WikiAfrica Primary School

Feasibility Study

Draft, November 2012.

The WikiAfrica Primary School Feasibility Study was produced in 2012 within the frame of WikiAfrica, a cross-continental collaboration that aims to increase the quantity and quality of African content on the world's most referenced online encyclopaedia, Wikipedia.

WikiAfrica is promoted by lettera27 Foundation and the Africa Centre and it was initiated by lettera27 Foundation in 2006.

WikiAfrica, 2012.

"Education is the most powerful weapon which you can use to change the world "
Nelson Mandela

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1. Introduction

WikiAfrica Primary School Feasibility Study is the first step of the WikiAfrica Primary School, a project aiming at giving students, teachers and families access on Wikipedia to all the documentation needed to obtain the primary school degree of their country, in the language of instruction.

The feasibility study looks at Wikipedia and primary schools. Its purpose is to establish a baseline report of the state of Wikipedia languages and of primary school education in three counties to date. The reports are meant to define ways in which Wikipedia could contribute to the issues currently at play in the primary education landscape and to design the WikiAfrica Primary School project accordingly. The study is divided into:

1. Introduction specifically related to the WikiAfrica Primary School project.

2. Wikipedia. A presentation of the overall situation of the Wikipedia projects in all the languages used in the African countries' school systems, by taking into consideration the number of articles produced as of October 8, 2012 (beginning of the assessment process) and as of November 8, 2012 (end of the assessment process). Then, a more accurate quality assessment has been conducted on three projects: English, French, and Italian Wikipedia.

3. Primary school. A presentation of the primary school systems in Italy, South Africa and Cameroon. Those three countries have been chosen for the diversity of their school systems and because they will be a focus of the WikiAfrica Primary School project in 2013. In particular the case study about Italy analyses the relevance of digital content for primary education, interculture and lifelong learning; the case study about South Africa observes the peculiarity of the South African system (the post–apartheid emphases on education, 11 languages, the situation of schoolbooks and infrastructures and the challenges in evaluating and improving the system).

4. Italian primary school curricula. This session presents content and skills related to primary school in Italy and their potential links to Wikipedia articles. This session is specifically important to define the articles and topics the Primary School project will focus on.

5. Best practices and reports from interviews.

The feasibility study is already designed as a contribution to Wikipedia; its sessions are structured as Wikipedia articles, they are under Creative Commons attribution–share alike, and they focus on:

- Wikimedia educational projects
- Wikipedia and the African languages

- Primary school
- Primary school in Italy
- Primary school in South Africa
- Primary school in Cameroon

This feasibility study was developed in three months with the involvement of four researchers and a group of advisers interviewed within the study. It was supported by lettera27 Foundation.

Key findings

The WikiAfrica Primary School Feasibility Study produced a quality and quantitative assessment of Wikipedia editions in the languages used for instruction in Africa and three case studies about primary school in Italy, South Africa and Cameroon. Below a list of the key findings specifically related to the WikiAfrica Primary School project.

1. Primary school education is at the centre of Millennium Development Goals (MDG) in particular in goal n. 2 and 3. MDG are linked to the "Education for All" (EFA) programme led by UNESCO. The 2012 EFA Global Monitoring Reports stats that "on current trends, the goal of universal primary education (UPE) will be missed by a large margin".

2. In November 2012 UNICEF released a study that forecast a 4% increase in the global population of children by 2025. By 2050 "1 in every 3 births – almost 1 in every 3 children under 18 – will be African". In some Sub-Saharan African countries, the population of school-aged children will double between 2010 and 2025.

3. Primary school constitutes the ground for the development of personality. It aims to enact literacy and to offer an essential contribution to understand the complex reality everybody lives in and to be part of it as a citizen. In primary school pupils acquire and apply knowledge and skills, and disciplines are means to achieve educational goals rather than simple set of notions.

4. Primary school provides access to higher education and to a workplace, as it provides the basic skills to engage in entrepreneurship.

5. Content and skills related to primary school do not refer to children only. It is essential to consider also adult education, lifelong learning and the opportunity to develop and maintain skills. It is also important to mention the specific challenges related to mobility, migration and learning in a new language.

6. Primary school programs indicate skills that students must achieve. According to countries, the curriculum is set nationally or it is left up to teachers to choose the content and specific education curricula.

