



The Economic & Social Cost of Illiteracy

A snapshot of illiteracy in a global context

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**Final report from the World
Literacy Foundation**

Table of Contents

1. Executive Summary.....	4
2. Introduction	4
3. Discussion.....	4
3.1 Definition of illiteracy	4
3.2 Cost of illiteracy in economic terms.....	5
<u>3.2.1 Lost earnings and limited employability</u>	5
<u>3.2.2 Lost business productivity</u>	5
<u>3.2.3 Lost wealth creation opportunities for individuals and business</u>	5
<u>3.2.3 Lower technology skills capacity in future</u>	6
3.3 Cost of illiteracy in social terms	6
<u>3.3.1 Health</u>	6
<u>3.3.2 Crime</u>	7
<u>3.3.3 Welfare</u>	7
<u>3.3.4 Education and the role of the family</u>	7
4. Cost tables.....	8
Table 4a: Cost of illiteracy in developed nations	8
Table 4b: Cost of illiteracy in emerging countries.....	10
Table 4c: Cost of illiteracy in developing countries.....	11
4.1 The battle of illiterates in developed and developing nations.....	12
4.2 Snapshot: Cost of illiteracy to a developed nation: UK.....	12
4.3 Literacy and poverty	13
4.4 Current global initiatives to overcome illiteracy	13
<u>4.4.1 The Education for All goals</u>	13
<u>4.4.2 The Millennium Development Goals</u>	14
<u>4.4.3 What happens in 2015?</u>	14
5. Recommendations.....	15
5.1 Establishing adult and parental literacy programs	15

5.2 Students in schools: attendance and retention strategy	15
5.3 Resources, training and technology	16
5.4 Paying for it all	16
6. Conclusion	16
7. Bibliography.....	16

1. Executive Summary

Over the years, there have been many attempts to place an economic value on the cost of illiteracy in various nations. There are disputes about the methodologies used to calculate such figures. But the fact remains that it costs the global economy more than USD \$1 trillion dollars each year because up to one in five people worldwide struggle with illiteracyⁱ.

Functional illiteracy means a person may be able to read and write simple words, but cannot apply these skills to tasks such as reading a medicine label, balancing a chequebook, or filling out a job applicationⁱⁱ.

Globally, more than 796 million people in the world cannot read and writeⁱⁱⁱ. About 67 million children do not have access to primary school education and another 72 million miss out on secondary school education^{iv v}.

The findings of this final report include:

- The cost of illiteracy to the global economy is estimated at USD \$1.2 trillion.
- The effects of illiteracy are very similar in developing and developed countries. This includes illiterates trapped in a cycle of poverty with limited opportunities for employment or income generation and higher chances of poor health, turning to crime and dependence on social welfare or charity (if available).

2. Introduction

The purpose of this interim report is to highlight the economic and social cost of illiteracy to the global economy. It will discuss the causes and issues surrounding illiteracy, the direct link between poverty and illiteracy and how tackling literacy has a very real and measurable impact on the growth of an economy.

3. Discussion

3.1 Definition of illiteracy

Complete illiteracy means a person cannot read or write at all. Of equal relevance is the concept of functional illiteracy, which means an individual may have basic reading, writing and numerical skills but cannot apply them to accomplish tasks that are necessary to make informed choices and participate fully in every day life. Such tasks may include:

- Reading a medicine label
- Reading a nutritional label on a food product
- Balancing a chequebook
- Filling out a job application
- Reading and responding to correspondence in the workplace
- Filling out a home loan application
- Reading a bank statement
- Comparing the cost of two items to work out which one offers the best value
- Working out the correct change at a supermarket.

Poor literacy also limits a person's ability to engage in activities that require either critical thinking or a solid base of literacy and numeracy skills. Such activities may include:

- Understanding government policies and voting in elections
- Using a computer to do banking or interact with government agencies
- Calculating the cost and potential return of a financial investment
- Using a computer or smartphone to look up and access up-to-date news and information; communicate with others via email or social networking sites; or shop online, read product reviews and user feedback, and get the best prices for goods and services
- Completing a higher education degree or training
- Analysing sophisticated media and advertising messages, particularly for get-rich-quick scams
- Assisting children with homework.

UNESCO defines functional illiteracy as “measured by assessing reading, writing and mathematical skills in the various domains of social life which influence individual identity and insertion into society. From this perspective, literacy involves not only reading and writing but also the acquisition of the skills necessary for effective and productive performance within society”^{vi}.

As discussion unfolds in the following sections, it is important to note these effects and costs of illiteracy apply equally in both developed and developing nations.

3.2 Cost of illiteracy in economic terms

3.2.1 Lost earnings and limited employability

Around the world, the impact of illiteracy on personal income varies but it is clear earning potential is limited. Illiterate people earn 30%-42% less than their literate counterparts and do not have the literacy skills required to undertake further vocational education or training to improve their earning capacity^{vii viii}.

One study shows the income of a person with poor literacy stays about the same throughout their working life. However, individuals with good literacy and numeracy skills can expect their incomes to increase at least two to three times what they were earning at the beginning of their careers. And young people who do not complete primary schooling are less likely to obtain jobs good enough to avoid poverty^{ix}.

3.2.2 Lost business productivity

The cost to business in lost productivity and profitability due to poor literacy and numeracy includes^x:

- The cost of fixing incorrect orders or processing refunds
- Customers lost due to poor communication
- Difficulty and cost of finding adequately skilled staff
- Resolving internal problems and issues arising from miscommunication or misunderstandings.

One survey of employees found that about 70% of respondents said their organisation had made noticeable cost savings through language and literacy training. Benefits of the training included:

- Direct cost savings
- Access to further training
- Improved participation in teams and meetings
- Promotion opportunities and job flexibility
- Higher morale.

3.2.3 Lost wealth creation opportunities for individuals and business

The opportunity cost of lost wealth creation for individuals is very real. Typically, a family in a developed country will purchase a home using a mortgage and work many years to pay off the house. Many such “home owners” do not understand the bank loans they take out although they sign legally-binding documents to get them^{xi}. They are not capable of establishing a personal financial plan or evaluating financial investments to provide themselves with a retirement income (this also increases the welfare burden on the government in the form of age pensions). They do not understand how to use equity or investment loans to acquire and manage income-producing assets.

Even those who do have good general literacy and numeracy skills are filled with terror at the prospect of securing their own financial wellbeing. Although this is a significant barrier to overcome, financial literacy cannot be accomplished without good basic literacy and numeracy skills.

There is also a cost to businesses which employ people who have poor financial management skills. This includes the cost of employee time wasted on money problems, lower absenteeism due to stress or needing to deal with financial issues, processing advances on paycheques for “emergencies”, lower level of workplace violence and thefts^{xii}.

For businesses, poor literacy and numeracy skills make it harder for business owners and entrepreneurs to understand and apply business finance concepts such as management and allocation of capital to increase shareholder value^{xiii}. This is very different from ensuring that income exceeds expenses. The difference is often what separates big business from small.

3.2.3 Lower technology skills capacity in future

The definition of literacy has traditionally been limited to the ability to read, write and sum numbers. In particular, the definition of reading has meant perusal and analysis of printed texts such as books and newspapers.

Employees in today’s workforce are expected to create, edit and read numerous documents on a computer^{xiv}. The more literate an individual, the more likely they are to be in a job role that requires the use of a computer. Yet most school curricula do not integrate technology literacy into a broader definition of literacy. This is despite the fact that many young people today experience literacy outside of school almost entirely on computer screens.

Young people most frequently read technology-based materials, with nearly two-thirds of children and young people reading websites every week, and half of children and young people reading emails and blogs/ networking websites every week^{xv}. But often this is not counted as reading.

UNESCO indicates that education improves understanding of new technologies and facilitates their diffusion and implementation – factors which also promote economic growth^{xvi}. But if the literacy being taught in schools does not include technology-based texts, there is little incentive for young people to master literacy skills which they feel are irrelevant to them.

Without solid literacy and numeracy skills, technological literacy is hard to achieve. Those people who have strong basic literacy and numeracy skills combined with advanced functional literacy are valuable human capital to their nations and the global economy. Without such expertise, it is impossible to compete effectively in the global marketplace.

3.3 Cost of illiteracy in social terms

3.3.1 Health

Illiteracy significantly limits a person's ability to access, understand and apply health-related information and messages. This results in poor household and personal health, hygiene and nutrition.

Illiterate people, particularly mothers, are more likely to adopt poor nutritional and hygiene practices in their homes. This leads to a higher rate of disease, accidents and other health issues, which in turn raises demand for medical services and causes job absenteeism (due to illness on the part of either the parent or the children). If unchecked, these health issues can lead to permanent disability or death. In developing countries, a child born to a mother who can read is 50 percent more likely to survive past age five^{xvii}.

Literate people demonstrate better hygiene practices, have better access to preventive health measures (such as vaccination and medical check-ups) and can acquire better nutritional knowledge to feed their families.

Illiteracy also increases the likelihood of high-risk sexual behaviour, due to lack of awareness about sexual and reproductive health and inadequate or no use of contraception. One study showed literate women are three times more likely than illiterate ones to know that a person in seemingly good health can be infected with HIV.

Unawareness of contraceptive methods increases the likelihood of unplanned and adolescent pregnancy. In turn, young new mothers are more unlikely to undertake further education or enter the workforce.

Employees with poor literacy are more likely to have work-related accidents because they cannot read or understand written health and safety regulations and warnings or instructions on how to safely operate machinery. This puts both themselves and their co-workers at risk, increases the need and cost of medical services, and leads to higher absenteeism and damage long-term productivity^{xviii}.

3.3.2 Crime

The link between illiteracy and crime is clear. In various countries around the world, studies show that a majority of prison inmates have poor literacy skills. Also, amongst juvenile delinquents, up to 85% are functionally illiterate^{xix}.

In various nations, estimates show that 60-80% of prisoners have reading and writing skills below basic levels. Those who are still illiterate upon release have a high probability of re-offending^{xx}. This is a high cost to the economy in terms of maintaining prisons, administrating the courts and running the justice system.

3.3.3 Welfare

Illiterate people are more likely to be on welfare or unemployment benefits having dropped out of school or being unable to find work^{xxi}. High school dropouts are more than three times as likely to receive welfare than high school graduates^{xxii}. Low income earning potential (discussed earlier) due to illiteracy also makes a higher number of welfare dependants^{xxiii}. This puts a heavy burden on the social security system of any nation.

The good news is that adult literacy programs, especially those that includes job searching skills and a focus on finding employment, can be successful in reducing or eliminating dependence on welfare recipient^{xxiv}.

3.3.4 Education and the role of the family

Illiterate parents tend to have lower expectations and aspirations regarding education for themselves and their children. Poor families often place work before education and the children of parents who have failed to complete primary education tend to do the same. In developing countries, school age children (especially girls) are expected to help with income-producing activities or caring for younger siblings so they are unable to attend school.

When parents are uninvolved in their children’s education, young students are more likely to display behavioural problems, get poor school results, have a high absentee rate, repeat school years or drop out of school^{xxv}.

Illiterate parents cannot read to their children, nor encourage a love of learning. When illiterate adults improve their literacy skills, this has a flow-on effect to their children. With these new skills they can help a child with homework, read notes and correspondence sent home from school, understand the school system their children engage in, and guide and encourage them^{xxvi}.

Children from the poorest homes are almost a year behind their middle class counterparts by the time they start school. And children with parents who hold professional jobs had heard more than 33 million words by the time they began school compared with 10 million words for children from more disadvantaged groups. This had a significant impact on vocabulary growth and standardised test scores during a child’s early years^{xxvii}.

4. Cost tables

OECD countries, on average, spend around 4.6% of their GDP on educational institutions at primary, secondary and tertiary levels (note that in some countries, additional education spending occurs in the private sector)^{xxviii}.

However, there is little data showing the cost of illiteracy globally. The World Literacy Foundation has compiled the tables below to estimate the cost of illiteracy worldwide.

This report assumes that illiteracy costs a developed nation 2% of its GDP, an emerging economy 1.2% of GDP, and a developing country 0.5% of GDP. These estimates reflect a lower level of spending on social services such as welfare, health and the justice system in less developed countries. (All GDP figures are 2015 estimates set at current prices in USD and are sourced from the International Monetary Fund^{xl})

In total, the estimated cost of illiteracy to the global economy is estimated at \$1.2 trillion (USD). (Note the actual total figure will be higher as these tables include only the major economies of the world’s developed, emerging and developing nations.)

Table 4a: Cost of illiteracy in developed nations

Country	GDP (US\$ billions current prices)	Cost of illiteracy (US\$ billions)
Australia	1,252.27	25.05
Austria	380.555	7.61
Belgium	463.799	9.28

Canada	1,615.47	32.31
Czech Republic	180.789	3.62
Denmark	297.359	5.95
Estonia	23.113	0.46
Finland	235.276	4.71
France	2,469.53	49.39
Germany	3,413.48	68.27
Greece	207.148	4.14
Hong Kong	310.074	6.20
Hungary	126.691	2.53
Iceland	17.807	0.36
Ireland	220.011	4.40
Israel	306.873	6.14
Italy	1,842.84	36.86
Japan	4,210.36	84.21
Luxembourg	54.94	1.10
Netherlands	749.365	14.99
New Zealand	191.73	3.83
Norway	420.958	8.42
Poland	491.239	9.82
Portugal	201.036	4.02
Singapore	296.057	5.92
Slovak Republic	87.528	1.75
Slovenia	43.021	0.86
South Korea	1,435.08	28.70
Spain	1,230.21	24.60
Sweden	487.396	9.75

Switzerland	688.434	13.77
United Kingdom	2,853.36	57.07
United States	18,124.73	362.49
Total	44,928.53	898.57

Table 4b: Cost of illiteracy in emerging countries

Country	GDP (US\$ billions current prices)	Cost of illiteracy (US\$ billions)
Argentina	563.138	6.757656
Brazil	1,903.93	22.847208
Chile	250.472	3.005664
China	11,211.93	134.543136
Colombia	332.384	3.988608
Egypt	286.435	3.43722
India	2,308.02	27.696216
Indonesia	895.677	10.748124
Iran	393.495	4.72194
Lebanon	54.671	0.656052
Malaysia	327.89	3.93468
Mexico	1,231.98	14.783784
Morocco	102.044	1.224528
Nigeria	515.431	6.185172
Pakistan	250.136	3.001632
Peru	190.268	2.283216
Philippines	308.033	3.696396
Russia	1,176.00	14.111952
South Africa	323.809	3.885708

Thailand	386.291	4.635492
Taiwan	527.773	6.333276
Turkey	752.51	9.03012
Vietnam	204.493	2.453916
Total	24496.808	293.961696

Table 4c: Cost of illiteracy in developing countries

Country	GDP (US\$ billions current prices)	Cost of illiteracy (US\$ billions)
Afghanistan	21.526	0.10763
Angola	106.149	0.530745
Bangladesh	205.327	1.026635
Burkina Faso	11.323	0.056615
Cambodia	17.814	0.08907
Chad	12.016	0.06008
Eritrea	4.253	0.021265
Ethiopia	57.557	0.287785
Gambia	0.781	0.003905
Guinea-Bissau	0.982	0.00491
Haiti	9.152	0.04576
Laos	12.764	0.06382
Liberia	2.056	0.01028
Mozambique	16.921	0.084605
Myanmar	69.143	0.345715
Nepal	21.688	0.10844
Niger	7.27	0.03635
Rwanda	8.763	0.043815

Sudan	76.204	0.38102
Uganda	26.814	0.13407
Tanzania	49.966	0.24983
Total	738.469	3.692345

4.1 The battle of illiterates in developed and developing nations

Although the effects of illiteracy (as discussed above) are the same in developed and developing countries, the stories of illiterates are somewhat different. We will take a look at them below.

In developed countries, it's the story of a person who cannot function in a highly technological society where living and working day to day requires being able to read and sum. You probably made it to high school but dropped out early. Maybe you were a slow learner. Maybe you had problems at home. Or maybe you just couldn't see the point of school – especially if your parents didn't see the point of it either. After leaving school, you make a huge effort to hide the fact that you cannot read. But soon the effects of poor literacy come home to you in the real world.

Imagine coming home with the wrong food items because you can't understand the labels. Or not being able to read the newspaper. Or not being able to travel far because road signs are gobbledygook to you. Or not realising you've agreed to a hysterectomy because you can't read the medical form you just signed^{xxxix}. Or being demoted at work when your employer realises you are illiterate^{xxx}.

In developing countries, it's the story of a person who has to live amongst the poorest of the poor, often in very remote places. You're a mother and want your children to have a better life. You want them to be educated. But your husband says they should help with farming or take care of younger siblings so you're free to help eke out a meagre income.

Even if you win agreement to send them to school, the nearest one is hours away, on foot, through inhospitable terrain. Depending on which country you live in, it could be miles of steep mountains, desert scrub or rivers that often flood, cutting off access. If they get there, a willing but untrained teacher has to manage a class of at least 50 children of varying ages. The school building (if there is one) is in poor repair and exposed to the elements. There are few textbooks and other resources. And if you're in a country with more than one national language, guess which one is used in class? Alas, the one your children don't speak.

4.2 Snapshot: Cost of illiteracy to a developed nation: UK

The Leitch report indicated that if the UK is to compete effectively in the global economy, it would need to invest heavily to improve its basic skills base. This includes a direct challenge to address the fact that 20% of the UK adult population is functionally illiterate. The number of UK adults who are functionally illiterate is estimated at 6 to 8 million^{xxxix}.

The report said 95% of the population must be functionally literate by 2020 to bring the UK in line with the upper quartile of OECD countries. This is certainly a challenge given that 70% of people who will be in the workforce in 2020 have already left school^{xxxix}. And although there are programs in place to skill up existing workers, the big gap is how to improve the literacy of people who are not in the workforce.

The cost of illiteracy to the UK economy can be broken down as follows:

- An estimated total of £81.312 billion is lost to the UK economy each year.
- Individuals and businesses lose a total of about £58 billion through lower personal income or business earnings due to poor literacy (and this does not include the opportunity cost of possible wealth creation closed to people with poor literacy and numeracy skills)
- It costs UK taxpayers an estimated £23.312 billion that is spent on benefits and social programs. A high proportion of recipients of unemployment benefits and prisoners struggle with reading and writing. Illiterate people make poorer health choices because they struggle to access, read and understand information related to their health thus placing a higher burden on the health system.

In the UK, people with poor literacy have the lowest levels of employment and are more likely to be in manual jobs. Also, improved literacy rates show that (all data from the National Literacy Trust^{xxxiii}):

- The likelihood of employment and higher wages increases
- The likelihood of a person using a computer at work (an indicator of a job role requiring more professional skills) rises from 48% to 65%
- The likelihood of a man owning a home (an indicator of earning capacity) increases from 40% to 78%.

4.3 Literacy and poverty

Improving literacy skills is a key first step in overcoming the obstacles that lock individuals into a cycle of poverty and disadvantage^{xxxiv}.

Education has been cited as the best means of overcoming poverty caused by illiteracy^{xxxv}. This needs a two-pronged approach – encouraging families to place a higher value on education and getting illiterate adults into literacy programs.^{xxxvi} In particular, encouraging the completion of higher levels of education and in turn a higher level of literacy is crucial in ensuring the next generation do not inherit their parents' illiteracy.

It is estimated today that for every single year that the average level of education of the adult population is raised, there is a corresponding increase of 3.7% in long-term economic growth and a 6% increase in per capita income^{xxxvii}.

In relation to children's literacy, improving even the most basic educational outcomes can help. For example, if all children in low-income countries left school knowing how to read then 171 million people could move out of poverty^{xxxviii}.

4.4 Current global initiatives to overcome illiteracy

Although the global community is falling short of various well-publicised targets to improve literacy (as outlined below), some progress has been made.

4.4.1 The Education for All goals

In 2000, EFA set the following six goals:

1. To expand and improve comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children.
2. To ensure that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to complete, free and compulsory primary education of good quality.
3. To ensure that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programmes.
4. To achieve a 50% improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for adults.
5. To eliminate gender disparities in primary and secondary education by 2005, and achieve gender equality in education by 2015, with a focus on ensuring girls' full and equal access to good quality basic education.
6. To improve all aspects of the quality of education and ensure excellence so that recognised and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.

Collectively, various governments, the United Nations, non-profit organisations, private entities and donors have made inroads into improving levels of literacy around the world. The EFA Fast Track Initiative contributed resources for universal primary education. The United Nations Literacy Decade (2003-2012) provided support with worldwide advocacy and awareness-raising. The Literacy Initiative for Empowerment developed a global framework to support countries with the greatest literacy needs^{xxxix}.

4.4.2 The Millennium Development Goals

Two of the Millennium Development Goals set in 2000 specifically relate to literacy:

Target 2A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling^{xl}.

Target 3A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015^{xli}.

4.4.3 What happens in 2020?

The World Literacy Foundation supports and commends all efforts to address the worldwide crisis of illiteracy. However, it is plain that the ambitious and commendable targets set in 2000 will not be met without drastic intervention. Gordon Brown said the following in his 2011 review^{xlii}:

“We are now less than five years from the target date – and one primary school generation from a broken promise. There are currently 67 million primary school age children and an even greater number of adolescents who are not in school. Millions more are sitting in classrooms receiving an education of such abysmal quality that it will do little to enhance their life chances.

“If we carry on as we are, the international development target on education will be missed by a wide margin. While the number of children not enrolled in school is falling, numbers are coming down far too slowly – and there is worrying evidence that the rate of progress is slipping. UNESCO has warned that on recent trends there could be more children out of school in 2015 than there are today. Getting all of Africa’s children into lower secondary school is an even more

distant prospect than universal primary education. Under a business-as-usual scenario, it would take another 75 years, pushing back the date for achieving universal basic education towards the last decade of the 21st century.

“Changing this picture will require action at many levels. The poorest countries need another 1.8 million teachers by 2015 – 1 million of them in Africa. And because no education system is better than the quality of the teaching it provides, it is essential that teachers are properly trained, well motivated and equipped to ensure that children learn. Other aspects of the education infrastructure also have to be strengthened. The poorest countries need almost 4 million new classrooms by 2015, along with the textbooks, exercise books and other teaching materials needed to facilitate good quality education.”

5. Recommendations

While the goal is to compile a comprehensive action plan to combat illiteracy, the World Literacy Foundation makes the recommendations outlined below as a starting point to deal with the issue.

Each recommendation needs to be adapted to individual country contexts. For example: an adult literacy program for the lower class poor in the US or UK will look very different to an adult literacy program for a man or woman living in a rural African or Asian village.

5.1 Establishing adult and parental literacy programs

This requires a five-pronged approach that is strongly linked to outcomes and benefits:

1. Developing adult literacy programs tied to job or income generation opportunities and the completion of relevant daily tasks.
2. Developing adult literacy programs that help parents improve their own reading and writing skills and show them how to encourage their own children to enjoy literacy.
3. Running awareness and advocacy campaigns to overcome negative attitudes associated with illiteracy eg. shame at being illiterate or low priority placed on education.

Adult literacy programs should focus not just on the mechanics of literacy but be highly relevant and practical to the learner.

5.2 Students in schools: attendance and retention strategy

The challenge of getting millions of children into school must be coupled with a strategy to ensure they stay in school and actually finish their education. Again, a combination of strategies must be used to overcome all the barriers to completing school.

1. Use incentives attractive to children and parents to overcome negative attitudes towards education. This could include incorporating a vocational component to schooling that would improve household income prospects.
2. Overcome geographical barriers in (but not limited to) developing countries. This could include building more schools, providing transport options or a combination of correspondence schooling and travelling teachers.
3. Running advocacy and targeted programs to encourage gender parity in schools in developing and emerging countries. This includes developing ways to combat negative attitudes towards girls' education and release school age girls from expected home duties and caring for other family members.

4. Establish access and equity scholarships for high potential students who struggle to afford or attend school due to distance to help them finish school.

5.3 Resources, training and technology

Getting adults and children into literacy programs or school is the first step. The challenge then is to ensure they receive a high quality education. For this, textbooks, resources and access to technology is required. Then adequately trained and motivated teachers are needed to effectively deploy and make the best use out of such resources.

1. Developing training and mentoring programs for teachers to improve quality of schooling. This includes ongoing monitoring and professional development of teachers.
2. Ensuring schools and students are supplied with appropriate textbooks and resources in the right language.
3. Ensure literacy schooling and training includes access to and the ability to use and own computers. In today's technology-connected world, true literacy includes being able to use a word processor to read and write.
4. Develop tutoring, remedial and reading for fun programs for slow learners to help them keep up with their peers and overcome lack of engagement in reading.

5.4 Paying for it all

When one considers that illiteracy is costing the world economy over USD \$1 trillion dollars each year and that a 6% increase in per capita income could result from lifting the education level of the adult population by one year, it appears the global community is literally throwing money away. Inaction is costing us dearly.

1. Creating a central body that can accept and manage financial resources for international literacy initiatives. Such an entity would liaise with and act on behalf of governments, non-profit organisations, the private sector and the philanthropic community.
2. Getting governments to pledge additional funding to combat illiteracy within their own nations and to commit to supporting illiterates in developing countries.
3. Mounting a worldwide fundraising effort to raise awareness, empathy and donations from individual charitable giving to wipe out illiteracy.

6. Conclusion

In this report, an estimate trillions of dollars has been put on the cost of illiteracy. One can put figures on the social cost in terms of welfare payments or the burden on the health system. But the real opportunity cost will never be known. These are the costs of lost opportunities to create individual financial wealth, encourage entrepreneurs, build healthier and more stable families whose members can make a productive contribution to all areas of society (political and cultural as well as economic).

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