

The rise of education in Africa

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1. Introduction

How often do we stop to consider where the things we use every day come from? All our necessities and luxuries, from clothes and household utensils to mobile phones and computers, are the result of our advanced market economy. This introduction describes briefly how this economy came into being.

For most of the thousands of years of human history we were hunter-gatherers spread out across Africa, Europe, Asia and the Americas. In those days we were limited to what we could find or produce for ourselves. With the dawning of civilisation came the urge to produce something bigger. But to build a pyramid or a temple or a fort we had to combine the collective effort of hundreds or thousands of people. The only way we could make something big was to get a lot of people to do the work.

In those early days, if you wished to increase productivity you simply added more people. This is what farmers in many parts of the world did for hundreds of years. In the days of the Roman Empire, the Romans seized slaves from the countries they conquered and forced them to work on their farms. In colonial America, farmers in the southern states boosted productivity on their large sugar and cotton plantations by using slaves captured from various parts of Africa. (Many black Americans in the United States today are descendants of these slaves.)

But technology has changed our dependence on unskilled workers. Today we can construct large buildings by using machinery to increase our power. Imagine we want to build a present-day version of the Great Pyramid of Giza. We will employ small teams of workers, each with their own machinery. We will not need thousands of workers, the way the ancient Egyptians did. Instead we will use skilled workers, engineers who specialise in construction projects.

Engineers learn their skills through many years of formal education at school and then at college or university. They also learn through their work experience. Their education gives them what economists call 'human capital', which is their value in the form of skill, experience, character and creativity – all the things that make them productive workers. This human capital, combined with modern machines, which economists call 'physical capital', makes each individual worker

much more productive than the unskilled labourers that were used thousands of years ago. The lesson is clear: To grow richer, we need to increase education and skills.



The pyramids of Giza, in Egypt, required thousands of workers and took several decades to construct.

2. Specialization and positive externalities

Today, instead of using *more* workers to do things, we use *educated* workers. This is what creates the wealth of a society. Educated people use their knowledge and skills, gained through formal education or learning-by-doing, to specialise. Specialisation means being able to do one thing very well. Today's engineers who are responsible for large construction projects do not have to know how to grow their own food or make their own clothes. Unlike non-specialist workers of the past, they are paid well for their services. And with the money they earn they can afford the luxuries of our modern society: a wide variety of food, ready-made and attractive clothing, a mobile phone, a computer and a comfortable house with plenty of space for their family.

The advantages that specialisation brings are described in detail by the great economist Adam Smith in 1776 in his book *The Wealth of Nations*, the first modern work on economics. The more

we specialise, the more extra goods we can produce. When we produce a surplus of goods – in other words, more than we need for ourselves – we can sell them on the market and increase our income. If education is the key to deeper specialisation, then education is also the key to greater prosperity.

But education does not create specialists just so they can live a good life. It creates specialists so they can improve our world. An educated person can improve our existing physical capital. Take our pyramid example. Our engineers who plan to build the new pyramid need to cut large sandstone blocks. It would cost a lot to employ thousands of workers to cut them by hand. And the job would take too long. So our engineer, with the help of other specialists, designs a new machine to do the cutting automatically. By creating new technologies, educated people boost productivity and increase the wealth of their society.

An important point to understand here is that when we educate people, we do not just create specialists and improve productivity and wealth – we build *a better society*. An educated society is more likely to have a democratic voting system. It is more likely to have citizens who can make informed decisions about who should govern. It is more likely to respect the rule of law. It is more likely to have media freedom. Educated citizens can force governments to be responsive to their needs. They can make sure that the wealth that comes from economic growth benefits them and does not just end up in the pockets of government officials.

So the best way to create long-lasting prosperity for all the citizens of a country is to give them education. But in many African countries one half of the population, the women, get less education than the other half. It is more difficult for women to get an education than it is for the men. In these countries girls are often forced to stay and help at home. Sometimes cultural or religious beliefs about women prevent them from going to school. Physical difficulties may also keep them at home, such a long distance to walk to the school or a lack of toilets for girls at the school.