7. The key competences necessary for personal fulfilment, active citizenship, social cohesion and employability in a knowledge society and identified by the European Union are 1) communication in the mother tongue; 2) communication in foreign languages; 3) mathematical competence and basic competences in science and technology; 4) digital competence; 5) learning to learn; 6) social and civic competences; 7) sense of initiative and entrepreneurship; 8) cultural awareness and expression.

8. Primary school lasts from 5 to 9 years according to each country. In South Africa, primary school is split according to curricular focus between Foundation Phase (from gradeR to grade 3 – 4 years) and Intermediate Phase (from grade 4 to 7);

but there is no division within the school.

9. Teachers are at the core of the learning process. Digital tools and any tool need to be part of the everyday teaching practices, otherwise they will remain isolated, provisional and ineffective.

10. All primary schools have assessment tools to monitor and evaluate learning levels (certificates, metrics).

Languages

1. We can approximately state that the languages used for instruction in Africa are 35 (considering official and permitted languages). In realty, in particular in the first years of primary school, children start learning in the language they speak (the so-called local languages); if we count all those languages, the languages used for instruction in Africa are far more than 35.

2. 51 out of 54 counties use English, French, Portuguese and Spanish, both as the only or as one of the permitted languages; Ethiopia uses Amharic and several regional languages; Libya and Sudan use Arabic only. French, English and Arabic are the three dominant languages, respectively used in 26, 24 and 12 countries.

3. There are 285 linguistic editions of Wikipedia; 32 of the 35 languages used for instruction in Africa have a Wikipedia edition. Seychellois Creole (used in the Seychelles), Luba (used in Congo DR) and and Southern Ndebele (used in South Africa and Zimbabwe) do not have a Wikipedia edition. Southern Ndebele has a test running since 2009 on Wikipedia Incubator with only one article written.

4. Looking at Wikipedia editions in the languages used for instruction in Africa, only English, French, Italian, Spanish and Portuguese have over 750,000 articles; Arabic has almost 200,000. Between October 8th and November 8th, the growing rate of those editions is between 3,000 and 23,000 articles; the other editions have a rate between 30 and 378 articles (Afrikaans and Swahili Wikipedias have the most significant growing rates). Only Malagasy and Yoruba Wikipedias have over 30,000 articles but a very limited growing rate (−1 and +53). Those data summarise the current state and hierarchy of Wikipedia editions.

5. 23 national languages and other regional languages are specifically used for adult education, informal education and in the first years of primary school. In many countries children start their education in their own language; another national language is added since the early years and used consistently for further education.

6. The skills acquired in the first years of education are essential for the entire educational career of children. In South Africa teachers are not always comfortable in teaching in the secondary national language; this gap has major repercussions on the entire educational career of children.

Content

1. Primary school curricula focuses on literacy and numeracy. Knowledge provided needs to be meaningful to the pupils' own lives. Content is therefore related to life skills (as the South African system calls it); it strongly focuses on citizenship and it fosters the capacity of understanding the complex reality of the world (geography, history, natural sciences, languages, mathematics and technology). In Cameroon work practices are

included in the curricula (agriculture, animal husbandry, poultry, brick laying, carpentry…)

2. In primary school it is essential to provide a balance between local, national and international content. Children need to acquire an awareness of different scales of knowledge and their connections. In Cameroon, the experience of doual'art within the project Douala Ville d'Art et d'Histoire has showed the need of primary school for content that is related to local history. The South African curricula for primary education has strongly developed a focus on local and national history at the expense of a broader international focus; teachers have expressed the need of providing students with a broader sense of the world history. In Italy, the way society has drastically changed in the last decades has highlighted the need of a stronger intercultural and inclusive approach to knowledge.

3. Schoolbooks are not available to all students. The case studies of South Africa and Cameroon present the severity of the situation, and it is reasonable to presume that the problem is consistent in other African counties.

4. Teachers require additional training and teaching materials in order to develop effective content and enable primary schools to reach their full potential.

5. There are hardly any OER Open Education Resources aimed at primary school. OER rather focuses on secondary school and university.

6. Publishers are a major stakeholder in the control of textbooks and its business. Alternative models exists and teachers and NGOs have a major role in developing those teaching materials and new textbooks.

7. The experience of the offline distribution of Wikipedia implemented in Kenya within the project Wikipedia for Schools showed that the content of Wikipedia in English distributed in thirty Kenyan high schools was welcomed but it did not offered content sufficiently linked to the Kenyan school curriculum. Students requested content more specifically linked to their curricula.

8. Wikipedia has a quality assessment process. According to the guidelines the best Wikipedia articles should meet the polities regarding content and have to be well-written, comprehensive, well-researched, neutral and stable. Furthermore, they have to have a concise lead section that summarises the topic and prepares the reader for the detail in the subsequent sections, and an appropriate structure with a substantial but not overwhelming table of contents. The article's length should be appropriate so that it "stays focused on the main topic without going into unnecessary detail" and be illustrated with appropriate and sufficient media. The Wikipedia Quality Assessment projects have developed independent and collaborative evaluations systems. Featured articles and quality articles ratings are assigned through a community procedure. The overall impression is that Wikipedia in English presents an

average of qualitatively better articles and that Wikipedia gives better performances on articles on specific subjects, than in general, introductory ones on a particular subject.

9. Wikipedia is an encyclopaedia and it is meant to provide general information on a subject. It is not a schoolbook and it is requires a certain degree of literacy to be read and understood. Thanks to their license, Wikipedia content can be republished, adapted and reuse for new and different purposes.

10. Wikipedia presents an over-representation of the so-called Western-based subjects and an under-representation of the subjects related to the so-called "Global South".

11. The way articles are evaluated by Wikipedians and the way they are judged by teachers or from an educational perspective do not necessary correspond.

12. The quality of Wikipedia articles needs to be assessed and verified also outside Wikipedia and collaborative processes.

13. WikiAfrica Cameroon is currently verifying the possibility of uploading on the Internet the recent test of the primary school degree with included the solutions.

ICT and interfaces

1. ICT is a tool to access and share information, to "learn to learn" and to have fun while learning; it can also provide new and different interfaces and learning experiences. On the other hand ICT is a distraction, a tool which produces new pidgins, a resource under-exploited in the field of education and not necessarily a better interface than traditional printed textbooks. ICT is also closely linked to resources, infrastructures and the decision making processes and stakeholders.

2. Technology-driven innovation needs to be a practice-driven innovation to situate it in our lived experience. School can help to understand how technologies work rather than teach how to use them. Wikipedia needs to taught as something to review, edit and write in, rather than to look at. This process is linked to media literacy, it allows appropriation and it develops critical thinking.

3. South Africa has released its White Paper on e-Education in 2004; as the South Africa case study reports, computers though remain in the office and are used for administrative support and the ICT in Education survey reports in 2010 that only 6% of classrooms have computers connected to the Internet and used by learners who do CAT (Computer Application Technology) as a subject.

4. In September 2013 Italy starts its digital textbooks project (Decreto Crescita 2.0).

5. Wikipedia is provided for free on smartphones in 18 countries of Africa and Middle East by Orange mobile phone company.

6. Wikipedia can be provided also offline. In particular in 2012 a new Kiwix-USB plug has been developed by Kiwix and Wikimedia France.

Teachers and infrastructures

1. In Sub-Saharan Africa there is a strong lack of trained teachers (in 2010 the pupil/teacher ratio was 43:1) and over-crowded classrooms. The South Africa case study also reports data from Value in the Classroom: the quantity and quality of South Africa's teachers (Centre for Development and Enterprise September 2011) which states that educators do not work regular hours, there is poor attendance and do not use their time efficiently.

2. The South Africa case study also presents the challenges of school infrastructures; shortage of books, teaching materials, support and administrative staff; not all schools have access to running water, electricity or toilets; insufficient access for pupils to nutrition and sexual assault and violence in school is on rise; a significant number of children are in grades that do not reflect their age; students are often not able to complete homework due to household chores being seen as higher priority; the impact of HIV is significant and debilitating. It is reasonable to presume that those problems might be consistent in other African counties.

3. Primary school education in Cameroon is free since 2000, but families must pay for uniforms, book fees, and sometimes even anti-malaria prophylaxis for pupils.

4. Primary schools are not only an infrastructure for school, but also – potentially – for communities and their surrounding territories.

5. Education is an ecosystem involving many stakeholders: organisations, public institutions, local communities, school infrastructures, projects, individual initiatives... Due to the complexity of this ecosystem, people who are part of it are often unaware of the scenario they operate in and they do not benefit from best practices and the opportunity of relate to other people and organisations. A project on Wikipedia should also provide access to this information.

2. Wikipedia

Wikipedia is a multilingual, web-based, free-content encyclopaedia project operated by the Wikimedia Foundation (WMF) and based on an openly editable model. The name "Wikipedia" is a portmanteau of the words "wiki" (a Hawaiian word that means "quick") and "encyclopaedia".

Wikipedia is written collaboratively by largely anonymous Internet volunteers who write without pay. