to help parents facilitate tuition payments at primary and secondary schools. Dana Alaywan, head of marketing and communications at BML says that the total amount of these loans disbursed is confidential. When asked about the trend of banks deleveraging loan portfolios, Alaywan says, “Deleveraging loans will not impact student loans since we get new people whom are requesting loans every month, and settling a loan fully without delays is something positive.”

Ronald Zirka, head of retail and marketing at BLF, corroborates this by saying that BLF's educational loan was not affected by the general deleveraging trend because it is subsidized by BDL. BLF tells EXECUTIVE that they granted around 200 educational loans for university students in 2018 amounting to \$3 million. By the close of June, 80 loans had been granted totaling \$1 million, equaling 5 percent of total lending as of the same time period. Additionally, findings in BLF's corporate social responsibility report from 2016–2017 show that they spent \$173,816 on

educational scholarships and donations in 2017.

There are other options, but these chances are often slim or very slim, such as a family's hope to earn one of a handful of full-time scholarships at schools and universities. In other, more widely accessible solutions, banks and universities can work in partnership to help students pay tuition. At the Lebanese American University (LAU), where, according to information on their website, tuition ranges from \$597 per credit hour for new nursing students (\$7,135 per 12-credit hour semester) and \$906 per credit hour (\$10,850 per semester) for pharmacy students, the administration began offering loans with subsidized interest by partnering with banks. However, only around 10 percent of students use this option, says Ghada Abi Fares, director of financial aid and scholarships at LAU. According to her, around 52 percent of students receive some kind of tuition assistance, including financial aid and scholarships. Another option to offset high costs is to look for an external scholarship, but she said the number of students who secure these is only around 50 to 60 per year, and they typically cover only a small portion of total costs.

While the borrowing road to attaining higher education appears less inviting in Lebanon than in many developed countries, the assumption of such long-term obligations at an age when any bet on a student's personal economic future has lately been overshadowed by heightened risks from economic slowdowns to displacement of many white-collar jobs by automation and artificial intelligence, the informal use of family resources for the finance of their children's, grandchildren's, nieces', nephews', and cousins' education cannot be dismissed as old solutions. Although stressful and often requiring personal-level “unconventional finance” or financial engineering, they may yet prove to be more resilient solutions than extreme reliance on bank loans.

Education

in their final year before graduation. In Issa's experience, students predominantly have no illusions about what salaries they can ask for if they enter the domestic labor market. If fresh graduates receive salaries of \$1,000, or even \$8,000 from the more desirable local employers—a reasonable expectation based on the career options offered by major Lebanese banks—the existing dichotomy between domestic salary prospects and education costs at top universities is not abating.

Ample anecdotal evidence from the current student cohorts, therefore, point strongly to the long-standing propensity of bright young Lebanese with top education accomplishments to search for careers almost anywhere else in the world, because the home market has no viable offers for them.

Thus overall, the aggregate investment that private households in Lebanon make in their education seems to stand in direct inverse relation to the investment made by the public sector and, in an economic sense, to the domestic return on education investments. In this sense, the lack of information on the education sector's current and expected contributions to the economy (see comment on page 32) and total factor productivity is just the beginning of the opacity on what education means for the GDP of Lebanon.

Assessing the return potentials of education investments in the Lebanese context is made additionally difficult by the extreme long-term character of education investments, and the vagaries of having to make these investment decisions at a time when the aspirations of young students are immensely lacking visibility on the side of sustainable personal occupational inclinations, and on the side of future market demands for their expensive

skills and the assessment of how much the education sector contributes to the country's total factor productivity and GDP.

Even more opaque is the potential of the Lebanese education system when approached under the

■ In Lebanon, there is a definite suggestion that wealth inequality contributes to differences in educational attainment.

question if the system will be able to fuel the human capital formation in Lebanon in the near- to medium-term to a similar extent as in the past 50 years, when brains were widely perceived (by the Lebanese and by Arab and

other alert employers outside of the country) as the single exportable and internationally most competitive asset. A hint on the questionability of this potential already by existing metrics comes from a barely average standing of Lebanon in the World Bank's new human capital index (see comment page 68).

PLACING BETS ON LEBANESE VIRTUES


In Lebanon, there is a definite suggestion that wealth inequality contributes to differences in educational attainment, and also a view that such gaps are not shrinking. With regard to the former issue, the World Bank's PER highlighted the gap in education attainment between students coming from high-income households and low-income households as very high. The PER said, "Significant wealth inequality exists in the performance of students," and added "inaccessibility of private schools to the poorest implies that private schools are hindering equity rather than promoting it."

Having to agree fundamentally with the analysis that top private schools are not doing enough to promote equity of education in Lebanon, IC's Issa, nonetheless points to pull-on effects that highly reputed private schools can bring to the education landscape by positively interacting with underprivileged schools. Top schools, which have a survival need to provide prime education methods to their clients, according to Issa, can convey ideas and methodologies such as professional fundraising from their successful alumni to financially less fortunate schools, just as underprivileged schools can be inspired to emulate new methods introduced in top schools such as creation of leadership centers and progressive teacher evaluations.

Another field where Lebanon's education providers can open new ways are related to adoption



The quality education at these private schools comes at prices that exceed average private school tuitions up to four times. At IC (pictured) the average elementary school tuition is \$11,464 per year.



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of future-oriented pedagogical tools and courses. There is a new draft law in this regard that in some minor Lebanese miracle was sponsored by MPs and drafted with a preamble that highlights how important tech education today is for development of the global economy. The draft substantially proposes, to noteworthy detail, adding to the national curriculum lectures that cover subjects such as online ethics, robotics, programming, and artificial intelligence. There are furthermore practical examples from several years of coding programs that give good indications of what works in Lebanon in this regard (see article page 42) and noteworthy edtech startups, several of which profess to more than just their next venture-capital raising and economic growth targets (see story page 50).

In the unlikely event that reform of Lebanon's public sector thinking would result in a marked shift from the current reliance on more or less clandestine savings and tax avoidance of the upper-third of income earners, with the implied need for out-of-pocket finance of health, education, and retirement by these relatively affluent families to the detriment of those who cannot accrue such savings and who would, in a more redistributive system, be net beneficiaries of financial transfer payments, Lebanon could shift to more active functioning of public administration units in managing education.

The skills, passion, and vision needed for such a radical transformation are in existence, and the required processes are not impossible to fathom for the performance leaders in the Ministry of Education and Higher Education (see MoEHE comment on page 30). However, the odds for such a transformation of the Lebanese political DNA seems today nearly as low as the chances for a kid from a one-room village school in the extreme south of Lebanon to receive a scholarship at a top private school with US affiliations.

The remoteness of a quick change in the public management of the Lebanese education sector under the existing political paradigms is demonstrated by the issue of special education needs (see story by our summer intern page 38). It is as depressing as it is instructive. As MoEHE clarified upon request by EXECUTIVE, the Law 220 (2000) has not been adequately empowered through issuance of the requisite implementation decrees. Implementation decrees are still outstanding as they need to be "developed and agreed upon by several ministries including the Ministry of Social Affairs, Ministry



■ The skills, passion, and vision needed for such a radical transformation are in existence.

of Health, Ministry of Internal Affairs, and Ministry of Labor," MoEHE said.

The ministry explained that implementation of education for children with special needs is being pursued in terms of construction or upgrades of school buildings with disabled-accessible infrastructures, in terms of academics, teacher and staff employment, as well as education planning.

Under the circumstances, the most feasible option of the education system in Lebanon and all aspiring students and parents might be to trust in the national heritage of education as a springboard to the future and reignite or further develop informal, perhaps even wasta-driven linkages that allow underprivileged schools to emulate or inherit some of the advancements that the institutions at the top of the performance ladders in primary, secondary, and tertiary education have adopted.

As the PER also notes, Lebanon's education sector was able to cope much better than the country's habitual internal naysayers and external critics might have expected (resilience in dealing with the refugee crises of the last seven years is another parallel between the public goods of health and education, besides their under-provisioning with fiscal resources).

The latest reference for the changing story of education is digital (see comment on page 46). This is the biggest education game changer for the generations that have journeyed through the second half of the 20th century and into the current era—it is possibly even the biggest game changer in the history of education. As Issa says it, "If you do not invest, you will be falling behind, and in the age of digitalization you can become outdated very fast." ■

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BETWEEN A ROCK AND A HARD PLACE

Private schools struggle to provide quality education at a reasonable cost



This year marked the 200th anniversary of the death of *al-Muallem* or the master Butrus al-Bustani, a writer and scholar, who founded one of the first schools in Lebanon, *Al-Madrassa al-Wataniya* (the national school) in 1880. The school was based on national principles and was open to all without discrimination—a change from the religiously run schools that were the only option prior.

Before Bustani's school—and the others which were established in buildings around the same time—schooling was common place in Lebanon, albeit under oak trees. *Madrasset tahet el-sindayneh*—literally translated as “the school under the oak tree,” in reference to the school grounds under the shade of a tree in the town square—were informal schools for the village's children taught by the priest or sheikh for all ages at the same time. Topics of instruction were reading, writing, and math, and students were deemed “graduates” when they mastered those three subjects. Of course, then, as now, there was a distinction in education along class lines; the children of the village's notable figures were not educated under the oak tree, but through private tutors.

Regardless of their income level, Lebanese have historically valued education, seeing it as an investment in their children's future. However, the cost of this investment is becoming increasingly restrictive given the dismal economic situation of the country.

EXECUTIVE talked to the administrators of a selection of private schools in Lebanon—largely catering to mid- and low-income students—to see how they are managing to maintain this balance between providing a quality education that meets the demands of the 21st century, and keeping their tuition within an affordable range for parents.

A NUMBERS GAME

Education is perceived as a noble mission where ideally money should not be an obstacle or barrier to accessing quality schooling, but the reality is that private schools in Lebanon have costs and expenses they need to meet, and can, to an extent, end up operating like any business. According to Mohamad Hamadeh, director of the Philanthropic Islamic Amlieh Association—a non-profit that owns and operates five schools in Beirut—Law 515 (1996) obliges private schools in Lebanon to split their budget between paying teachers' salaries, operational expenses, and curriculum development, with 65 percent locked in for the former and 35 percent left for the latter two. Based on that division and on the number of students they have, schools then calculate their tuition fees.

Nabil Rahhal (the author's father), an educational consultant and former board member of Marjoun National College, explains that, in Lebanon, teachers begin at a base salary and every two years are granted an increase to this salary. The value of this pay rise (known as *darajeh* [step] in Arabic) is dependent on their degree and years of experience. This means that a school's expenses are constantly increasing and accordingly, says Rahhal, schools' tuition fees are normally increased annually by a single digit percentage.

However, Lebanon's declining economic conditions have rendered parents unable to afford these increasing tuition fees. “The educational sector is not isolated from the rest of the country and is hit by the economic situation of the country,” Rahhal says.

A LAW OF ITS OWN

According to Father Boutros Azar, secretary general of the General Secretariat of Catholic Schools and



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coordinator of the Association of Private Educational Institutions in Lebanon, schools in Lebanon had been suffering from the country's economic situation for a long time, but the straw that broke the camel's back was the passing of Law 46 (2017), which increased salary scales for public sector workers. The controversial law, which was protested heavily by school administrations, but also much fought for by teachers and public sector workers—who had not seen a significant wage increase since 1997—has three components. The first was an increase in the monetary value of the pay rise that teachers earn automatically every two years (from an average of LL35,000 to LL50,000). The second was adjusting and raising the wages and salary scale, so starting salaries increased. Those two components roughly amounted to a 40 percent increase for each teacher, according to Shukri Husni, chairperson of the board and director general of the Learner's World International Schools (LWIS), which operates four schools across Lebanon. Both these components were implemented by all private schools, says Azar, despite the financial strains they inflicted.

The law also stipulated that all teachers get six additional pay increases at once, in a one-off move (the equivalent of 12 years of pay increases). For example, a teacher who has been teaching for six years has had three increases in her salary, but will be given the additional six, amounting to a salary jump of around LL300,000.

This situation placed private schools in a classic catch 22. "Here schools are faced with a dilemma," Rahhal explains. "They need to increase their tuition fee to pay the increased teachers' salaries, but if they increase their tuition drastically, parents will no longer be able to afford putting their children in that school, and so the number of students will decrease—negatively impacting the school's budget and its ability to pay salaries."

For those schools run by religious bodies—around 70 percent of the schools in Lebanon—Azar says that none were able to grant their teachers the one-off increase, not because they did not believe teachers were deserving of it, but because they simply could not afford to increase their tuition fees any further. "Teachers should surely be recognized for the noble job they do educating our children, but there has to be a balance," Azar says, stressing on the feasibility of the salary hike. "We have always said that we are [in agreement] with a balanced [between the financial abilities of parents to pay and the financial needs of teachers to have a living wage], feasible, and fair salary scale."

Private schools that cater to low-middle- to middle-income households were also largely unable to finance the additional increases and were open with their teachers regarding the situation. "In our lower fees schools, we paid the new scale—which is a 40 percent increase—but could not pay the additional six increases, which would have given them another 30 percent increase," says Husni. "If such schools pay the six increases, it will mean that school fees will be

significantly raised, which may cause such schools to eventually close. Most teachers do understand this difficult situation." Rahhal points out, however, that oftentimes teachers reluctantly accepted not receiving the one-off

increase fearing that the alternative would be school closures and losing their jobs.

■ Since 2012, Catholic schools have lost 85,000 students from their previous total of 190,000 students.

SCHOOL CLOSURES

Despite most private schools that cater to low-middle- to middle-income households not providing their teachers with this one-off payment, they are still struggling financially under the current economic situation—some have even been forced to close. Since 2012, when Azar was appointed to his post, Catholic schools have lost 85,000 students from their previous total of 190,000 students. Since applying—some of—Law 46 in 2017, 20 Catholic schools have shut down, bringing the overall total of Catholic schools down to 330 (Catholic schools constitute 5 percent of the schools in Lebanon).

Amlieh's Hamadeh says the 65/35 percent ratio no longer makes sense as teachers' salaries are taking up the majority of the budget, leaving much less than 35 percent to cover the bare necessities, such as maintenance of school grounds. "We are in a state of constant deficit, where we have no less than LL1 billion in deficit annually, and it is adding up," Hamadeh says.

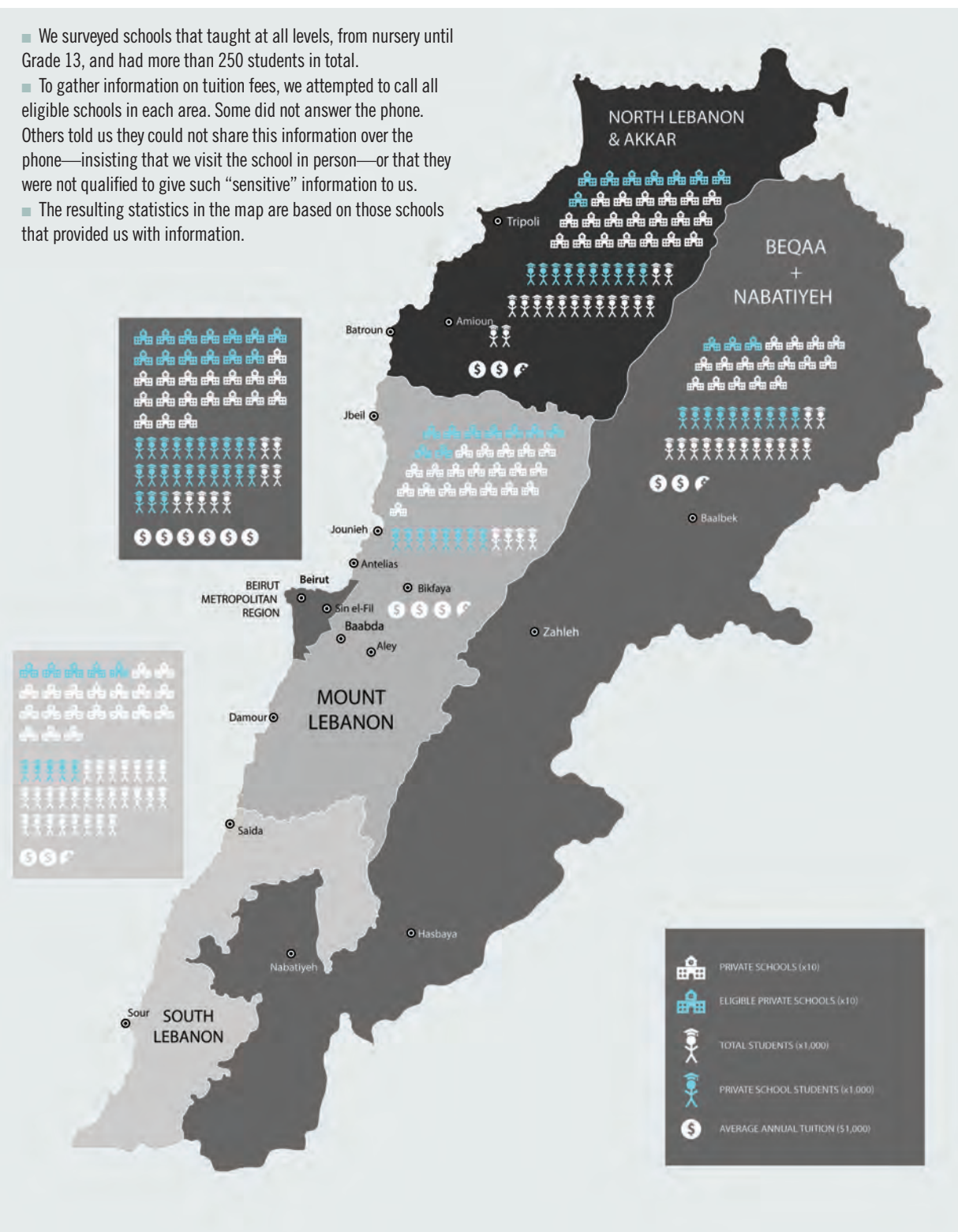
Closing down a school, says Azar, is never an easy decision as it leaves teachers jobless and students struggling to find alternative schooling options or dropping out of the education system all together—something that nobody wants.

EDUCATION IN TOUGH TIMES

Adding to the financial woes that private schools that cater to families of mid- to low-income brackets are facing is that a lot of parents delay paying the tuition, or do not pay it in full. "There is a problem for

MAPPING THE PRIVATE EDUCATION LANDSCAPE

- We surveyed schools that taught at all levels, from nursery until Grade 13, and had more than 250 students in total.
- To gather information on tuition fees, we attempted to call all eligible schools in each area. Some did not answer the phone. Others told us they could not share this information over the phone—insisting that we visit the school in person—or that they were not qualified to give such “sensitive” information to us.
- The resulting statistics in the map are based on those schools that provided us with information.



Source: School Index and Statistics Bulletin updated annually by the Center of Educational Research and Development

Education

certain, but obviously it differs from area to area and school to school. The more expensive the school is, the less of a problem it has," LWIS' Husni says. "This is because the 2 percent of the Lebanese who have money still have money. The people who are losing it are the middle, upper-middle, and lower-middle [classes]." He observes that their least expensive school has the highest rate of unpaid tuition fees—close to 25 percent of parents have not paid the tuition fees yet—while their most expensive school has the least amount of unpaid fees at less than 5 percent.

It seems that the further away from Greater Beirut, the bigger the impact of the economic situation on schools. Azar says that out of all the schools under his directorate, the ones that are struggling the most are those in rural areas with a small number of students (see map page 27).

PERSEVERING DESPITE IT ALL

In light of these conditions, schools have had to go the extra mile to make their money. When it comes to unpaid tuitions, Husni says they have several options to manage these losses, short of asking a child to leave the school—an act which he finds inhumane. He has a designated team that is in constant contact with parents who have not paid, supporting them in finding options to pay what they owe, and even allowing them to make payment installments through credit cards—although the school pays 2 percent on each transaction. "We are finding mini ways to deal with a situation that is unresolvable in the foreseen future," Husni says.

Schools have also learned to go beyond the tuition fees to finance the education they are providing. Hamadeh explains that the Amlieh Organization owns the building that houses the Ministry of Finance and it rents it out to the ministry, thereby

securing revenues that help their schools finance part of their salary expenses.

Financial aid can be a way of paying for tuition when schools have the resources to run such initiatives; this typically involves reaching out to alumni and/or the community, according to Rahhal. In the LWIS school network, 12 percent of students in school are on financial aid, the money for which is collected from the four owners themselves—who have each pledged a certain amount in financial aid—and from the schools' fundraising efforts, says Husni. He also acknowledges that his schools benefit from an economy of scale, with one school sometimes subsidizing the other, and from the money LWIS makes from educational consultancy work outside of Lebanon. "This allows us to have more of an ability to bear losses, but it is more of a cushion than a solution," Husni explains. "If we did not have this [security], we may have had to consider the closure of the schools with lower tuition in a couple of years, I think."

Azar says the Maronite church supports Catholic schools by not collecting rent from the schools that are on church-owned land, says Azar. Because rent is a major expense for schools, then through this cost cut, Catholic schools can still manage to keep tuition fees reasonable while paying salaries.

Given these conditions, as Husni puts it, "schools have a mentality of survival not development." One has to wonder how much these schools are able to invest in a curriculum or infrastructure that would prepare learners for the 21st century. "When you are barely able to pay salaries, how can you develop your academic and physical infrastructure?" Rahhal says. "This is why such schools are teaching students just to pass the official exams. Schools boast that their students have all passed the official exams, but this is not an indication that they have succeeded in developing a well-rounded personality equipped with the skills needed for the digital future."

Education these days has developed way beyond the chalkboard and textbook approach to include critical thinking and research skills, coding and smart boards, and a plethora of tools and concepts aimed at producing a well-balanced individual who will excel in jobs and fields not yet known to us. Meanwhile, a big portion of schools in Lebanon are struggling just to pay their teachers and remain in operation. Unfortunately, the price will be paid by those students who do not have access to the same quality of education their wealthier fellow citizens can afford.



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EDUCATION FOR A NEW ECONOMY



The view from the education ministry

The Lebanese economy is changing. Our education system must follow suit. The Ministry of Education and Higher Education (MoEHE) is committed to achieving the United Nations Sustainable Development Goal (SDG) 4 Education, thereby committing to providing access to quality education for all children. Our work contributes to 12 other SDGs for 2030, including Goal 8 on decent work and economic growth and Goal 9 on industry, innovation, and infrastructure. Thinking ambitiously in these areas means Lebanon needs well-thought out strategies for the economy, for education and skills, and for future industries and innovation.

It is also clear that predicting the economic future requires more than a 10-year horizon. The education system must respond from a broad vision right down to what is happening in classrooms and lecture halls every day.

CHANGING MARKETS

Diversity is a key characteristic of Lebanon, and our openness to and appreciation for other cultures dates back centuries. This gives the Lebanese a competitive edge, for as the world becomes

increasingly interconnected and interdependent, “cultural competence” is more important than ever. Indeed, a globalized market will require not only technical competencies, but also socio-cultural knowledge and understanding. Global citizenship education is key to ensuring our students are equipped with the skills and attitudes that would enable them to thrive in multinational, multilingual, and multicultural environments.

Another pivotal aspect of future markets is the role of technology. It is evident that the future will hold greater technological and digital dependence. A three-year-old child who enters the education system today will enter the workforce after 2030. It is our responsibility to prepare these children for the future job market. How can we identify the markets and corresponding skills needed 20 years from now, with disruptive technologies altering life as we know it? Social media, smart phones, and ride-sharing applications have had a major impact on how we interact, work, and commute today, and these were all created less than two decades ago. The networking skills prepared through curricula

■ The networking skills prepared through curricula designed 20 years ago would not have prepared today’s young job-seeker for the social networking market that exists now.

designed 20 years ago would not have prepared today’s young job-seeker for the social networking market that exists now.

We must think about more innovative and effective ways to incorporate education technology

in our education system. Lebanese students have already won multiple awards in robotics. The MoEHE organized a coding week in 2018 that attracted thousands of students, and we are looking into using artificial intelligence to track students’ learning outcomes and cater to their learning needs accordingly. We aim to continue in that direction, ensuring we are making the most of what technology can offer to enrich the education of our students and prepare them for the future.


A DIGITAL FUTURE

Given the challenges of predicting markets, we must consider solutions that prepare youth for employment that we cannot yet envisage. One solution that research increasingly points to is a dual education system that simultaneously focuses on broad educational knowledge and the development of positive citizen behavior, whilst being much more explicitly linked to the world of work. This means regular exposure to the “career world” in schools. This could include job-shadowing activities, guest speakers from various professional fields, and workshops/training sessions on the digital technologies and processes used in the workplace. These activities would require intersectoral collaboration involving government agencies, civil society, and the private sector, to capitalize on what each sector has to offer.

Secondly, we cannot continue to view education as the attainment of knowledge alone. Lebanon, like many middle- and high-income countries, has a mismatch of learners to the economy.

Solutions start with mapping our economy in detail and transposing the skills needed. We must start with a good foundation of general education, then build on broader competencies, such as creativity, adaptability to risk, and entrepreneurship. Many countries are also considering incentivizing life-long learning through, for example, individual “skills accounts,” so that even adults can afford to upskill themselves as technologies and their own careers change.

Finally, we need to consider our education policies in conjunction with our job creation, and industrial and economic policies. We cannot invest in skills for a digital future if we do not simultaneously invest in upgrading and expanding our digital infrastructure.

Our goal must be to move forward consistently across education and industry, to ensure the future youth of Lebanon are able to adapt, navigate, and excel in this unmapped territory. 

Fadi Yarak is the director general of education at the Ministry of Education and Higher Education.

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MEASURING THE IMPACT OF EDUCATION



LAU study a model for solving the problem of data scarcity

The impacts of universities on the surrounding environment go far beyond their gates.

Their contribution to the local economy—understood as both direct and indirect effects on employment and overall economic development—is visible to the naked eye. Classic examples include Oxford, England, or Cambridge, Massachusetts, which are unthinkable without Oxford and Harvard universities. In Lebanon, the neighborhoods of Hamra and Jbeil teem with students and faculty from some of the country's most prominent universities.

As a university whose history and mission are directly linked to contributing to the development of its communities, the Lebanese American University (LAU) undertook an economic study to assess its own impact on the local economy. One of the first challenges to address this question quickly surfaced, given the scarcity of significant data and quantitative information to capture the typically complex rela-

tionships between investments/expenditures and national economic impact. Because of this data scarcity, the study used an input-output model that permits the use of gross domestic product (GDP) deflators to portray the economy of years following a year for which a complete national accounts data set is possible. Using commonly available administrative data, the model not only allows for the calculation of monetary multipliers, but also employment multipliers that play a major role in the educational sector.

The total economic impact of LAU on the Lebanese economy is greater than the total of the university's direct spending on payroll, goods and services, construction, renovation, and capital expenditure. It is comprised of direct, indirect, and induced impacts. The indirect impacts are the jobs, salaries, and sales generated by the businesses' spending that LAU directly purchases its goods and services from. Subsequently, the jobs, salaries, and other spending of the succes-

sive levels of recipient businesses evidence this indirect impact. Induced impact is also demonstrated by the jobs, salaries, and sales supported by employee household spending.

The indirect and induced effect—or alternatively, the multiplier effect—is measured by what is known as Leontieff’s input–output economic model, which uses a series of multipliers to provide estimates of the number of times each dollar of input, or direct spending, cycles through the economy with regard to indirect and induced output, or additional spending.

Using the IMPLAN model, the study analyzed 2015 data from the Beirut and Byblos campuses and demonstrated that LAU’s total economic impact accounted for the creation of 9,570 employment opportunities, \$209 million in labor income, and \$897 million in total economic output; the total economic impact of LAU on the Lebanese economy equated to 1.8 percent of Lebanon’s GDP for that year.

Aggregated within LAU’s total economic impact is the university’s out-of-country spending. Lebanon has long been a destination for higher education, attracting students from beyond its borders through its reputation for high-quality education provision. In 2015, approximately 11 percent of the LAU student population originat-

ed from outside of Lebanon. Their expenditures within Lebanon are included in this analysis, as they would potentially have attended other institutions outside the country.

Beyond the direct economic impact, the study touched lightly on the broader range of secondary economic impacts that highlight a

university’s role in enhancing human capital, fostering technological innovation, and promoting business creation in Lebanon. Even without the secondary economic effects, the examination of the impact of

■ The total economic impact of LAU on the Lebanese economy equated to 1.8 percent of Lebanon’s GDP for that year.

one university, in this case LAU, reveals the importance universities bring to the local economy and serves to underscore their critical role in developing the human capital in our country.

This was an unprecedented study in Lebanon, and the lack of general economic data was the motivation for which it was conducted. A satisfactory and generalizable solution to the dilemma of lack of data, in the simultaneous context of a wide range of unanswered questions that would rely on such quantitative information, has yet to be discovered. This study suggests one way out of the dilemma: the application of models that allow for a combination of broad macroeconomic data from national accounts, which is generally available even in countries with poor data provision (and in Lebanon’s case can be accessed online), and microeconomic data, from institutions with data collection and statistical documentation standards, implementation of which is required by law from all private institutions of higher education in Lebanon. Internationally-oriented universities, multinational companies, and stock market listed companies, subject to the reporting requirements of the securities markets where they are listed (in Lebanon, the Beirut Stock Exchange and soon the new Electronic Trading Platform), serve as such institutions. The combination of these two available data sources in the context of severe data scarcity, with models that allow them to be combined, allow for unprecedented conclusions in much needed areas. ■



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BRIDGING THE GAP

Academia, the public, and policy-making in Lebanon

There has never been a better time to critically assess how and where we get our news and information than these times when social media has become the main source of news for many, and “fake news” not only informs policy-making, but has become a tool for some politicians. Healthy democracies require informed citizens capable of critical thinking, an engaged civil society positioned to propose solutions and influence policy-makers, and universities committed to the transformation of society. Academia is an often overlooked prerequisite for democratic and informed policy-making through its education and research functions as well as its role as a site for public discourse.

Bridging the gap between policy-makers and academia is not easy, especially in the Arab world. The spaces for interaction are limited, and the policy-making process is rarely systematic. Even when policy-makers and academics do interact, they might find out they do not even speak the same language. A 2018 study by the Lebanese Center for Policy Studies on Lebanese parliamentarians found that 63 percent of MPs could not accurately estimate the unemployment rate, and while socioeconomic concerns were priorities for the majority of citizens polled, only 30 percent of MPs shared these concerns. Academics, on the other hand, can be too theoretical in their studies and too “long-winded” when addressing these issues.

Resolving this disconnect does not remove all of the barriers to formulating good policies, but it can go a long way toward envisioning longer-term solutions to everyday problems. At the Issam Fares Institute for Public Policy and International Affairs (IFI) we have focused on: providing a space for policy-related dialogue between academics, civil society, and policy-makers; supporting and facilitating high-quality policy research by professors; and, most importantly, disseminating academic policy-relevant research as accessible publications with clear recommendations.

The reality in the Arab world, however, is that almost 80 percent of Arab nationals are on social media, and around 70 percent report that social media is an important source of news. The internet and social media have made it easy to publish and reach thousands of people at the click of a button. Access to information

through the internet has been both liberating and disorienting due to the sheer volume available. Often, it is hard to know the legitimacy of the information unless one is willing to dig deeper and research the source. In this context, distorted and biased information, sometimes referred to as “fake news,” can be easily instrumentalized by politicians and pundits through powerful tools of social media at times leading to a highly misinformed society.

The nefarious use of “fake news” for political campaigns has been on the increase worldwide. Of particular concern is its use by populist parties that depend on scapegoating immigrants and refugees for their societies’ problems. The use of false or fabricated information to rally a xenophobic political “base” is not history,

■ In highly politicized countries like Lebanon, there is limited public space for a healthy, non-partisan, well-informed debate.

but an ongoing 21st century blight on developed, liberal democracies across the globe. Here in Lebanon, there is a politicized narrative around refugees that is not very different from Western anti-immigrant discourse by right wing

and populist parties in the US or Europe. At IFI, we seek to counter inaccurate information used by politicians and media through a social media campaign that uses everyday language and data visualisation to disseminate facts about the Syrian refugee crisis.

In highly politicized countries like Lebanon, there is limited public space for a healthy non-partisan, well-informed debate on the critical issues of the day. It is difficult to find a non-partisan and independent space for the exchange of ideas, but it is even more difficult to have the convening power to bring all the concerned parties together. Building credible institutions, whether academic or civic, to engage in the policy-making process is of paramount importance. Henry Giroux, a leading public intellectual on the societal obligations of educational institutions, argues that, “A democracy cannot exist without informed citizens and public spheres and educational apparatuses that uphold standards of truth, honesty, evidence, facts and justice.” Many in this region do not live in a democracy, but these are certainly principles that educators and researchers can and should strive to uphold. ■

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Behind the Lebanese University strikes

My father returned to Lebanon in 1994, 10 years after the civil war forcibly exiled him to France. He thought that his PhD from Sorbonne University, coupled with extensive academic publications, would be sufficient for him to find a decent teaching job at the Lebanese University (LU). He soon realized the error in his assumption when he was told that due to his past political affiliations, “only Ghazi Kanaan or Nabih Berri can get you in.” It was only in 2008, after 14 years of teaching under contractual working hours, that he eventually got a full-time position. My father’s case, however, is not an exception. A five to seven year wait for a full-time contract is the standard period; others have even waited for as long as 15 years.

The full-time employment of contractual professors and the tenure position for full-time professors was one of the demands of the spring strikes. However, this has been a recurring demand that, since the early 1990s, has led to yearly

sporadic strikes and long-term sustained strikes. The fragmentation of faculty between contractual (paid per hour), full-time (paid monthly based on yearly automatically renewable contracts),

■ A five to seven year wait for a full-time contract is the standard period; others have even waited as long as 15 years.

and tenure track professors (open-ended contracts) reflects the system of dependency and control that the Lebanese political class has imposed on LU’s professors since the

end of the post-civil war period in the 1990s.

POLITICAL PRESSURES

This system, based on political affiliations and sectarian balance, has come to determine people’s job stability, academic achievements, research grants, and access to managerial and academic responsibilities. It has subsequently

created, in the Marxist sense, a dynamic of alienation, i.e. a loss of essence and self because of the stratification imposed by the political class, and its constant and continuous loyalty checks at each step of the way. Certainly, as an institution, LU is constantly occupied by protests and demands related to the status of university professors, who are new and highly-qualified while job and income insecure.

The Lebanese political ruling class puts the university under constant pressure through the control and alienation of its faculty and through the fragmentation of the university's regional branches. Beyond the idea to open branches in major cities (e.g., Tripoli, Saida, and Zahle), the regional branching extended starting in the early 2000s to a long list of towns that do not facilitate the mix of students from different backgrounds, such as Baalbek, Rashaya, Aley, and Nabatieh. This policy has put extreme pressure on the university's budget and, by doing so, has reduced the quality of education and the student life experience.

A key element of the strike was the focus on the importance of keeping the university budget, and potentially increasing it to further allow advancement of research and improvement. It was clear for the leaders of the spring strikes that further budget cuts meant the end of LU and the subsequent privatization of higher education in Lebanon.

SHAKING THE ESTABLISHMENT

Another demand, which strikers were set on, related to the privileges provided to LU's professors through their mutual fund, namely better health coverage than other state employees, as well as tax-exempted higher education funding for professors' children ranging from LL5 million (\$3,333) - LL10 million (\$6,666) per year, depending on the age of the child. By my own estimate, payment from the fund can range from 10 percent of the yearly salary for professors with one child in kindergarten, to 40 percent of the total salary for professors with three children enrolled at university level. The issue of the mutual funds also raises questions about the overall health and education policies of the Lebanese government that aim at unifying all health and education payments for state employees, as per reforms detailed under Law 46 (2017) on salary scales. A sound policy reform should ensure uni-

versal health coverage and improvement of public school, but these remain far away from the policy agenda. University professors are incentivized to remain mainly to ensure a proper education for their children because of the mutual fund's education subsidy.

While the 2019 spring strike put forward a long list of demands, the main political constraints that hamper the development of LU and the improvement of its program and infrastructure remain issues related to the control of the

■ The Lebanese political ruling class puts the university under constant pressure through the control and alienation of its faculty.

ruling class over faculty, the fragmentation of the university branches and its pressure on the budget, and the system of incentives proposed to the professors. This system

is typical of the Lebanese administration's approach that provides indirect subsidies to the private sector of what should be essential rights, such as health and education, while trying to reduce long-term pension indemnity costs that are calculated based on basic salaries. (By reducing basic salaries and increasing extra benefits—such as daily transportation stipends or school payments, for example—a package can seem acceptable to an employee in the short term, but with pensions only calculated on basic salaries, this will have negative consequences for them in the long term.)

The 2019 spring strike is different from previous strikes because it directly tackled the key issue that constitutes the backbone of LU—the political ruling class. By shaking the establishment, the leaders of the strike have been able to force Parliament and the government to amend the budget law, and meet all the demands made of them—with the exception of an additional five years of pension, and full-time posts for contract teachers (making it highly probable these professors will strike again early in the next academic year). More importantly, by refusing to follow political parties calls and instructions to stop the strike, protesters have inspired hundreds of professors out of their alienation for the first time since the end of the civil war. ■

Kanj Hamade is an assistant professor of agricultural economics and rural development at the Lebanese University.

TOO MANY STILL LEFT BEHIND



Lebanon's education system is failing students with special needs

Students with physical and cognitive disabilities in Lebanon are being put at a disadvantage by a system that, from the get-go, creates barriers—both physical and financial—toward an inclusive education. While there are signs that this could change in the future, current progress is slow, and on a structural level, the educational system in Lebanon continues to exclude and discriminate against special needs students.

In 2000, Lebanon passed Law 220 that, among other things, guaranteed disabled individuals the right for an education free from discrimination, as well as equal opportunities within private and public educational institutions. Yet, in the near two decades since the law was passed, an implementation decree has not been developed or agreed on by relevant ministries. Human Rights Watch (HRW) carried out research between January and June 2017, in Beirut and its suburbs, Hermel, Akkar, Nabatieh, and Chouf districts, gathering information about the experiences of 105 children and young adults with disabilities, and

conducting interviews with six public schools, five private educational centers, 13 Ministry of Social Affairs (MoSA)-funded institutions, 30 disability and education rights experts and advocates, and 13 government officials. Based on interviews with disabled children and their families, HRW concluded that, “children with disabilities were excluded from public schools due to discriminatory admission policies, lack of reasonable accommodations, a shortage of sufficiently trained staff, lack of inclusive curricula (including no individualized education programs), and discriminatory fees and expenses that further marginalize children with disabilities from poor families.”

BARRIERS TO EDUCATION

The first barrier children with disabilities face is direct discrimination, i.e., being denied admission into school as a result of their disability. HRW recorded 200 instances of this during its investigation. One of the cases detailed in the HRW report was that of Wael, a 10-year-old boy with autism who, according to his



LWIS Koura is one of Learners World International Schools network's inclusive schools in Lebanon

mother, was denied admission into 10 schools in the Beirut area with reasons given, including, “We don’t take handicap [sic],” and “We cannot accept your son because the other parents might not approve.”

Others were able to enroll their children, only for the school to then ask them to remove them later. Zahraa, a five-year-old girl from Hermel with a cognitive disability attended public school for a month before her mother received a phone call from the school’s principal who, according to the HRW report, informed her that “Zahraa had to leave because, [the teachers] cannot leave all the other children and just take care of her.”

Due to the lack of data on the overall number of children with disabilities in Lebanon, it is impossible to give a scale to this problem. By the World Bank’s estimate, worldwide at least 5 percent of children aged between one and 14 have a disability; using that metric, HRW estimates that, on the conservative side, there could be around 45,000 disabled children in Lebanon. However, the government agency charged with registering people with disabilities have just 8,558 children on file—perhaps due to the fact that Lebanon does not consider some conditions—such as high-functioning autism, misophonia, and pathological demand avoidance—as disabilities.

The second barrier to inclusive education is financial, both on the side of schools and of parents. To be accessible to children with a wide range of disabilities, schools need to make buildings physically accessible, have teachers trained in special needs education provision, and supply specialized equipment, such as braille books and hearing aids. According to Aya Majzoub, Lebanon and Bahrain researcher at HRW, both public and private schools lack materials, tools, and systems that enable children with disabilities to learn, such as sign language interpreters. In cases where schools do have these materials, they are often provided by an NGO. Given the lack of funding—made worse by this year’s budget—there is a real shortage of trained special needs staff. When HRW carried out its investiga-

tion in 2017, it found that in nearly all cases, teachers and school administrators had no training on inclusive education methods or ways to incorporate kids with disabilities into the classroom and make sure they were receiving the needed support.

On the parents’ side, if they can enroll their children into schools, they are often required to pay extra fees. LWIS Hazmieh is a school focused on inclusivity for students with special educational

■ Both public and private schools lack materials, tools, and systems that enable children with disabilities to learn.

needs. Shukri Husni, chairperson of LWIS’ education committee, emphasizes to EXECUTIVE the importance of an integrated approach at his school, where students with and without special needs learn in

similar environments with adjustments made to accommodate the former. LWIS includes one special needs student per class, with each class averaging six - 10 students. In addition to regular school fees, students with special educational needs pay an extra of \$5,000 - \$8,000 per year, depending on the student’s needs. According to Husni, this is cheaper than in comparison to most private schools, which would require these students to pay double the regular school fees.

A third barrier to a quality education for physically disabled students is the lack of accessibility in these educational institutions. A 2013 UNESCO report concluded that only five public schools in Lebanon met accessibility requirements for those with physical disabilities, such as having a wheelchair accessible entrance, ramps, elevators, disabled parking, and wheelchair accessible bathrooms.

For students who do manage to enroll in schooling, and whose families can afford the added costs imposed on them, there is an additional barrier to face: the lack of accommodation in the Lebanese national curriculum for special needs students. It is up to the schools themselves to adapt the cur-

Education

riculum to suit specific needs. Even in schools with accommodating internal systems, this results in being forced to teach a curriculum that is unfairly difficult for special needs students. “It is especially difficult for learners with special education needs who follow the Lebanese program to thrive and get an equal opportunity as their peers,” Husni explains. “To move forward, a major shift in the educational system at the national level is needed. If this does not happen, then many learners with special education needs will not make it past 9th grade.”

INTEGRATE, NOT SEGREGATE

One way around these issues is for children with special needs to be sent instead to specialized segregated institutions funded by MoSA, which are designed to serve as educational alternatives. However, these centers came under heavy criticism in the HRW investigation; one disability expert described most of these institutions to HRW as “day care centers—nothing more.”

In the draft budget sent to Parliament, funding cuts will make it hard to prioritize inclusion over segregation. The draft budget called for the Ministry of Education and Higher Education (MoEHE) to cut their funding for equipping primary and secondary schools with technical and other equipment for people with disabilities by \$138,000, down 30 percent from 2018. At the time of writing, the budget had been passed by Parliament but was not yet signed by President Aoun, so EXECUTIVE was not able to confirm if these cuts remained the same.

HOPE FOR THE FUTURE?

While the current capacity of schools for special needs students in Lebanon is severely lacking, there are positive signals for the future. The MoEHE ran a pilot program last year, which provided 30 public schools in Lebanon with full-time, specially-trained teachers, and made these schools physically accessible to children with physical disabilities. It also included a mobile teams of paraprofessionals (speech therapist, psychomotor therapist, and psychologist), which was deployed to provide support when necessary. According to the ministry, one outcome of this project, in particular the awareness sessions they have run at schools, has been the “shift from resistance to inclusion towards acceptance and readiness to support” from staff, students, and parents. Over 100 newly-built schools were built disabled-friendly, with a plan to build 25 - 30 more over the next five years. Another 170 schools (including the 30 in the above project) have been renovated to include disabled-access.

The MoEHE is also working on a new curriculum that “will take into consideration students with special needs.”

Several universities in Lebanon, meanwhile, have taken the step of including training on inclu-

■ “It is especially difficult for learners with special education needs who follow the Lebanese program to thrive.”

sivity as part of their courses for soon-to-be educators. Anies al-Hroub, coordinator of the special education program at the American University of Beirut, tells EXECUTIVE that the university offers a diploma specifically designed to teach its students how to cope with the special education needs and learning disabilities of their future students. The diploma covers all aspects of special education, including behavioral modification, teaching both theory and practice. Hroub also notes that the number of students taking this path has increased recently, which he attributes to a professional demand for special needs educators and growing interest in such courses, even among students not pursuing a degree in education.

Despite these steps, it is clear that special needs students in Lebanon continue to face social, financial, and physical barriers to education. Changing this is important, as investment into special education leads to positive spillovers, through job creation and increasing the opportunity for children with special needs to reach their full potential as adults. All in all, greater efforts should be made to promote an inclusive education system for all children in Lebanon. ■



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CRACKING THE CODE



Providers search for lucrative coding bootcamp models

If anything about the future can be claimed as certain, it is this: The jobs of the future will be different from those of today, and jobs across various sectors will more heavily rely on skills such as coding and programming. This shift has already begun, and Lebanese entrepreneurs, such as the founders of SE Factory, Codi, and Torch Academy, began looking to break into the coding bootcamp market about five years ago and educate fresh job market entrants.

Information on the size or value of the global coding bootcamp market is not readily available, but a quick scan of available camps shows, at least anecdotally, a fairly large number of these bootcamps emerging globally. One estimate from Technavio, a company that conducts market research, predicts that the global full-time coding bootcamp market will reach \$331.96 million by 2021, an 11 percent growth over the five-year forecast period. The Investment and Development Authority for Lebanon (IDAL) reported in 2018 that the Lebanese ICT sector was a fast-growing sector, whose impact, whether direct or indirect, on GDP was expected to be \$7 billion by 2025. Such expectations reinforce the notion that Lebanon's knowl-

edge economy and tech startup ecosystem are an apt destination for the funds provided under Circular 331 from Banque du Liban (BDL), Lebanon's central bank. Even before this data was published, entrepreneurs had identified a need and began looking to fill that gap and hopefully turn a profit.

Learning how to code is not just for tech whizzes designing the latest hit app. Working Lebanese must be prepared and equipped to move into these jobs of the future, as more traditional sources of income are lost to technology. In 2018, PwC, a global consulting company, conducted a survey of 29 countries—of which only Turkey and Israel were surveyed in the Middle East—which estimated that 3 percent of jobs were at risk of automation by the early 2020s, increasing to 30 percent by the mid-2030s and putting 44 percent of low-educated workers at risk from losing their jobs to automation. A June 2019 Oxford Economics report found that up to 20 million manufacturing jobs—or about 8.5 percent of the global manufacturing workforce—could be replaced by robots by 2030. Since 2010, the report states that the number of robots in industry has more than doubled worldwide.

FINDING THE RIGHT SKILLS

Lebanon is not immune to these pressures. Of the local labor force, 21 percent work in the industrial sector, according to IDAL, and the country hosts over 4,700 industrial firms—meaning the rise of automation and robots could impact the makeup of the Lebanese labor force. But with disruption comes opportunity, IDAL identifies gaming, e-health, adtech, software as a service, media streaming, and financial and e-payment solutions as key investment opportunities in Lebanon. Bottom line, with millions of jobs likely to be automated in the future, the living labor force must adapt to define and subsequently fill new roles.

In Lebanon, a 2017 skills forecasting study conducted by the national employment office in conjunction with UNESCO, the EU, and NET-MED Youth—a five-year project implemented by UNESCO and funded by the EU—identified close to a combined 13,000 jobs across the ICT sector, including systems analysts and various developers and programmers; while a 2016 UNDP labor needs

assessment for the ICT sector estimated 2,000 new jobs would be created annually for new graduates. With around 800 ICT enterprises in Lebanon and approximately 2,000 university ICT graduates looking to join the workforce each year, these estimates would indicate that the sector is capable of absorbing these new graduates. However, this projected 15 percent job creation rate should be questioned with the country headed toward austere times and real GDP growth at just 0.2 percent in 2018. Even if these projections prove correct, there is still a gap in that degrees do not necessarily set students up for the workplace.

Fadi Bizri, founder of SE Factory, a coding bootcamp for recent graduates, says there is a skills mismatch, in that universities focus on theoretical knowledge and fail to instill in students the practical knowledge needed to succeed in the field. “If there’s a supply, and there’s a demand,” Bizri asked himself. “Why isn’t it working?” The UNDP report cited a lack of “blue sky thinking” in the current collective skillset, meaning the current labor force lacks the ability to think critically and creatively.

Bizri and his co-founder Zeina Saab recognized this knowledge gap, especially for graduates coming from what he describes as second-tier universities where receiving a high-quality education is hit or miss. SE Factory, which focuses on full-stack web development, is one of multiple endeavors, alongside Torch Academy and Codi, across Lebanon that aims to provide students with this practical technical knowledge while simultaneously boosting critical thinking, but it also teaches soft skills and has career services that include CV writing and mock interviews. All three of these programs target young adults and recent university graduates, and all claim a 90 percent job placement rate of their graduates.

Such endeavors have popped up over the last five years, and a few seem to be operating relatively healthily in their early stages. One that failed to do so though was the popular France-based Le Wagon program. Le Wagon has bootcamps in 35 cities globally, and a branch opened its doors in Lebanon in 2015, but closed after just two cycles. Malik el-Khoury, Lebanon’s Le Wagon founder, says this was for multiple reasons that included the price, the coding language taught, and the fact the teachers hired from the US and Europe were more expensive than local instructors.

The price tag for an intensive nine-week program was \$4,500, and 80 percent of Le Wagon’s students came from abroad. Finding people who

were willing to pay that high a price in Lebanon was difficult, and the number of Lebanese employers who use the language taught, Ruby on Rails, can be counted on one hand, Khoury says. Ruby on Rails is great for people who know little about coding, but is not exceedingly useful in a country that primarily uses PHP and Java, he says. When asked what model may be more sustainable in Lebanon, Khoury says he thinks something where students can go to school in the evenings and still be working during the day could prove more lucrative.

FINDING THE RIGHT MODEL

Torch, which began in 2015 as well, is now beginning to shift to this “short course” model in which students attend classes three evenings a week and choose to learn IOS, Android, or web development, with a focus on building practical skills. Traditionally, students enrolled in a 14-week full-time program for \$1,200, and while they have trained more than 350 students and have three or four courses a year, Inaam Hassoun, program coordinator at Torch, says

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that they are struggling to attract interest in this intensive program in which they would need 10 to 15 students to run a cycle. Hassoun believes this is because

most recent graduates do not have the necessary funds and are focused on getting a job to use their recently obtained degree.

SE Factory, on the other hand, have stuck with the 14-week, full-time model since incorporation in 2016, operating three cycles annually with around 20 students in each cohort, but where they are targeting recent graduates with some background in computer science from the middle and lower socioeconomic classes, they charge just \$100 for the course. In the beginning, this was achievable through grants and heavy fundraising, and now SE Factory charges a success fee for students and companies. For students, once they land a job, one month’s salary is owed that can be paid over three to 18 months. For companies, if they hire a graduate and are satisfied, SE Factory receives 1.5 times a month’s salary once the employee makes it past the probation period. Bizri, one of SE Factory’s co-founders, says that currently they have about 60 companies in their network, including employers outside Lebanon. Regarding growing SE Factory, he says that while they are on a path to sustain-

Coding

Education

ability, they still rely on some grants, and they have recently raised money to open two new bootcamps, one in the north and one in the south, but the exact locations are yet to be determined.

Where SE Factory charges an, albeit very affordable, fee for their services, Codi, a similar program that targets marginalized youth, including low-income Lebanese as well as Syrian and Palestinian refugees, who must be at least 17 years old to enroll in the program, offers six-month classes for free, relying heavily on fundraising from corporate or individual donors. In operation since 2017, they tend to target members of the Lebanese diaspora for funds through cooperation with the Lebanese International Finance Executives (LIFE), a group that works to link Lebanese finance executives abroad back to their roots.

STILL IN DEMAND

Joseph Atallah, director and head of operations at Codi says that they receive their physical operating space for free and only pay for utilities, helping lower operating costs. Beyond having tuition-free courses for the near 30 students each cycle, Codi partners with Al-Majmoua, a nonprofit microfinance organization, to provide microloans of \$2,000 spread over the six months to students who need financial assistance. Graduates must begin paying back the loan within four to six months of graduation, assuming they find employment; if not, Codi covers the costs.

With these four programs all emerging within a two-year window of the others, and three left standing—and where at least one, Torch, has expressed trouble attracting new students for their full-time coding bootcamp—the question arises: Has the market reached saturation? Torch's Hassoun says she thinks it is a possibility, but SE Factory's Bizri disagrees. With only a handful in Leba-

■ The jobs they seek to prepare their students for will continue to emerge rather rapidly over the coming decades.

non, and with those in operation targeting different markets (marginalized youth, lower income youth, and middle to upper class), he argues it is doubtful that the market has reached

saturation. Regardless of these programs' presence, the jobs they seek to prepare their students for will continue to emerge rather rapidly over the coming decades, and demand for skilled workers will not dwindle. In turn, the demand for coding bootcamps—unless Lebanese universities drastically alter their curriculum to ply their students with more hands-on experience—is not likely to decline.

However, prospective students' demand for full-time coding bootcamps, for the time being, seems to be contingent on pricing. Of course, many other factors that may affect demand could be at play, such as preference for programming language skills taught, or offerings on teaching soft skills, but where these offerings seem to be similar across the board, price varies dramatically. Le Wagon's failure was in part due to the Ruby on Rails programming language offered, despite it being a full-stack program, but the other three offer full-stack training on commonly used coding languages. If students have a preference for learning a certain language, this could affect the landscape as well. The experiences of Le Wagon and Torch in struggling to attract people for their relatively pricey full-time courses compared with SE Factory and Codi's relative ease in identifying students indicates that there is at least a partial link with affordability in a country that is undergoing an economic crisis. How coding bootcamps adapt and continue to fare in stormy economic times will require identifying a model that is affordable for recent graduates that teaches the right content, or, like Torch, adapts by shifting to a model where those in the labor force already can earn a living during the day and learn in the evenings.





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Education and the 21st century

The 21st century will cause a rupture in the way we think, feel, behave, create, produce, and live. Fire took eons to start changing humanity—tools, a little less. The first agricultural revolution changed people's lives over the course of 8,000 years. The first and second industrial revolutions took place within less than 150 years. The digital age will change our civilization in less than a century. Economic theorist Jeremy Rifkin talks of a third industrial revolution, one where humanity moves from owning to sharing under the thrust of the internets of energy, mobility, and communication. These tectonic shifts are happening at a speed never before experienced. Leading the charge are the new digital industries that will render those of the 20th century obsolete before 2050.

The industries of the 21st century, old and new, must submit and react to market pressures—staying in comfort zones means assured death. Unfortunately, worldwide, education has been slow to react. Educational institutions may understand the threat, but the pace of change has not matched needs. Parents and educators raised

on the ideas of the 20th century may still insist that students today can learn and adapt, “like we did,” but this is simply no longer the case. Jack Ma, the Chinese business magnate and co-founder of the Alibaba Group, predicts that robots could replace 800 million jobs by 2030. The next generation, who will then be in their 20s, will face a major challenge if we do not prepare them now.

As of today we must forget all we know, because everything that will govern our lives will change. This rupture commands us to enter a period of ongoing creativity and invention. Knowledge of the past becomes obsolete when the future is totally new; this includes education. New education must strive in the following directions: resilience, creativity, collaboration, curiosity, communication, and mathematics.

RESILIENCE

We are an epoch of the mind, one that requires resilience, not memorization. Resilience to fail, to try again, to never lose hope, and to succeed in time frames that are counted not in professional lifetimes, but in decades.

In this new world, education must prepare the mind to see failing as a learning experience, to understand that successes do not endure and that a career path can be shorter than a decade. In the 21st century, newer ideas will overwhelm new ideas. Newer systems will beat already state-of-the-art systems. Just look at the speed in which the likes of Netflix, Airbnb, and Uber entered our lives and disrupted the previous order.

How many schools and universities today entertain such a spirit of resilience? Are we not still in the era where school marks and academic end-year success remain the norm? Take physical education as an example. Sport is considered a by-product of education, not an essential ingredient to nurture the brain—and increase its resilience. Are schools ready to make sport an intrinsic part of the learning process?

Resilience, however, is only one aspect of a whole new approach in education; the most important aspect is creativity.

CREATIVITY

Our current mode of education is learning through rote where educational programs are filled with unnecessary content to memorize. Take this away, and our students can utilize their brain power where it is truly needed—creativity. Today's schools teach children how to acquire knowledge, not how to create. What we need instead is education through creativity. This is understood by state-of-the-art schools in Finland where students are educated via play. Students acquire knowledge through games with their peers that grow in complexity according to their level. This new paradigm yields results; the Finnish education system is considered one of the best in the world by most metrics. At tech universities, like Massachusetts Institute of Technology (MIT), learning is through continual inventiveness and creativity.

It has been established that playing and games put the brain in creative mode. Observe a toddler. They are at their creative best playing with blocks and putty, but this is stifled when entering school systems that value study time over play time. Is this not still the case in Lebanese schools and universities? If your child enters an education system from age three that is not fit for purpose, then how will they cope when forced at a later stage to compete with the all-categories creative minds that will rule the world?

COLLABORATION

Another given in new education is teamwork: Our capitalistic culture, especially in our country, is to favor the "I." We produce egos and entrepreneurs, but not brains capable of working in groups. One of the best ways to be inventive, creative, and beat the competition is through teamwork. We are still in the mode of "Be the first, be the best." We need a new education to change this mentality.

Creativity and collaboration are the essentials of new education, but there is more to add: curiosity and communication.

CURIOSITY

Our ancestors survived because they were curious. Today, our hedonistic civilization has eroded our curiosity in favor of enjoyment. Mindless screen time has replaced our curious instincts. But if schools and universities grasp the urgency of enhancing creativity, they cannot drop the need for knowledge as well. Education must awaken a child's curiosity. In an age where continuous learning becomes the new standard, its fuel is en-

during curiosity. It is a step-change in education. How then do we nurture curiosity? Games and playing is one way, but also by creating a new culture that brings students into contact with nature and triggers their curiosity for the world around them. If parents cannot feed their children's curiosity then they must demand it from their educational systems.

COMMUNICATION

Internet communication will be one of our new century's pillars. In our culture, communicating means speaking our mind without listening to the

other. In the 21st century, students' ability to communicate must not be acquired by social media, but it should be embedded in their program starting with their youngest age. Communication skills are fundamental. Our educators must also spread a spirit of tolerance in a world growing more intolerant by the hour. Are we educating Lebanese youth to open to the world, share, and become tolerant in spirit, ideas, culture, and behavior? Who is championing communication through tolerance in our national education?

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MATHEMATICS

The 21st century remains the era of mathematics. Our century will not forgive us if we do not give mathematics the importance it deserves. Digital becomes the new language. Whether they excel in science, culture, or art, our youth must realize that everything they will do in the future will be digitally-based. Previously, we used to start by learning the alphabet. From now on, numbers will equal letters. Survival in the course of the 21st century is at this price—one we have yet to pay.

Resilience, creativity, curiosity, collaboration, and communication must become the mantra of our new educators. Parents must be aware and acquire a new sense of urgency to ask for it. Time is running short because the curve of techno-progress is steeper and faster than our ability to adapt. Children born in the first quarter of the 21st century must not become collateral damage of the new world because of our irresponsibility. ■

Farid Chehab is the honorary chairman and adviser to the board of Leo Burnett Beirut. His third book, "Bridge over the 21st Century," is available now in English translation.