



Spending on K-12 Public Education: The Lebanese Case

Tarek Shal

Faculty of Education, Lebanese University

ABSTRACT

The purpose of this paper was to examine the public spending on education in Lebanon, in order to make recommendations for executives to strategize this sector. This is a desk review paper that uses secondary resources, using rigorous criteria for document selection. The paper overviews the importance of spending on education and its relationship with the overall quality of education. It highlights the different factors affecting public spending peculiar to the Lebanese context, the various challenges confronting the Lebanese K-12 public education sector, and the spending of Lebanon on it. It provides recommendations for stakeholders and policy-makers on areas that require more attention in terms of spending.

Key Words: Spending on education, educational financial planning, public finance management, education quality, financial analysis.

WHY COST OF EDUCATION MATTERS?

Researches stated that spending on education is highly important to improve teaching and learning outcomes. Improving student outcomes is functional to per pupil spending. This spending differs from case to case, from state to state and from country to country. In some studies, the influence of this effect is larger than in others and, in some cases, additional funding appears to matter more for some students than others. Undoubtedly, there are other variables that may play an essential role in funding on student outcomes, such as how the money is spent – in other words, decision makers money must spent optimally the money to yield benefits.

On another side, spending money on schooling resources is vital to any education sector. Studies showed that spending on class size reduction or higher teacher salaries, are positively related with student outcomes.¹

As most of the countries around the globe lined up their national education visions with the fourth sustainable development goal, they are committed to the fact that sustained improvements in any education sector require fair and adequate distribution of funding across public school districts to lead to improvements of student outcomes. While money alone may not be the only element, studies showed that improving the equity and adequacy of outcomes is conditioned by a more equitable and adequate allocation of financial inputs to schooling.² But without accurate measures of the costs of producing those outcomes, the picture remains incomplete. It is worth to say that most of the best transformational education reforms program fail when budgets are inadequate.

¹ <https://www.brookings.edu/research/class-size-what-research-says-and-what-it-means-for-state-policy/>

² <https://learningpolicyinstitute.org/product/how-money-matters-brief>

In short, money matters, resources that cost money matter, and more equitable distribution of school funding can improve learning outcomes.

In fact, financial planning is an underlying condition of an optimum use of the resources available for education. Literally, the concept of “Financial planning” is still weakly applicable in the Lebanese ministry of Education and Higher Education (MEHE). While it is an essential tool to guide any decision makers how to invest but more important where to invest this is does not seem to be the case for Lebanon. This paper aims at shedding light on the spending of the republic of Lebanon on the public K-12 education sector and how this impacts the learning outcomes and consequently the quality of education.

THE EDUCATION CONTEXT

The K-12 education sector is dominated by private schools. The number of private K-12 schools existing in Lebanon is 1637³ compared to 1237⁴ public schools. These are non – profit and belong to ministry of education and higher education (MEHE). Some of the private schools are owned by various religious groups, others are modern non-sectarian schools, profit schools, and elite schools. These all differ according to their educational goals, ideological orientations and quality of their educational infrastructure, and outputs. Within this pattern, the high share of the private sector is a dominant and defining feature of the system. Many of these schools teach, further to the Lebanese baccalaureate, overseas programmes (i.e. French baccalaureate, International baccalaureate etc..). In 2019/20, according to CERD data, more than 50% of the pupils from kindergarten to secondary schools were enrolled in the private sector. According to UNESCO figures, in 2019, enrolment in private schools reaches 74.7% in preschool, 71.8% in primary, and 58.1% of the secondary. Nonetheless, the private and public education schools are strongly interconnected as we can see many of teachers are common between both specifically in the secondary level. Teaching body is female dominated at both private schools (85%⁵ females) and public (82%⁶ females). The number of students as reported by MEHE for the year 2019-2020 is 385000⁷ pupils in public schools compared 750000⁸ in private schools. It is also worth to say that due to the economic collapse that Lebanon is witnessing, the majority of parents do not have money to afford private schooling to their children. Parents were forced to move their children to public schools.

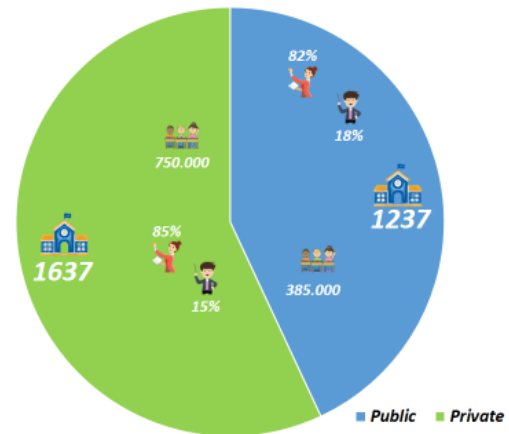


Figure 1 Education statistics

³ Source: MEHE, private education directorate. 366 out of 1619 are subsidized i.e. private free schools.

⁴ Source: MEHE, SIMS 2021.

⁵ Private education directorate, MEHE.

⁶ MEHE-SIMS.

⁷ MEHE-SIMS.

⁸ Private education directorate

PUBLIC EXPENDITURES ON EDUCATION

The Global Education Monitoring Report 2019 of UNESCO stated that the median spending on public education globally was 4.4% of GDP in 2017, which is above the minimum standard by 4% set in the Education 2030 Framework for action; it also reported that the expenditures on education ranged between 3.4% in eastern and South-eastern Asia to 5.1% in Latin America and the Caribbean. While the global median share of total public spending on education was 14.1%, less than the standard of 15%, it ranges from 11.6% in Europe and North America to 18% in Latin America and the Caribbean.

	As share of GDP (%)	As share of total public expenditure (%)	Per student (constant 2015 PPP US\$)		
			Primary education	Number of illiterate (millions)	Tertiary education
World	4.4	14.1	2,028	2,716	4,322
Sub-Saharan Africa	4.1	16.5	268	476	2,485
Western Asia and Northern Africa	3.8	12.3	4,392	4,911	5,150
Central and Southern Asia	3.9	15.7	764	1,048	1,951
Eastern and South-eastern Asia	3.4	13.5	2,645	7,700	6,165
Latin America and the Caribbean	5.1	18.0	1,800	2,287	2,517
Oceania	4.7	14.1	—	—	—
Europe and Northern America	4.8	11.6	7,416	7,890	8,621
Low income	4.0	16.1	194	276	1,675
Lower middle income	4.4	16.4	985	1,104	2,029
Upper middle income	4.1	13.9	2,155	2,498	3,185
High income	4.9	12.9	7,990	8,955	10,801

Notes: PPP = purchasing power parity. Estimates are medians, reported if at least 50% of countries in a group have data.
Source: GEM Report team calculations based on UIS data.

Figure 2 Public education expenditure by country income group and region, 2017

The GEM⁹ report also denoted that

in 2016, the average share of public education expenditure disbursed on primary education was 35%, with regional shares ranging from 47% in low income to 26% in high income countries. The global average spending for secondary education was 34%, and regional averages ran from 26% in low income to 38% in lower middle income countries. This pattern is explained relatively by the higher share of adolescents and youth in richer countries who continue their (Lebanese Ministry of Education and Higher Education, 2018) (UNHCR) (Health, 2021) schooling and complete secondary education.

The Arab Monetary Fund reported that the government spending on education had witnessed some progress. The mean spending of the Arab countries as a group indicated 4.2% of average grouped GDP. The graph below showed the spending on education for some of the MENA regions as percentage of their GDPs for the year 2017.

⁹ Global Education (Fund, 2017) Monitoring report, UNESCO, 2019.

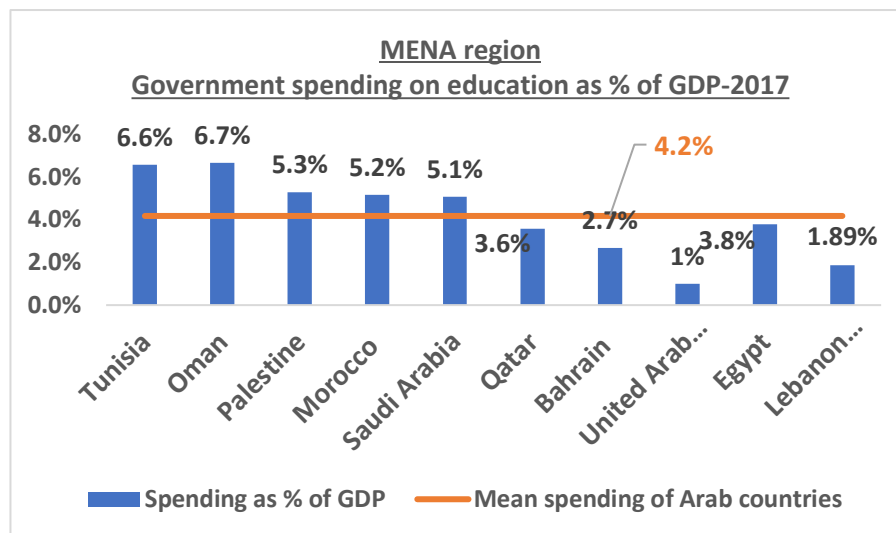


Figure 3 Government spending as a share from GDP, MENA region, 2017

As for spending on education as percentage of the per capita national income, the figure below showed from the World Bank databank indicated that the highest percentage of government spending on basic education reached 32% of the per capita national income, while the lowest percentage was 5.47% for Rwanda, followed by Romania with 7.82%, then Brunei 8.8% and Iran 9.52%, while in Lebanon it reached 24% of the per capita national income for basic education and rise to 37% for secondary education for the year 2019. The differences in public spending on education means that the quality of education is different among countries across the globe. In addition to that, increasing spending does not necessarily mean improving the quality of education unless it is accompanied by serious planning and reform strategies appropriate to each country. The main objective remains in the proper investment and allocation of spending in education to improve the quality and efficiency of learning outcomes.

FACTORS AFFECTING THE SPENDING ON PUBLIC EDUCATION IN LEBANON

Lack of financial planning

Financial planning is an essential tool to help any organization to make best use of its available resources to assure its wealth, improvement and sustainability. It entails forecasting the revenues and planning expenses based on these revenues to meet needs. As a matter of fact, MEHE lacks financial planning as most of K-12 public schools leaders are not equipped with the proper financial planning and budgeting skills reflected in school budgets, they rather utilize a ready-made expenditures forms estimating their expenditures for the coming academic year. One of the direct effect of lack of financial planning can be explained by the shortage of money of “wealthy” schools that call during the academic year for money transfer from MEHE’s budget reserve to cover their expenses. We can also observe that in many cases, the excess of money of some wealthy public schools is used to compensate the financially troubled schools. One of the main reasons behind the lack of financial planning and budgeting is the absence of national vision for the education sector in Lebanon. Recently, MEHE developed with support of Unesco IIEP and other donors the five year education sector plan which should consist a strategic road map for MEHE in the next coming five years.

Expired laws and policies

Most of the laws governing the education sector in Lebanon are back to the Ottoman Empire. Some are dated back to 1960's and they are not updated since then. For example, the decrees 2153 /2007 and the decree 1845/2006 that describe the relationships between different funds pertaining to public schools are dated back to 2006 and their last upgrades happened in in 2010. Both decrees and their updates did not yet address the concept of “needs based school budget” that should guide any school principal to formulate this type of budget. Recently, MEHE in cooperation with external donors work on updating both decrees to comply the financing of public schools with international financial standards along with the standards applicable by the Lebanese ministry of finance.

Schools Rental

387¹⁰ public schools operate in premises rented from private owners. The annual rent invoice of these schools is approximately LBP 25 ¹¹ billion (~\$17 million @ 1500lbp/1\$) which is burdening the state's budget. Beyond the financial burden that this rent imposes, it is worth to say that most of the rented schools are originally residential apartments and are not compliant for schooling. This also applies to the Lebanese university that have many rented premises not suitable for teaching. This raises the issue of the efficiency of public spending and the return on investment in education while some school premises are not fully utilized. MEHE yet did not take any real steps towards combining schools belonging to the same education districts i.e. REOs¹² to economize costs and assure efficient learning.

Contractual teachers

According to SIMS, 35 944¹³ teachers belong to DGE for the academic year 2020-2021. A teacher joining the public school system is either a civil servant i.e. a permanent teacher or a contractual i.e. recruited on contractual basis. Some 40 % of public teachers (14 598) are civil servants and the remainder (21 346) are contractual, distributed across 1237 public schools. The distribution of permanent teachers is unevenly skewed to higher grades. A large majority of secondary school teachers are permanent staff (58%) while primary schools have nearly

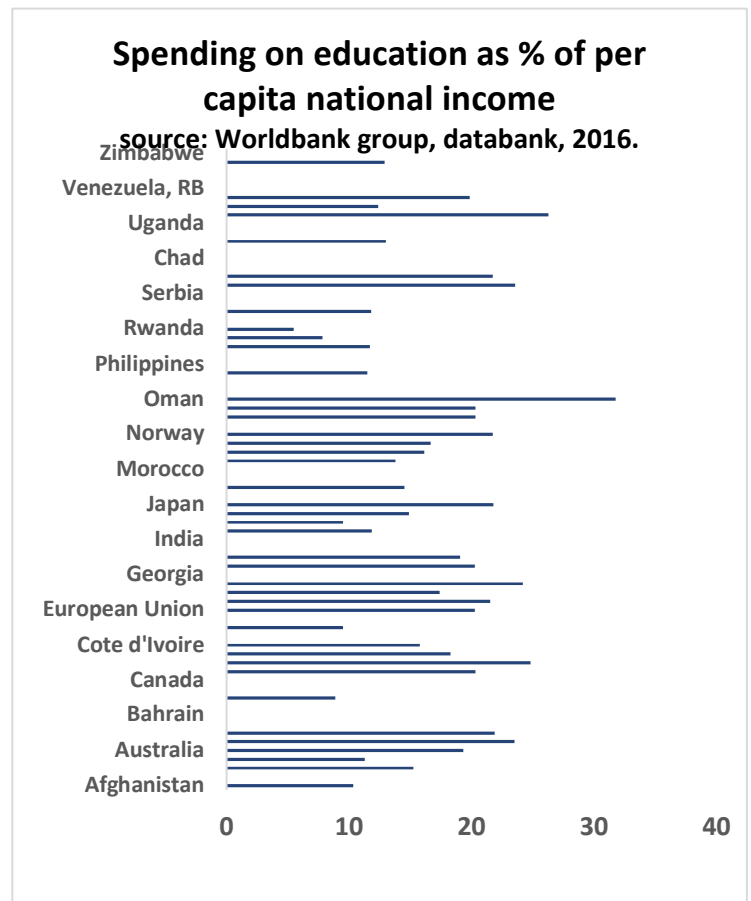


Figure 4 Education spending as percentage of per capita national income

¹⁰ Source: Primary education department, 2018.

¹¹ Source: Primary education department, 2018.

¹² Regional Educational Office

¹³ MEHE, SIMS 2020-2021

twice as many contractual teachers as permanent staff. The largest majority of teachers are female (82%). The private sector employs some 45000¹⁴ teachers, most of whom are also female, in 1637 schools.

Contractual teachers is one of the most complicated matters affecting the education sector in Lebanon. It also has an overburdening effect on the state's budget. In fact the freezing of the civil servant employment since 2017 along with the absence of replacing retired teachers by new teachers left MEHE with no other options but to contract new teachers to respond to demand. It is worth to say here that contracting teachers is not yet regularized and is subject to many political interventions imposing contracting unneeded teachers in public schools. This results in more deficits on the state's budget due to overemployment and lower the quality of education.

Absence of Solid and accurate information data base

SIMS¹⁵ should be the unique and sole data base pertaining to MEHE. Despite that MEHE made great steps during the last three years towards the generation of a unique student ID but yet data in SIMS is incomplete. Adding to this the data multi-source at MEHE i.e. SED¹⁶, PED¹⁷, CERD¹⁸, DOPS¹⁹, PMU²⁰ etc... and the data inconsistencies among these sources made an accurate calculation of the spending on education in Lebanon very difficult. For this sake, efforts resume at MEHE to reach a zero error data in SIMS.

Inexistence of Public Finance Management System at MEHE

In reality there is no Public Finance Management (PFM) system at MEHE but an "old-fashion" budget system reflected in an expenditure sheet filled on a yearly basis describing the cost of different activities. MEHE made great efforts in the last three years to put in place a strong PFM system allowing the estimation of revenues and planning expenses accordingly. The developed PFM system is in progress toward automation in SIMS, it rectifies the relationship between different funds and budgets nourishing the public spending on education and allows to define the cost of education in Lebanon at the level of the school, mohafaza and caza. If the implementation of this system reaches "happy ends", it will definitely create a quantum leap in the public education sector in Lebanon as it will help the decision makers to get at fingers prick any financial indicator, report or data pertaining to strategizing the sector i.e. cost of student by school, by geographic zone, by administration, etc....

Education of Syrian refugees' crisis

Starting 2011, the Syrian war resulted in a migration of 1.2²¹ million of refugees to Lebanon. This led to the enrolment of 220,498²² non- Lebanese children in public schools as of 2018. The Lebanese education system which is originally vulnerable was not able to bear the massive

¹⁴ Private education directorate

¹⁵ School Information Management System.

¹⁶ Secondary Education Department.

¹⁷ Primary Education Department.

¹⁸ Center for Education Research and Development.

¹⁹ Direction d'Orientation Pédagogique et Scolaire.

²⁰ Project Management Unit.

²¹ UNHCR

²² MEHE-PMU-RACE

excess number of students resulting from the Syrian crisis. This resulted in introducing a system of financing, sponsored by donor countries to afford education services to the syrian refugees'. Financial donations to the public education system for the years 2014–2018 had an annual average of US\$250–US\$300²³ million,

Consequently, the second shift that was created for refugees' children faced many challenges such as language fluencies as Syrian curriculum is all in arabic, lack of socio-psychological support for students and their families, existence of different special learning needs, and in particular, very unprivileged socio-economic living conditions, which all have been aggravated by the effects of the absence of face to face learning during the last one and a half year²⁴. These increased the stress on MEHE's budget mainly as opening the schools in the afternoon for the second shift incurred additional administrative and operating costs.

Centralization of the system

Lebanon's education system is characterized by strong centralization system. MEHE regulates and governs all policies, budgets, curriculum, teachers, and staff recruitment through the Regional Education Offices (Ghamrawi, 2010). Private schools have control over their own systems (Ghamrawi, 2010).

This aspect deprived the education system from many advancement and improvement opportunities that could have improved performance and decreased the burden on the budget.

Political intervention

As any other ministries, political interest exists at MEHE. Representatives of different political powers are present and exert powers at different levels. This in fact intervention exhausts the system and blocks any cost-effectiveness initiative. For example the political intervention plays a major role in the recruitment of any new school principal, assignment and move of teachers from region to region regardless if this serves the administration or not.

New-covid 19 in Lebanon

February 21, 2020, the first case of new covid 19 was reported officially in Lebanon. The numbers witnessed rapid escalation of cases in Lebanon. Responses by the government for these official cases were slow. By February 29, schools and universities got closed and many of the leaderships of these schools and universities opposed this decision. Many lockdowns and curfew were imposed later and despite the positivity rate decreased to 2.7%²⁵ the mortality rate recorded on May 24, 2021 was 4.67% (7 cases out of 150). The country re-opened gradually, gyms, restaurants and pubs are re-opening but the probability of a pandemic spike is still very high due to the lack of respect pandemic prevention rules. On the vaccination side, Lebanon is still far away from the herd immunity.

Though MEHE announced the return to normal learning (i.e face to face) in public and private schools, universities and institutes as of september 2021, this was postponed later until october. By then, schools opened fully with lack of the minimum level of requirements for a safe return. Undoubtedly, the Covid-19 crisis has increased pressures on the educational sector,

²³ MEHE-PMU-RACE

²⁴ The World Bank 2018. Research for Results program.

²⁵ MOPH, May 24, 2021

especially in terms of the cost of sterilizing classrooms and offices and ensuring a safe distance for social distancing in the classrooms.

EFFECTS OF DIFFERENT CRISES ON THE EDUCATION SECTOR

The challenges facing the current academic year is double. Prior to COVID-19 the Lebanese educational school system was struck by the October 19 revolution which locked down schools for several months. The revolution was due to the harsh economic crisis overwhelming the country due to the corruption of the politicians in authority. In February 21 the first positive case of COVID-19 was officially reported in Lebanon and this added strains to the exhausted Lebanese economy.

The multi crises that afflict Lebanon affected directly the education sector, the hyperinflation, unemployment, closure of business and the haircut on deposits put Lebanese residents under huge stress. They are unable to pay the tuition fees of their children in private schooling. Also, the private schooling which attracts 750,000 students²⁶ in 1637 private schools are facing risk of closure in the coming couple of years if MEHE does not set an emergency plan to save them. The education sector witnessed a migration of 53,000²⁷ students from private to public schools during the academic year 2021. This number is expected to up rise in the next coming years with the prolongation of the existing crises.

CURRENT SPENDING OF THE LEBANESE EDUCATION SECTOR

In reality, there are seven funds overarching the spending on public schooling in Lebanon:

The school fund

It secures the necessary expenses for the operation of any public school. The resources of this fund consist of the following: (1) Parents' contributions (only for secondary education, while they do not contribute anything to basic education as it is free); (2) School store revenue; (3) Banking Interest; & (4) Donations and donations.

A school financial committee will manage and monitor this fund. The decree 1845/2006 sponsors all expenditures and purchases of this fund as the relevant financial committee must approve any disbursement up to the amount of LBP 2500,000. Any expenditure exceeding this amount and up to the amount of LBP 6000,000 requires the approval of the relevant REO head while if the amount exceeds LBP 6000,000 it requires the approval of the primary education director.

For secondary education, expenditures ceilings vary as amounts up to LBP 3,000,000 requires the approval of the relevant financial committee, while any spending exceeds this ceiling and up to LBP 10,000,000 needs approval of the director of secondary education.

It is worth mentioning that the independence of schools in Lebanon is weak and school principals work under a highly centralized bureaucratic structure where the role of the school principal is limited to assessing the human and material needs of the school, and reporting these needs to the relevant REO and then to the relevant directorate within the existing

²⁶ MEHE, Private Education Unit

²⁷ MEHE, SIMS, number is not yet final.

administrative hierarchy. In fact REOs assign teachers and evaluate their work, leaving no room for school principals to hold teachers accountable for their performance (Matar, 2012).

The mutual school fund (primary and secondary schools)

The revenues of this fund consist of 10% of the primary schools and high school fund in order to cover the expenses of public schools (primary and secondary) with difficulties. These contributions are determined on a yearly basis by the minister of education upon the recommendation of the director general. This fund is managed by the “school mutual fund committee” which is formed by the Minister of Education upon the proposal of the director general. The money feeding this fund are deposited in a national bank under the name “school mutual fund committee” and they are disbursed based on the approval of this committee. The disbursement from this fund shall be bound by the signature of the head of the relevant committee, the secretary and the treasurer jointly. In case of cancellation of this fund, its money will be distributed to relevant primary and secondary schools based on a decision issued by the minister of education. In reality, there is no unified budget form for this fund. Rather, it is an annual spending sheet that its spending items vary from year to year according to the ministry's priorities. The priorities are translated by a minister's decision based upon a proposal by the director general.

The parent fund

The revenues of this fund derive from: (1) Parents' contributions that are determined by the administrative committee of the parents' council, according to the ceilings set by MEHE in light of the recommendations of the general authority of parent's councils; (2) Cash and in kind donations; & (3) Aid provided by official authorities.

These revenues cover the students' health care expenses, in-kind and cash contributions to high achievers students, in-kind and cash contributions to orphans and needy students according to criteria set by the parents' committee, extra-curricular activities, rewards and some fixed assets in the school and some other costs. It is worth mentioning here that most public schools in Lebanon do not have parent councils, and if there have, they are not active. Based on the decree 2094/2002 the revenue of this fund varies according to the number of students belonging to the school. They derive from the parents' contribution at LBP 50,000 per student. This amount includes the contribution for school servants and their membership to the social security fund. This was amounted to LBP 5,000. To note here that the minister determines on a yearly basis the contribution of the parents' according to appropriate circumstances and economic and living conditions. Expenditures from this fund are disbursed according to the recommendations of the administrative committee, and it shall be accompanied by the signature of the head of the parents' council, his deputy, the secretary and the treasurer. There is actually no real “budget” template for this fund, but an annual spending sheet according to which these contributions are disbursed as per the laws and regulations in force.

Guards and servants fund

Its revenues stem currently from the parents' contributions at an amount of LBP 20,000 per student. These revenues cover the costs of servants and guards' subscriptions to the social security fund. The proceedings are transferred to the guards and servants fund in each REO. This fund is managed by a specialized committee. It is also not a real budget but rather an annual spending schedule.

Book roll over fund

The revenues of this fund consisted of the contributions of the students' families. They are symbolic contributions deducted from the parents' contributions to secure and renovate the official books of public schools students (primary and secondary) at nominal prices. This fund is managed by a "textbook committee" which is formed at every public school upon the approval of the director general of education. This committee collects textbooks at the end of each academic year from former students, schools repair these books and then sell them to new students at the beginning of the next academic year at symbolic fees. This fund is no longer existent and its contributions are kept at their original sources i.e. the parents' councils fund in relevant schools.²⁸ This matter is not yet been legalized though a decree has been issued since 2004 to cancel this fund but yet not validated.

Regional educational offices budget

The revenues of this fund derive from the school mutual fund at a rate of 7% deducted from gifts and donations collected from institutions and individuals, as well as contributions from the Lebanese state and the MEHE. These revenues cover service and cleaning works for relevant REOs, stationery for each REOS, maintenance of offices and REOs premises, office supplies such as ink and others, official exams and heating and cooling facilities and their maintenance. It is worth mentioning here that the costs of the official exams for the academic year 2019-2020 were covered by the budget of relevant REOs based on a decision of the minister of education²⁹.

State budget (Public budget-Ministry of Finance)

It contains the revenues and expenditures of the entire state. The public accounting code defines in article 3 the state budget as "a legal instrument in which the state's expenditures and revenues are estimated for a next coming year and whereby collection and spending are authorized."

In fact, Lebanon uses what we call "item budget" in which expenditures are allocated annually to different ministries. This budget does not use criteria for evaluating performance based on specific programs translating the national vision of the state. In other words it does not reflect the state's economic plan. Further this, most countries in the world formulated specific budget law i.e. the law that overarches the general budget formulation, while in Lebanon it is the public accounting code leads the state's budget formulation.

The preparation of the state budget in Lebanon entails two stages: the draft budget stage, during which the ministry of finance requests from all ministries to estimate their expenditures and revenues. Upon receiving them, the ministry of finance discusses number with relevant ministries. After negotiations over the various budgets of different ministries leading to validation of each ministry for its own budget, ministry of finance collects all budgets in specific formats and sends to the minister's council for approval. After approval by the minister's council, the consolidated budget is sent to parliament council to be approved by the parliament members. After being approved by the parliament the "budget law" is issued. The budget law is the second stage of the state's budget formulation and based on it all ministries are disbursed.

²⁸ Source: MEHE, Primary education department, 2021.

²⁹ Minister Tarek Al Majzoub.

As for ministry of education and higher education, the director general addresses an official letter to all departments, directorates and units at MEHE requesting each to estimate their annual expenses and revenues. Upon receiving them, the director general will discuss them with each department separately. After reaching an agreement, each budget is sent to the accounting unit at MEHE to put them in specific formats ministry of finance formats.

While the funds enlisted above should consist the cornerstone in calculating the cost of Lebanese public education (K-12), in fact this is not the case as the intertwining relationship among these funds and the intersection of their contributions to the school budgeting make this calculation very problematic. For this purpose, this paper will use the figures of the budget laws for the years 2019 and 2020 to address the government spending on public K-12 education as these represent the most accurate and inclusive figures pertaining to this type of governmental spending.

The diagram below shows the complex relationship between the different funds contributing to the public schooling budgeting:

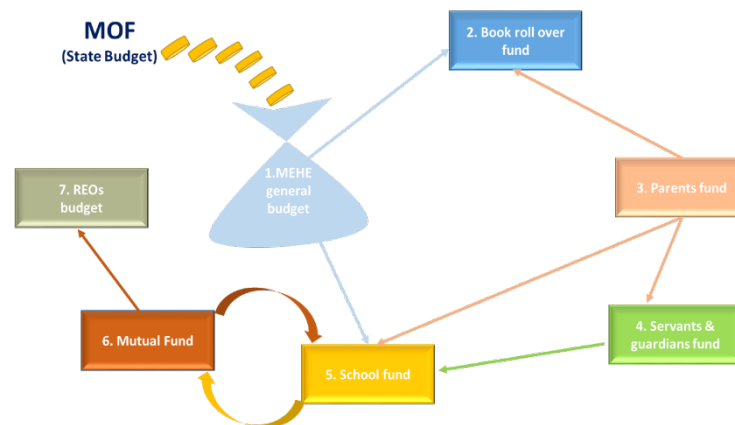


Figure 5 Relationship between different schooling funds

The correlation among these budgets appears to be very strong in terms of contributions and the expenses they cover to the public education sector (K-12). We can find that the same budgeted items might be covered from different funds at different rates. In reality, the absence of a real yearly budgeting exercise at MEHE and the lack of a fully automated public finance management system make it very difficult to any executive at MEHE to give precise response about the in-flow and the out-flow of these funds and consequently the cost of education. In addition to this, the accounting unit which is supposed to play a vital role in the financial and budget planning at MEHE is more inclined in the expenses forecast of each directorate and unit at GDE and to report relevant numbers to the Ministry of Finance.

The next paragraph will explain the actual spending on public K-12 education schooling based on the state expenditures dedicated to education. It will be based on the budget's share of ministry of education and higher education in the state budget as per the budget laws of 2019 and 2020.