When women do not get an education, this is bad for the whole society. We can see why, when we look at some studies. These studies show that improving girls' education brings big improvements in their health and their future income. One study calculated that one extra year of education for a girl increases her lifetime income by 15%. Educated women usually marry later. They have fewer children, but their children are healthier than the children of uneducated mothers. The children of educated mothers get a better education. They have more freedom to choose a job. They have a better chance of equality with men in the job market. They have a better chance of building a professional career.

Economists call these additional benefits that education provides 'positive externalities'. A good government works to provide the people with these benefits. One important way a government

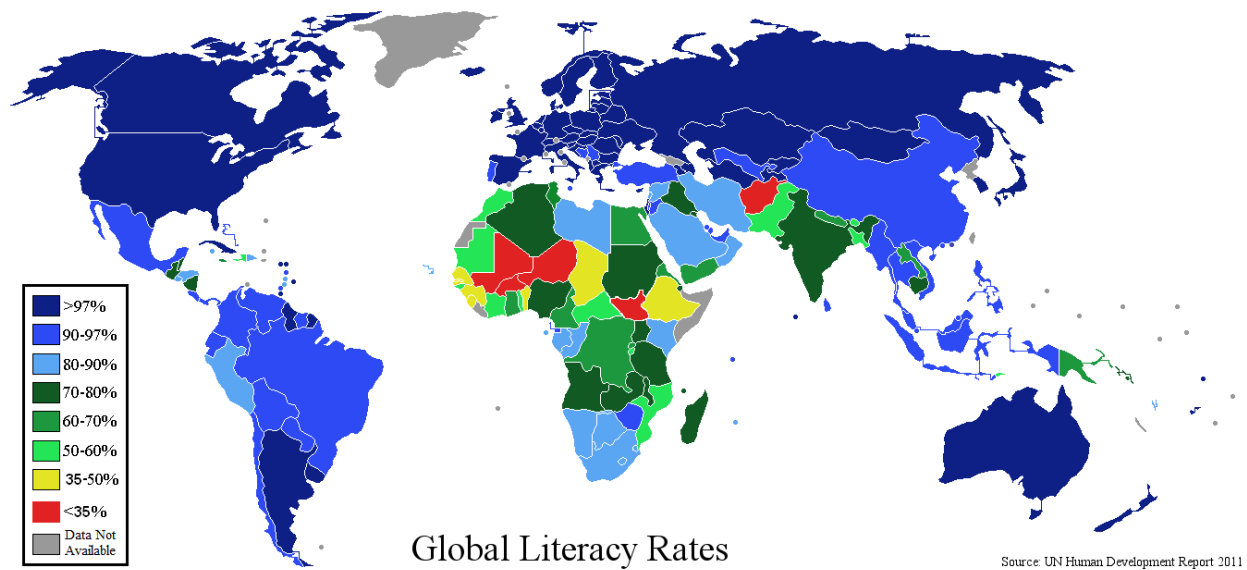
can promote positive externalities is to make education available to the people and show them why it is important, so they will want it.

In summary, education for all is the key to enjoying the rewards of an advanced market economy. Education for all is also the key to building a safe, free and equal society.

3. Education in Africa today

Many African countries have very low levels of education. Literacy – the ability to read – is often used as a measure of basic education. Some African countries score very badly on this measure. Only 31% of people can read in Mali, only 42% in Sierra Leone and only 56% in Côte d'Ivoire. In contrast, some other African countries have more literate populations. In Namibia 89% can read, in Zimbabwe 92% and in Equatorial Guinea 94%. The average for sub-Saharan Africa is 62%. This is much lower than the average for the world, which is 84%. Figure 1 shows Africa's low literacy rates compared to other regions in the world.

Figure 1: Global literacy rates by country



Source: United Nations Human Development Report 2011

There are big literacy differences between African countries. But there are also big differences *within* African countries. Literacy is not shared equally in these countries. The biggest differences are often across gender. To see how women's access to education in many African countries is restricted compared to men's, we can look at the World Development Indicators. These are figures collected by the World Bank every year to show different countries' levels of

development. For 2011 they show, for example, that 78% of Nigerian men are literate, but only 66% of Nigerian women. In Zambia the gap is even bigger, with 82% of the men being literate but only 67% of the women.

Of course, as an educated reader of this book you know that education is not only about literacy. Education, especially tertiary education, provides people with a variety of specialised skills to keep our market economy going and to develop it further. Learning to read at school is only the first step. To build our imaginary present-day pyramid, our engineer needs to study mathematics and physics for several years at a good university. So another way to assess Africa's education level is to compare our universities with universities elsewhere in the world.

What we see here is not a happy picture. The *Times Higher Education* newspaper's World University Rankings for 2012 show that only four of the top 400 universities in the world are African universities. These four are all in South Africa.

We have to face two sad facts. African countries have low levels of literacy compared with the rest of the world. A recent study suggests that even these low literacy rates are inflated. And without world-class universities, African countries cannot produce enough skilled people to benefit from the world's advanced market economy. What are then the reasons for Africa's poor performance?

4. The history of education in Africa

If we want to find reasons for Africa's poor performance in education, we need to look at our history. It is important to know that formal education – children going to school and to university – began only quite recently on this continent.

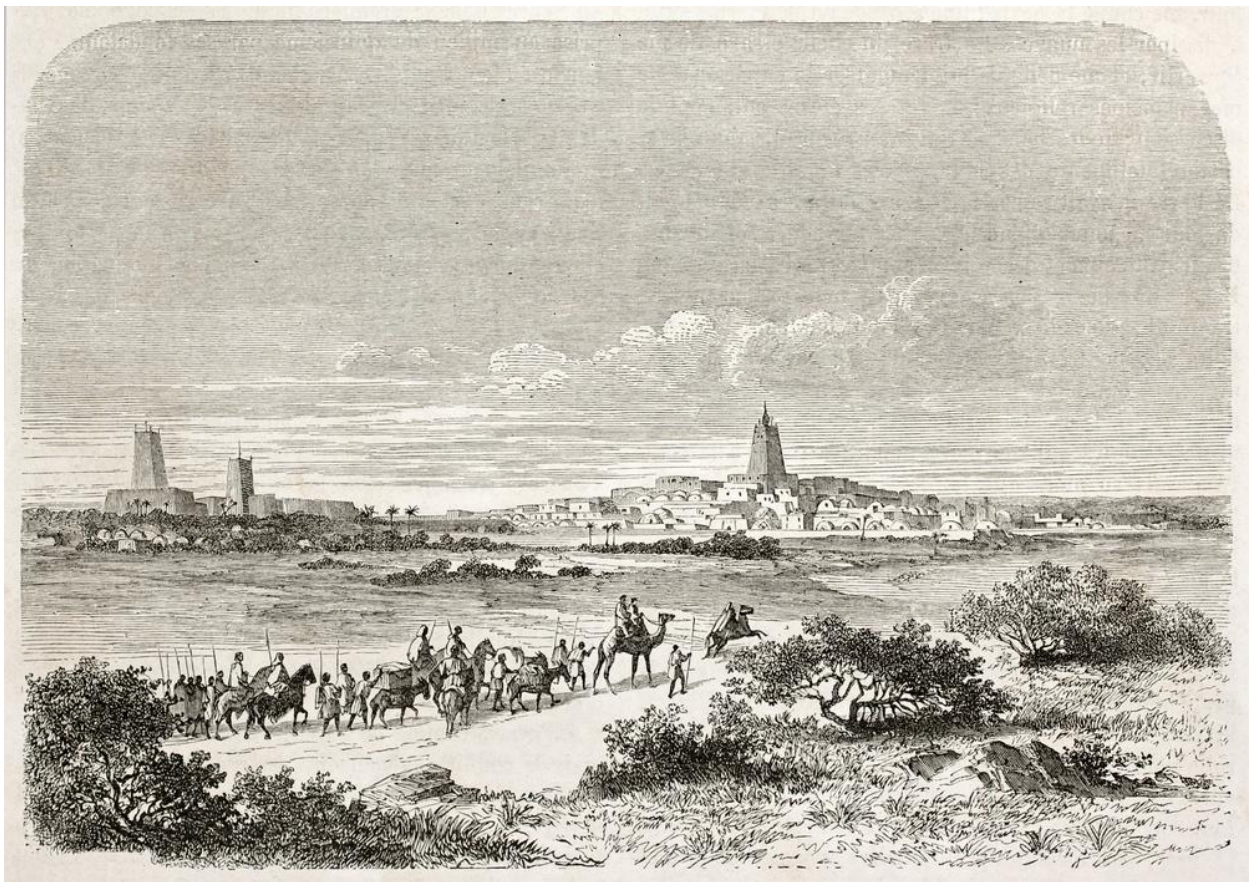
In Ancient Egypt (between 2500 and 500 BCE), men were formally taught to become scribes and administrators, that is, people who could write and people who could govern. But in those early days most other African societies lived just above subsistence levels, which means that they produced little more than the basic goods they needed for daily life and their economy did not advance. So they had very little need for education.

Generation after generation, children in Africa learned their skills and gathered their knowledge from their parents and relatives and their community. These skills were mostly to do with farming, and the knowledge was mostly about their environment and their social and cultural traditions. An economist would say that Africa's human capital was low in these days, because their very basic level of education did not give them the skills to advance their economy.

Of course, this was how most of the rest of the world lived too. Formal education existed only in India and China and in the Mediterranean civilisations of Ancient Greece and Rome. A famous early example is the Platonic Academy of Athens, a school that was founded in 385 BCE. But we should note that formal education in these countries was not for everyone – it was mostly for the elite, in other words for the rich and powerful.

4.1 The influence of Islam

The introduction of Islam in North Africa (around 670 CE) and parts of West and Central Africa (around 1075 CE) set off a rapid growth of formal education in this continent. Timbuktu, in modern Mali, was the centre of Islamic learning from the 13th to the 17th century, especially under the rule of Askia Mohammad I (around 1500 CE). Timbuktu's economic success attracted many scholars to the town, further strengthening the teaching of art, science and religion. With Emperor Askia Mohammad's support, thousands of manuscripts were written. About 700,000 of these manuscripts still survive in Timbuktu libraries today, and scholars are busy restoring, translating and digitising these valuable documents, so that we can learn more about the politics, economy and culture of this early African civilisation.



An old view of Timbuktu, published in 1860.

An interesting question is: why did formal education start in Africa only after the establishment of Islam? One answer is that in most sub-Saharan African societies, language was not written down. Skills and knowledge were passed from generation to generation in other ways, by storytelling, for example, or in cultural dances and rituals. And we know that hunter-gatherer people in sub-Saharan Africa expressed their ideas in cave paintings for thousands of years before written language was developed (somewhere in Mesopotamia and Egypt around 3700 BCE). The earliest known cave art, at Blombos on South Africa's southwest coast, dates from 80,000 years ago. But these hunter-gatherer groups – and the pastoral and agricultural groups that replaced them – did not develop or adopt written language.

The most likely reason why writing did not develop in sub-Saharan Africa is that the knowledge and technology of Egypt could not reach central and southern African countries because of the climatic differences between the northern Sahel, the tropical forests of central Africa and the savannah of the south. American scientist and popular author Jared Diamond shows, for example that knowledge of how to make paper from papyrus, a plant common in Egypt, was adopted by societies in the Middle East and Europe, but never by those in Southern Africa, because of the barrier of the tropics.

Without writing, African societies could not develop a system of formal education like the European education system that developed during the Middle Ages (500 to 1600 CE). Instead, most African societies relied on traditional informal education where ritual, games, singing and dancing played an important role. Boys and girls were often taught separately to help prepare them for their adult lives. There were no teachers or lecturers as we know them. Instead, all members of the community did this work, helping to educate the children until their ritual passage ceremony from childhood to adulthood.

The arrival of Islam introduced more formal models of education to Africa. The Muslim conquerors and traders brought with them written texts. This meant that Africans who adopted Islam and learned Arabic could now read, write and deepen their knowledge of philosophy, religion, science, medicine and many other subjects. Now Africans could share in the knowledge of great thinkers and philosophers who came before them. They could study mathematics, science and medicine by reading what generations of scholars had written on these subjects.

In the old days Africans had only the elders in their own villages to learn from. Now that they could read and write, they could make progress by 'standing on the shoulders of giants' – as the physicist and mathematician Isaac Newton (1642–1727) said. Written language gave them access to the works of great scholars. And with their influence, Africa could now produce its own internationally famous scholars. Ahmad Baba al Massufi, for example, studied at Timbuktu and by the time he died in 1627 he had published more than 40 books, becoming one of Africa's greatest scholars.

4.2 The influence of the Christian missionaries

Islam spread mostly to those countries at the top of Africa that were conquered by North African warriors or were part of the North African trade network. The rest of the African continent, particularly the Central Africa, East Africa, the southern parts of West Africa, and all of southern Africa continued their traditional lifestyle without access to written texts. The arrival of Europeans dramatically changed this picture.

During the 15th century, Europeans began to explore the coast of Africa in search of a route to Asia, where they hoped to trade in spices. In 1488 Bartolomeu Dias sailed from Portugal down the west coast of Africa, around Cape Point at the southern tip of Africa, and a little way up the east coast. Ten years later, Vasco da Gama was the first European to sail all the way from Europe around Africa to India. He returned to Portugal with large shipments of spices. Other traders followed, and until the Suez Canal was completed in 1869 this was the only sea route for Europe to trade with Asia.

Europeans began to settle in Africa, most noticeably at the southern tip of Africa. They brought with them printed books and the ability to read and write. Printing had been invented in Germany by Johannes Gutenberg in around 1450. This technology had brought a large increase in literacy – and economic growth – to Europe. Now, 200 years later, its benefits spread to Africa. The settlers built schools for their children where they could learn to read and write, and for some slave children too. Formal education, and with it a more advanced economy, had arrived in southern Africa.

These early schools were small and served only a small part of the African population. But something else that arrived with these Europeans began to transform African societies across the continent: the Christian religion. At the end of the 18th century, missionary societies began to set up mission stations in areas outside the border of the colony. The aim of these stations was to convert Africans to Christianity.

But their work also had another – and very important – result. To become a Christian, a person must be able to read the Bible. So missionaries had to teach Africans to read and write. Just like the Islamic schools at the top of Africa, Christian mission stations at the other end of the continent were the main reason that southern African societies became literate.

Some missionaries went further into the continent to convert African societies. A famous example is David Livingstone (1813–1873), a Scottish doctor and missionary from the London Missionary Society who explored deep into Africa. Livingstone's geographical discoveries inspired missionaries to spread the gospel and the written word throughout Central, East and southern Africa. The legacy of their efforts can be seen even today. Several economists have recently tested the effect the missionaries have had on people's educational attainment – and on

their incomes. The results show that African residents on mission stations today reach higher levels of education and earn higher incomes than their African neighbours not living on a mission station. This is because missionaries emphasise the importance of literacy.

Literacy leads to higher productivity, more freedom and greater equality. Christian missionaries therefore made a strong contribution in many African countries not only to formal education but also to the economy and to the creation of a free and equal society.

Not all missionary societies provided the same kind of education though. A recent study by an economist found that Protestant and Catholic societies had different effects. Both had a long-lasting effect on educational attainment. But although the Catholic mission teaching brought large benefits to men, it had no lasting benefits for women. The Protestant mission teaching, on the other hand, benefited women more than men. Both the Catholic and the Protestant missionaries benefited education in Africa, but the Protestants left a particularly large positive legacy because of all the positive externalities that women's education brings.

4.3 The influence of the colonisers

One effect of Livingstone's discoveries about the African interior was that they enabled European countries to claim African countries as colonies for their own benefit. Early 20th-century colonisation had a variety of effects, some good and some bad. We will take two examples.

The Republic of Ghana was colonised by the British. These colonisers brought new technologies and other improvements such as formal education to Ghana. They helped Ghana to develop an advanced market economy that could become part of the global trading network. But in the case of the Belgian Congo, the present-day Democratic Republic of Congo (DRC), colonisation brought very few benefits and many severe hardships. The colonial master, King Leopold II, and later the Belgian government, exploited the Congolese cruelly and invested little in the country in the form of building, technologies and education that would benefit later generations.

The very different effects of colonisation in these two countries can be seen today. Ghana, the first sub-Saharan country to gain independence (in 1957), is the rising star of Africa today. In contrast, the DRC suffers frequent outbreaks of political unrest and civil war. Income is the best reflection of the difference in living standards; Ghanaians today earn roughly ten times more per person than citizens of the DRC.

The differences between the colonial experiences of African countries are often explained as the effect of the nationality of the coloniser. Countries that were colonised by the British tend to be better performing economies today than those that were colonised by France, for example. Some

economists have argued that this was because the British invested more in education than the other colonisers.

But another economist suggests that this was because the British were more supportive of missionary education than other colonisers, who believed that education was the government's responsibility. British colonial governments 'privatised' their education. They encouraged private organisations to provide education, rather than providing it themselves. In this way, the British could educate far more children than the French could, even though the French may have spent more on education. So we can say that countries that were formerly British colonies are richer today not because they were under British rule, but because, a century ago, they received education that enabled them to become part of the market economy.

4.4 The effects of independence

Already before independence, the need for formal education in Africa had been highlighted. The Phelps Stokes Fund, an American foundation, convened several commissions in the 1920s to study the educational conditions and needs of Africans, and made recommendations for improving access and quality. These recommendations were taken up especially after the Second World War, as European colonizers started to realise that they had to fundamentally change the principles and legitimization of colonial governance to maintain in power.

Independence from colonial rulers occurred mostly in the 1950s and 1960s. It did not always bring better educational and economic results for the African citizens. In some countries the new political rulers invested in formal education, building new schools and providing more and better qualified teachers. This led to a revolution in African education, as literacy rates increased at massive rates. Burkina Faso is a good example: according to Michael Clemens (2004), it has "spent the last few decades bringing children into primary school at more than twice the rate achieved by today's rich countries when they were developing. It has done this with an economy far less developed than the leading economies of the 1800s and less developed than the vast majority of countries after 1960." Indeed, a revolution.

This rapid expansion in African primary education happened in nearly all African countries after the Second World War and continued after independence. This can be seen in work done by Ewout Frankema and presented in Table 1, which presents the average enrolment rates (another indicator to measure education) in colonial Africa in 1938, 1950 and 1960. It is interesting to note the slower post-1940 growth of enrolment rates in British Africa. In other words, the British lead in African education is mainly due to the high rate of activity of missionaries in the British colonies prior to 1940, rather than supposedly effective educational investment policies in the postwar and independence years. According to Frankema (2011), the pre-1940 differences in enrolment rates were important because they remained quite persistent over time.

Table 1: Gross enrolment rates at primary school level in percentages of total population age 5-14 for African countries, 1938-1960

Year	1938	1950	1960	1938-1960 (total increase)
British colonies				
Botswana	16	22	29	13%
Gambia	3	5	7	4%
Ghana	8	19	34	26%
Kenya	12	26	33	21%
Lesotho	50	59	58	8%
Malawi	35	39	21	-15%
Mauritius	38	51	59	21%
Nigeria	8	16	25	17%
Sierra Leone	5	7	16	11%
Somalia	1	1	4	3%
Sudan	3	6	10	7%
Swaziland	24	29	41	17%
Tanzania	5	10	20	15%
Uganda	27	18	29	2%
Zambia	30	35	34	4%
Zimbabwe	33	44	48	15%
French colonies				
Benin	7	2	16	9%
Burkina Faso	1	2	5	4%
Cameroon	21	25	39	18%
Central African Republic	2	7	19	17%
Chad	1	1	10	9%
Congo, Rep	5	24	47	42%
Côte d'Ivoire	4	6	28	24%
Djibouti	7	9	12	5%
Gabon	5	21	29	24%
Guinea	5	3	12	7%
Madagascar	14	22	31	17%
Mali	2	3	6	4%
Mauritania	2	1	5	3%
Niger	1	1	3	2%
Senegal	6	7	16	10%
Togo	6	17	26	20%
Other colonies or independent territories				
Angola	1	1	8	7%

Guinea Bissau	1	5	15	14%
Mozambique	5	12	24	19%
São Tomé and Príncipe	14	16	20	6%
Equatorial Guinea	15	20	43	28.4%
Congo, DRC	23	33	36	13%
Rwanda-Burundi	7	11	24	16.8%
Ethiopia	1	2	4	3.2%
Liberia	6	11	19	12.6%
Namibia	15	22	28	13%

Source: Frankema 2011.

On the whole, then, *access* to education improved after independence, though the *quality* of the education lagged behind. Broad-based primary education improved literacy rates across the continent, but very few of these children found their way to university. One reason for this is that tertiary education was (and still is) expensive, because most African governments put most of their funding into primary and secondary education.

Of those who did manage to get a university qualification, many did not stay in Africa. Some went to Europe or the United States in search of higher salaries. Some of them left because of political unrest in their own countries. This ‘brain drain’ means that thousands of Africa’s most brilliant scholars and entrepreneurs are living outside Africa. They are not passing on their knowledge and skills to the next generation. This further reduces the quality of education in African countries.

The low quality of education that children in Africa receive remains Africa’s biggest obstacle on the road to prosperity that independence should bring.

5. The future of education in Africa

As we have seen in this chapter, there are many reasons for African countries’ poor literacy rates and generally low level of education. But there are also reasons to be optimistic about the future. Throughout history, better access to education and better quality education have gone hand in hand with better incomes. But it is hard to decide which comes first – the improvement in education or the increase in incomes. Better education helps people to get a higher income, but a higher income also helps people to get a better education. The extra income means they can buy goods that help them to benefit from education, from basics such as electric lighting and better food to more advanced educational aids such as books and laptops. So improvements in education and improvements in the economy reinforce each other.

The important point here is that as African societies become wealthier we can expect more Africans to demand better education from their schools and universities. If improvement comes too slowly, they will seek better education elsewhere. This does further damage to Africa, as valuable skills are lost.

In the past, to find better education usually meant leaving Africa, but with the rise of our digitally connected world, high quality education is just a click away. Modern communication technology is an essential tool in the quest to provide better education for African students. Mobile phones are used everywhere in Africa. We all have one because it gives us quick and cheap access to all our friends, and smart phones give us access to the internet. Farmers in Tanzania use it to get market prices for their produce, entrepreneurs in Kenya use it to make secure payments for goods and services, South African consumers use it to pay their monthly electricity bill – these are just a few examples. Mobile phones can also be educational tools. Several African firms are producing mobile phone games for children to improve their skills, for example in mathematics or English.

But the biggest advantage of better technology is access to the internet. As the libraries of Timbuktu did in the past, it gives access to a large body of knowledge previously unavailable to African students. Information about philosophy, medicine, economics, biology, engineering, statistics, history, geography, chemistry or any other subject imaginable is now at their fingertips. Not only is this information free, but the teaching of it is increasingly becoming free too. Several courses from leading universities like Harvard and the Massachusetts Institute of Technology now provide free online courses in several subjects. Instead of enrolling at an African university, students can subscribe for free to these online courses and learn the skills necessary to partake in the advanced market economy. Perhaps African tertiary education of the future will not all be large universities funded by under-resourced governments. Perhaps some of them they will be computer centres funded by communities where students can listen to and learn from the top professors from around the world.

This demonstrates how transformative technology can be when combined with African ingenuity. Just as Islam traders and Christian missionaries brought the written word to African communities, promoting African scholarship, so too can the digital age provide rural African villagers with some valuable tools for transforming their communities from subsistence farming to sophisticated market economies.

But technology cannot do everything. Governments must provide the conditions necessary for all children to go to school. They must provide a safe and secure environment, because formal education usually stops during times of political unrest and civil war. They must provide a good transport system, especially during winter when roads are muddy and rivers too deep to cross. They must provide good classrooms with reliable electricity, to power everything from a light

bulb to a computer. They must provide a healthy environment, because many diseases found in Africa, such as malaria, make it hard for children to learn. And they must make education compulsory for all children and prohibit the employment of children in full-time jobs. Even though many African countries have made important improvements over the last 20 years, too many children in some of these countries do not have the basic conditions necessary for going to school.



A laboratory is necessary for chemists to experiment.

Getting children into schools is important, but without good teachers even the most well-equipped school can do little. In South Africa, for example, nearly all children go to school, but the quality of South African primary and secondary education is very bad. In 2012 almost 90% of the final year South African students failed to obtain a grade above 50%. Many teachers are unqualified, often absent, not motivated to do their jobs well and unable to keep discipline in the classroom. The South African government has tried to solve the problem by hiring more teachers and increasing their salaries, but with little effect. Governments are often slow-moving and have their own interests at heart rather than the citizens' interests. Teacher trade unions can add to the problem, for example by preventing the dismissal of bad teachers. Clearly the culture of learning needs to improve, but this will not happen fast.

If governments cannot provide quick solutions, citizens of African countries must find other sources of help. Civil society, which means citizens and private companies, must become more involved in education and not leave it all to the government.

Parents must demand better education for their children. One way they can do this is through school governing bodies. These are run by parents and they make important decisions that affect the school. Schools that have active governing bodies run by parents who are passionate about education have better performing students.

The wider society can also help. In several African countries, NGOs (non-governmental organisations) run classes in mathematics, science and English for underperforming students. In some countries church groups or other volunteer organisations provide textbooks and other school supplies. Sometimes foreign aid is used to support school feeding and health programmes. But the best solutions are local solutions. An excellent example is Uganda's Mountains of the Moon University. In 2007, a rural western Ugandan community decided that they wanted tertiary education for their children. With the support of the local archbishop, government officials and village elders, a new university was born. It is funded by the local community and its students are mostly from the surrounding area. This shows what a community can do if it demands better education for its children.

Education is the key to prosperity. History shows that countries prosper when they are part of the advanced market economy, integrated into the world economy. The key to integration is a well-educated workforce. If the next century is to be the African century, it will be because students know the history of education in Africa and the problems we face today and are determined to get a good education not only for themselves but for future generations.

Discussion questions

- 1) What are the differences between formal and informal education in traditional African societies?
- 2) Religion, both Islam and Christianity, seems to have played an important role in the development of formal education in Africa, and therefore on economic development. Do religious organisations still matter for Africa's future development?
- 3) What can be done to reverse the 'brain drain'?
- 4) Which school subjects are the most important for economic development?
- 5) How can African universities become internationally competitive?

Suggested readings

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