ACTUAL SPENDING ON EDUCATION IN LEBANON FOR THE YEARS 2019-2020

The following table explains how the spending on education is allotted on the following different main directorates:

1. JAD=Joint Administrative Directorate
2. GDE=General Directorate of Education
3. PED=Primary Education Department
4. SED=Secondary Education Department
5. HED=Higher Education Department
6. TVET=Technical Vocational Education and Training
7. CERD=Centre for Education Research and Development
8. LU=Lebanese University

<i>Budget 2019-MOF</i>	Total	Salaries	%Budget Strand	%GDP
JAD	LBP 1,541,781,000.00	LBP 1,069,700,000.00	69%	0.00001
GDE	LBP 82,471,518,000.00	LBP 72,183,580,000.00	88%	0.00084
PED	LBP 891,424,462,000.00	LBP 718,750,000,000.00	81%	0.00840
SED	LBP 399,081,070,000.00	LBP 375,784,220,000.00	94%	0.00439
HED	LBP 1,994,541,000.00	LBP 1,427,900,000.00	72%	0.00002
TVET	LBP 258,451,640,000.00	LBP 248,018,450,000.00	96%	0.00290
CERD	LBP 21,675,000,000.00	LBP 7,500,000,000.00	35%	0.00009
LU	LBP 396,707,672,000.00	LBP 312,960,272,000.00	79%	0.00366
Mutual Fund	LBP 31,950,000,000.00	LBP -		2%
Total Budget MEHE	LBP 2,085,297,684,000.00	LBP 1,737,694,122,000.00		
State Budget	LBP 23,105,574,730,000.00			
GDP	LBP 85,516,000,000,000.00			

<i>Budget 2020-MOF</i>	Total Budget	Salaries	%Budget Strand	% of GDP
JAD	LBP 1,359,244,000.00	LBP 990,380,000.00	73%	0.00001
GDE	LBP 72,315,869,000.00	LBP 64,923,420,000.00	90%	0.00073
PED	LBP 818,271,500,000.00	LBP 651,250,000,000.00	80%	0.00729
SED	LBP 369,160,650,000.00	LBP 349,500,000,000.00	95%	0.00391
HED	LBP 12,805,192,000.00	LBP 1,232,520,000.00	10%	0.00001
TVET	LBP 251,934,586,000.00	LBP 242,425,760,000.00	96%	0.00271
CERD	LBP 20,257,500,000.00	LBP 7,500,000,000.00	37%	0.00008
LU	LBP 375,057,932,000.00	LBP 315,210,272,000.00	84%	0.00353
Mutual Fund-LU	LBP 31,950,000,000.00	LBP -		1.89%
Total Budget-MEHE	LBP 1,953,112,473,000.00	LBP 1,633,032,352,000.00		
State budget	LBP 18,231,793,426,000.00			
GDP	LBP 89,297,000,000,000.00			

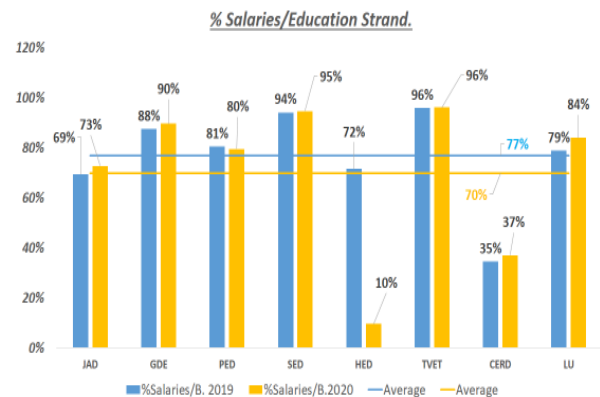
Figure 6 MEHE consolidated budget laws 2019 and 2020

The two tables above show the share of each directorate from the budget along with the portion of the salaries by budget strand as a percentage of the GDP.

Salaries of Joint Administrative Directorate (JAD) consist 69% of its budget in 2019 to reach 73% in 2020. They consist 88% of budget pertaining to the General Directorate of Education (GDE) in 2019 to reach 90% in 2020. Salaries remain almost the same for the Primary Education Department (PED) and for the Secondary Education Department (SED) for 2019 and 2020. On another page, we observe a steep decrease of the salaries of the Higher Education Department (HED) from 72% in 2019 to 10% in 2020. In fact this is attributed to the increase of expenses relevant to this directorate in the second half of 2020 which led to the decrease in the wages ratio relevant to the higher education directorate. The Technical Vocational Education and Training (TVET) salaries did not show any variation between 2019 and 2020 but remains at the stage of 96% its budget strand. Nevertheless, it worth to notice that this high share of the budget is due to the overemployment in the TVET sector mainly the huge number of contractual. The salaries dedicated to the Centre for Educational Research and Development

(CERD) showed slim increase of 2% from 2019 to 2020 while those of Lebanese University (LU) showed an increase of 5% between 2019 and 2020, this also might be related to the increase in number of contractual professors in 2020.

The total MEHE's budget approximately remains at the same threshold in terms of percentage of the GDP and stands at around 2% of the GDP's state. This in some way indicates that yet education is not yet among the state priorities. This analysis indicates that the salaries proportion of the budget should be given a high consideration in strategizing the sector as in average they consist 77% of the MEHE budget which means that only 23% is left to cover other operations costs.



The histogram above displays the proportions of salaries budget strand. It showed that in 2019, only the salaries of JAD, HED and CERD are below average, which means that these directorates have more chances to spend on other expenses rather than only salaries.

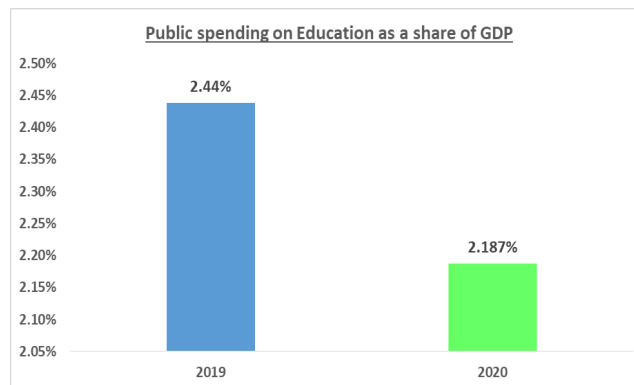


Figure 8 Spending on education as

The figure above stated the public spending on K-12 public education for the year 2019 was 2.44% of the GDP of the country while it formed only 2.187% of its GDP for the year 2020. In both years this share is below the average of the MENA region countries which was 4.2%³⁰ in year 2017. This low share means that yet education is not among the top priorities of the successive Lebanese governments from 1990 till date.

In reality, the economic collapse in the country contributed to the deterioration of the main sectors of the republic. The education sector was mostly affected. Public K-12 schools are struggling, private K-12 schools are encountering many difficulties and many may close their doors in the next couple of years, huge migration of students from private to public K-12 is observed as parents do not have money to spend on the education of their kids in private K-12

³⁰ Arab Fund Report 2017

schools, also many teachers are leaving the country (as well best university professors). These all represent real threats to the education in Lebanon and put the full sector at risk.

On the other side, according to the recommendations of the Lebanese ministry of finance for the year 2020, MEHE still does not have a clear figure of the number of schools and teachers, as well as the number of students. Also, the contributions to the contractual teacher for MEHE, whether at the primary, secondary or TVET level are constantly increasing for several reasons (on top of these is the retirement of civil servants and absence of replenishment formula for the education sector).

Also, the number of teachers attached to the administration is large, those receive teachers' salaries and work fewer hours. It was recently decided to reduce their hours from 35 to 27 hours per week, this matter is also one of the additional reasons that urges MEHE to work towards automating its systems.

The Ministry of Finance also stresses the need to obtain all information related to teachers, contractual, number of schools and hours, and put them in an automated database to retrieve various indicators, such as the ratio of contract teachers to students and others... this is to enable the concerned decision-makers to take any appropriate decision in this regard. The ministry of finance believes as well that it is necessary to stop attaching teachers to the administration and to give them the benefits and allowances of teachers' such as salaries with less working hours because this harms management of public money and the principles of justice and equality.

	2019	2020
Total Budget MEHE	LBP 2,085,297,684,000.00	LBP 1,953,112,473,000.00
State Budget	LBP 23,105,574,730,000.00	LBP 18,231,793,426,000.00
GDP	LBP 85,516,000,000,000.00	LBP 89,297,000,000,000.00
Budget PED	LBP 891,424,462,000.00	LBP 818,271,500,000.00
Budget SED	LBP 399,081,070,000.00	LBP 369,160,650,000.00
Salaries PED	LBP 718,750,000,000.00	LBP 651,250,000,000.00
Salaries SED	LBP 375,784,220,000.00	LBP 349,500,000,000.00
# of Students	328274	340467
# Students PED	253928	263969
# Students SED	74346	76498
# Teachers	46967	47306
# Permanent Teachers	23092	22644
# Contractuals	23875	24662
Average Students/Teacher ratio	6.989460685	7.197120873
Avg. Cost/student	LBP 3,931,184.11	LBP 3,487,657.10
Cost per PED student	LBP 3,510,540.24	LBP 3,099,877.26
Cost per SED student	LBP 5,367,888.92	LBP 4,825,755.58
GDP per Capita LBP-before inflation @ USD/LBP=1500	LBP 14,482,200.00	LBP 15,064,200.00
Avg. Cost/Std/GDPper capita	27%	23%
Avg. PED student/GDP per capita	24%	21%
Avg. SED student/GDP per capita	37%	32%
Minimum wage in LBP/year	LBP 7,200,000.00	LBP 7,200,000.00
Avg. cost of student/minimum wage-before inflation	55%	48%
Avg. PED student/Minimum wage	49%	43%
Avg. SED student/Minimum wage	75%	67%

Figure 9 Education spending calculation

Calculating the spending on education per student shows that the cost of a PED student in 2019 was ~ LBP 3 500 000 (\$2200 @ 1USD=1500LBP) and decreased to ~LBP 3 000 000 in 2020 which is almost \$2000 (@ 1USD=LBP1500). This cost increases for the secondary student to reach ~ LBP 5 400 000 (\$3600 @ 1USD=LBP 1500) in 2019 and ~ LBP 4 800 000 (\$3200 @ 1USD=1500LBP) in 2020. It is worth to add here that we do not have enough details to calculate the cost of permanent teachers per student in Lebanon but based on an earlier study conducted by the world bank, it stated that the cost of secondary permanent teachers is in line with the OCED countries³¹.

On the same page, the World Bank estimated in a study conducted in 2018 that the government spending on education in Lebanon is about \$2,058 per primary education student, \$2376 in secondary, and \$ 2558 in tertiary level. The same study also estimated that government spending on teachers' salaries was \$1586 at the level of primary education per student, which is higher than Turkey's spending which was worth \$ 1386 and Hungary's spending which was \$1229. These spending were less than France's spending on teachers which was amounted to \$1735 in the primary level and Poland which spent \$2247 on a teacher salary per student at the primary level.³²

Also, SIMS figures for the year 2019 indicated that the average number of students was about 13 students per teacher in the primary education and 7 students per teacher for the secondary education level, which is lower than the average of teacher-student ratio recorded in the OECD countries for the secondary education as this was one teacher for each 13 students³³, while this ratio is roughly aligned with the OECD for the primary education level.

GRANTS AND AIDS

According to Saeed (1995), foreign aid is the debt given by a country to another country on concessional rates. This means that debt are given at interest rates lower than the prevailing rates, longer period for repayment and grants which do not entail the payment of the principal or interest i.e. a free gift. This definition includes all kinds of resource inflow that are publicly granted and are made either from government to government or from financial institutions to a government.

There are two main sources of foreign aid:

- (a) Bilateral aid, mostly given based on the economic or political relations between the governments of donor and recipient countries.
- (b) Multilateral aid, given by the multilateral aid organizations, institutions or agencies of the developed countries to the recipient country. The World Bank, Asian Development Bank (ADB) and International Monetary Fund (IMF) are examples of multilateral organizations who give aid to developing countries according to their needs.

³¹ <https://www.byblosbank.com/common/economic-research-new/lebanon-this-week/lebanon-this-week-551/government-spending-on-education-at-12bn-annually>

³² <https://www.byblosbank.com/common/economic-research-new/lebanon-this-week/lebanon-this-week-551>

³³ OECD/UIS/Eurostat (2019), Education at a Glance Database, <http://stats.oecd.org/>. See Source section for more information and Annex 3 for notes (<https://doi.org/10.1787/f8d7880d-en>).

There are two main reasons behind the motives of developed countries in giving aid. First the developing countries have a limited debt servicing capacity because of which they cannot borrow from their commercial sources for financing their development. Secondly, developing countries also need these foreign resources to cover their savings-investment gaps and import-export gaps. Thus this foreign aid given by developed nations plays an important part in financially supporting the economic growth and development of the developing countries.

In simple words, the office development assistance at the OECD defined Aids as “the flows of financial, technical assistance and goods provided by developed countries to benefit developing countries that aim to promote economic development and societal well-being. Aids can take the forms of grants and subsidized loans. In the case of a loan, at least 25% of the loan value must be a grant. Aids also include political and humanitarian development programs and debt forgiveness, with the exception of grants or aid provided for non-development purposes such as military and security aids, direct investments and others”(ODA, OECD, 2010). These aids can be either cash and in kind contribution.

In Lebanon, the accumulated budget deficits since 1990 until today, the increase in debt service, which exceeded 170 percent of the GDP for the year 2019, in addition to the syrian crisis, which also burdened the Lebanese economy, this is further to other crises that afflicted Lebanon, all of these had led to a significant amounts of aids to the Lebanese ministry of education and higher education in the last decade. Among these aids we can enlist as examples but not limited to:

Fund type	Budget	Agency	Project	Project purpose
Grant	US\$75 Million	USAID	Developing rehabilitation assistance to schools and teacher improvement (D-RASATI)	• Rehabilitation and equipping of science and informatics laboratories. • Capacity development of teachers. • Development of extra-curricular activities. • Stimulating the participation of parents in schools.
Loan	US\$40 Million	The World Bank	Education development project II	• Equipping of KGs • Developing the administrative capacity of the cadres of MEHE • Developing the administrative capacity of principals
Loan	Euro 13.7 Million	The European Union	Education development project	• Strengthening the management of Public finances. • Improving the planning, • Implementation and Monitoring of the Education sector reforms. • Improve management, increase transparency, enact accountability

				Promoting awareness of students' Citizenship concepts.
Grant	US\$3M	UNESCO	Follow up and evaluation of public schools' performance	- Developing monitoring tools. - Developing the mechanism for measuring performance. - Identifying teacher's training needs
Grant	US\$0.66 M	UNICEF	Annual work plan for development of requirements of early childhood	- Parental awareness program. - Developing standards and specifications for textbooks and educational resources. - Producing support lessons for underachieving students. - Contributing to the "back to school" media campaign for the school year 2010-2011.
Grant	US\$2.4 M	The United Nations Development Program	Providing technical support to MEHE to implement the Education sector development plan	- Developing the development of institutional competencies. - Activating the education management information system to render it accessible to all units in the ministry. - Developing a system for monitoring and evaluation of the programs. - Providing tools and capacity building of staff.
Contribution	US\$100 Million	Lebanese State	Education sector development plan	Developing of the overall education sector.
Grant and loan	US\$224 M	Loan US\$1 00M Grant US\$1 24M	The World Bank and other donors(Multi Trust Fund to support Lebanon in facing the Syrian crisis) Support to Reaching All Children with Education (RACE)	Promote equitable access to education services, enhance quality of student learning, and strengthen the education systems in the Recipient's education sector in response to the protracted refugee crisis.

Figure 10 grants and aids

In fact, the budget contraction and the various crises afflicting Lebanon, the high share of salaries and wages in the budget of the Ministry of Education and Higher Education (average 77%) makes the margin of spending on operational costs and improving the educational sector

(around 23% only) relatively small, thus grants and foreign aids become the only outlet that MEHE relies on to make radical improvements to the education sector, mainly the restoration of schools, schools equipment, and even the financing of some extra-curricular activities.

It should be noted that although MEHE complies with the monitoring and evaluation standards imposed by different donors for the different foreign aid and grants, donors have intensified their requests to MEHE in the last decade about the urgent need to know the cost of public education in Lebanon. For this purpose, the rationale behind a unified, transparent and automated financial system guiding the national strategy of education and advising donors where to invest in the Lebanese education sector becomes a high necessity.

PUBLIC FINANCE MANAGEMENT SYSTEM (PFMS) RATIONALE AT MEHE

A public finance management system becomes a high priority for MEHE as an essential tool to guide its strategic planning. This system will represent a quantum leap in the financial management for public K-12 education. GDE can use it to move from the stage of strategic planning to financial planning.

With this regard, MEHE with the support of international donors has made great efforts during the past three years to develop this system. Local experts designed and developed the PFM system, the various accounts relevant to costs of public K-12 education have been encoded and aligned with the structure and accounts of the state budget. When fully automated and applied, this would permit decision makers whether at MEHE or at the Ministry of Finance to obtain and retrieve any information and indicators they want for planning as well as for monitoring, evaluation and follow-up.

In fact, the work of MEHE on this system has reached advanced stages. Currently, experts are working to automate the newly developed PFM in the SIMS used by MEHE. In the same time, a technical committee has been formed and started reviewing the laws and regulations to support setting in place this PFM.

This PFM system is expected to secure: (1) A reliable fiscal policy and sustainable fiscal discipline; (2) Allocations of resources based on priorities; (3) Estimation of financial needs; (4) Unification of financial data and reporting; & (5) Control over planning and budgeting processes.

This system identifies the cost centre for each directorate and unit, with administrative, economic and geographical classifications that allow determining the student's cost at the level of administration, mohafaza and caza. This system, if applied with careful transparency and control allows for rationalization of spending and controlling any waste in public money.

The screenshot below shows a snapshot of this system:

Figure 11 Snapshot of the Public Finance Management System

SPENDING ON EDUCATION AND EDUCATIONAL PRODUCT

Spending on education is related to the nature of the educational product that we will obtain in return for this spending. The definition of the educational product determines the measurement indicators of the educational process as well as the method of calculating the cost of education. In this line, we enlist the following concepts for the educational product:

Concept 1: Everyone enrolled in a school is an educational product

In a study conducted in 2007, Pierre Gravot uses two indicators to measure the educational products:

A. Registered students.

B. Certified students (students who were enrolled at schools and graduated with a certificates/diplomas).

While the first indicator measures the volume of the educational activity, the second indicates the added value in response to this activity.³⁴

Concept 2: the graduate and the certificate holder is the educational product

In 2012, Al Hajj M. defined the educational product as "The school's ability to graduate students in quantity and quality with the least effort, money and time". This can be measured by calculating the return on the expenses invested in this school and the relation between educational inputs and outputs.

This means that the student who successfully completes the school years and obtains a certificate/diploma at the end of the educational path is considered the educational product. From an economic angle, the total number of the graduates constitute the final product, which is considered an educational product that is used to meet the labours' demand.

³⁴ Pierre GRAVOT, 2007, « productivité éducative », E-Thème n°6, sous-module de base « notions fondamentales de l'économie de l'éducation », unite d'enseignement « économie de l'éducation –2e», p. 3

Concept 3: the level of additional knowledge through the education process acquired is the educational product

The educational curriculum is a critical component of the educational and pedagogical process in educational systems. It determines the level of knowledge developed in each year of education. The curriculum includes educational competences, guidelines and principles that frame the educational practice. Matching the student's academic achievement with the educational goals set in the curriculum is the primary goal of the school. Therefore, the educational product can be defined as the knowledge acquired by the student as a result of education of children who enter or enrol in school and continue studying in a specific educational path. We obtain the added educational value by testing the knowledge of students upon joining the school and measuring this knowledge level upon graduation. The methods of measuring this knowledge differ from one country to another, from school to another and from level to another. Also, methods used to measure this knowledge i.e. assessment methods are different between countries and between schools.

Concept 4: Annexed services

The school produces various services, some of which are directly related to the educational process, others are parallel services called annexed services. Educational services are characterized by a direct pedagogical and educational nature. Most of them produced and presented in the classroom through direct teaching processes. In addition to these services - in and outside the school - a variety of services are provided to students such as: Entertainment services (lounge, games....), Cultural and sports services, Social services, Health Services, Information and guidance services, and School Support Services.

It should be noted that "school support becomes an integral part of the educational programs and curricula in any educational institution."(Chatwani, H., 2015)

Each of the definitions enlisted above has implications on the total education expenditures and consequently on the calculation of the public spending on K-12 education. For example the adoption of the first definition i.e. school enrolment criterion as an educational product, is reflected in the size of the education budget, whether public or household budgeting. The greater the number of learners in a society, the more it requires the state to open more schools to absorb the number of learners, therefore more budget is needed to meet the objective set. Currently, most of the governments set their goals as to obtain 100% schooling enrolment rate. In fact, this goal cannot be achieved without raising the level of the education budget, whether at the level of state or household, which raises the overall expenditures for education.

As for the "correlation of cost with the number of graduates", the smaller the number of graduates, the higher the cost and vice versa. If we assume that the assessment system used is feasible and transparent, the increase in the number of graduates indicates the success of the educational system, which results in a high internal rate of return (IRR) of education. Concretely, it should be noted here that literally it is difficult to calculate this return mathematically but that can be measured theoretically by considering the number of graduates joining the labour market.

This can be said only if the total education expenditures are constant so that the number of graduates increases with a decrease in the cost, but if the increase in the number of graduates

is accompanied by an increase in the size of the education budget, this will lead to an increase in the cost. The principle of rationality requires that the ministries and schools should work to rationalize the use of financial resources in a way that leads to achieving best results at the lowest costs. In reality, we do not have to forget that the assessment systems and techniques do not always reflect the real gain of students' knowledge, the spread of the phenomenon of cheating and lowering the passing grades are all elements that make an important percentage of students may reach the end of the educational path and obtain a certificate without really reaching the level of knowledge formally placed in the targeted curriculum. If we take this into account, the cost is high with poor quality. The cost with a decrease in the quality of learning is a real high cost.

Therefore, the school must manage the cost of the educational process to ensure that all learners receive the least knowledge required. From an economic perspective, the school should enable the largest number of students who have joined the school to graduate and obtain certificates testifying the level of knowledge targeted in the curriculum set.

The link of cost to the additional knowledge level acquired determines what the learner acquires as a result of the educational process.

The ministries of education conduct researches to set educational curricula in which they define the knowledge and competences to help developing learners' skills in a balanced and sound manner in all of their personal aspects of life. (Dreij, M, 2012)

In reality, measuring the knowledge level in a real and accurate manner is problematic and expensive as the ministries cannot concretely organize tests to assess the educational gains in an accurate way through which it can scientifically estimate the additional knowledge level gained, because the cost in this case becomes very high. Therefore, the cost will be high if the final educational goal is to measure the number of graduate students who have acquired the desired level of knowledge from the curriculum. Having said so, special attention should be given to evaluating the cognitive acquisitions of students in order to be able to develop them to meet the purpose of reaching the desired level of knowledge.

Finally, the cost relationship with the annexed school services vary from one country to another. In some countries, transportation services, restaurant services, etc. are essential while they are not for other countries. Some countries consider the annexed services indispensable for the educational process. The more these services are required the high is the cost of education and thus the total spending on education.

On the same line, the educational process becomes highly dependent on educational guidance services, educational support, mental health and social support... All these activities and services increase the total expenditure on education and thus raise the total spending. The different services should be reviewed carefully in a way based on the degree of importance in achieving the educational goals.

The correlation between spending on education and the educational product is actually tricky and complex. It depends on the context of each country, the educational system applied, and the types of assessments used and the concept of the educational product used by each country.

In Lebanon, we can say that MEHE until now uses the school enrolment rate as educational product to calculate the total public spending of K-12 education regardless whether the enrolled students obtain a certificate or not at the end of each educational track. Other concepts remain neglected in determining the total cost of education in Lebanon.

In conclusion, the total cost or average cost of education cannot be calculated if the most important element in the process, which is the educational product, is not determined earlier. The agreement what educational product concept to use, guarantees a common ground for the ministries and different educational actors to improve educational production at the lowest costs possible.

IMPLICATIONS OF SPENDING ON EDUCATION ON TEACHING AND LEARNING

Examining the relationship between overall spending and outcomes is a difficult exercise. However, most of the researches investigating this topic found that there is a positive relationship between per-pupil spending and student's outcomes. In reality, Lebanon is underperforming in both PISA and TIMSS.

But where Lebanon Stands in PISA³⁵?

Compared to the OECD countries average in Reading, Mathematics and Sciences, The diagrams on the right addresses clearly the underachievement of Lebanon in reading, mathematics, and sciences.

Lebanon participated twice in the PISA assessments that were conducted in the years 2015 and 2018. In both times, Lebanon did not make any improvement as the mean scores of Lebanese students between the year 2015 and 2018 looked the same.

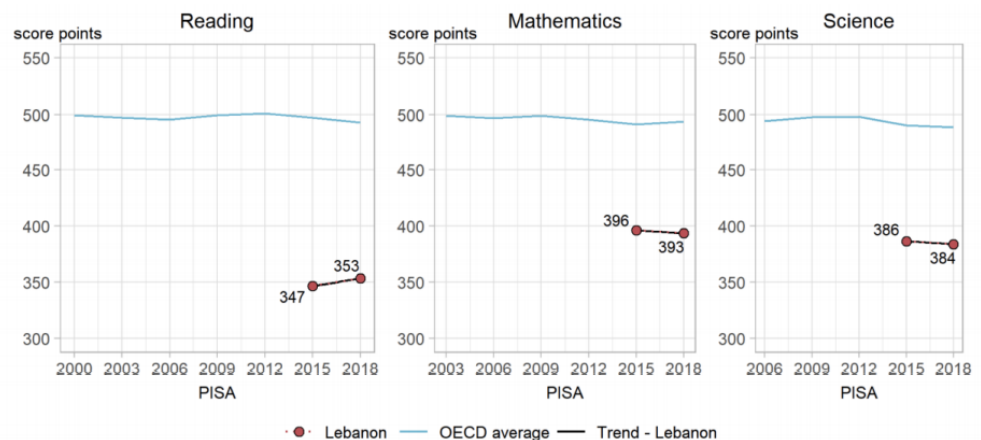


Figure 12 PISA scores, 2018

As per OECD, Lebanon falls at the bottom of the scale of PISA just before Morocco.³⁶

³⁵ Program for International Student Assessment

³⁶ PISA 2018 in the MENA region.

And where does it stand in TIMSS³⁷?

In mathematics, Lebanese students were scored 442 on average, which is 58 points below the TIMSS mean (500). Lebanon took the third place among Arab countries yet it is still lagging behind internationally. On the other side, in Sciences, Lebanon scored 398 which is 102 points below the mean and stood at the seventh place among the participating Arab countries.

In the TIMSS advanced, Lebanon selected students from the General Sciences section of grade 12.

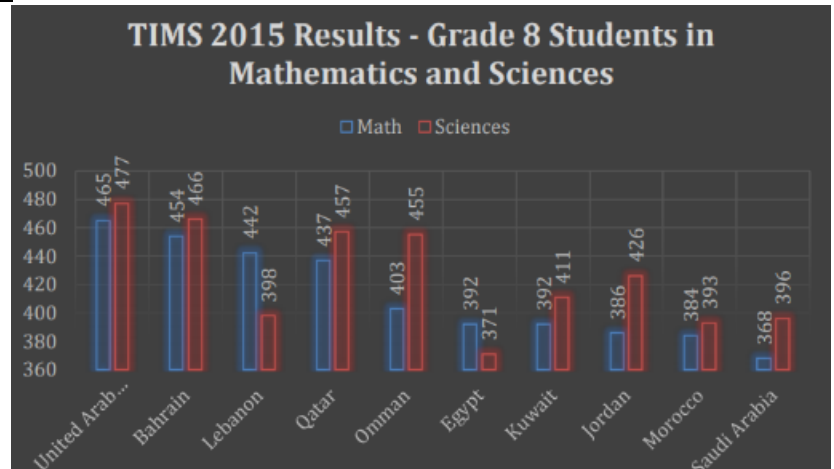


Figure 13 TIMSS results, 2015

In the mathematics test Lebanese students scored on average 532 which is above the TIMS mean score of 500 beating several advanced countries. It is important to note here that the students selected were from a pool of 3.9 % of the total grade 12 students compared to a pool of around 25 % in the other countries. General sciences students in Lebanon are selected based on their scientific achievement in the 11th grade scientific class only. This selection explains the high achievement in the designated test.

Students of the same class had an average score of 410 which is 90 points below test's average. Lebanese students showed a high score difference between mathematics and sciences in the TIMSS advanced evaluation.

LIMITATIONS OF THE STUDY

The study investigated only the total spending on public K-12 education in Lebanon and did not address the private K-12 schooling cost due to the difficulties faced in obtaining data relevant to the cost of the private K-12 schools whether from MEHE or directly from private schools. The comparison between the spending of public and private K-12 education would have definitely enriched the paper. As described earlier, the paper is a desk review research based on budget laws numbers published and endorsed by the Lebanese ministry of Finance after the validation of the Lebanese parliament, these numbers did not take into consideration the grants afforded to the public education sector and incurred during the financial years 2019 and 2020 and these represent hidden costs for public K-12 sector in Lebanon. Also the sample size of students who participated in TIMSS and PISA would pose a generalizability question on the implications of spending in K-12 education in Lebanon. Last but not least, the study covered the government spending on K-12 education during the Covid-19 spread and this might be considered a limitation to the study as MEHE was operating under very specific circumstances.

³⁷ Trends in International Mathematics and Science Study

CONCLUSIONS AND RECOMMENDATIONS

Calculating the cost of education in Lebanon remains one of the most problematic question imposed to education executives in Lebanon. In fact, it is very difficult for the time being to reach more than average figures pertaining to public spending on K-12 education before setting in place a fully well structured, inclusive and automated public finance system on which MEHE should rely. This should go in parallel with developing relevant effective policies and laws.

Nevertheless, we can enlist below some recommendations that would help in rationalizing the government spending on public K-12 sector in Lebanon:

- Implement an automated smart public financial management system at MEHE that allows determining the cost of education and investment priorities in the sector.
- Clean the data of School Information Management System (SIMS) information base, support its full implementation, and extract the necessary indicators that advise decision makers to financially plan and rationalize spending according to needs priorities.
- Make full use of the unique national student ID in public and private education to track the movement of students between classes, levels, and schools to avoid duplications in numbers and costs.
- Cancel or reengineer the public school rents and collect schools in education complexes affiliated to different REOs. This would decrease the financial burden on MEHE budget and consequently on state budget.
- Employ the contractual as civil servant based on specific examinations reflecting the needs in the sector.
- Stop teachers transfer from one school to another and from one education region to another -- except in cases of extreme necessity -- to decrease shortages in some public schools at the expense of others..
- Adopt and implement budgets based on needs at the level of schools, educational regions and various directorates, departments and units.
- Strengthen Private Public Partnerships between public schools and civil society and between private and public schools.
- Develop an automated procurement system that allows planning and tracking ahead of time any schooling purchases and supplies based on needs and according to the public procurement code used by the Lebanese government.
- Set internal and external audits units at MEHE. This would rationalize public spending and enhance accountability and responsibility.
- Establish, on the long term, a sovereign fund to finance the education in Lebanon. This will be nourished by the Lebanese government and all overseas funds that aim to support the education sector based on a national strategy with clear goals and objectives assuring consistency with global trends in education.

In conclusion, when it comes to spending on education, it is not just how much we spend but how do we spend it!

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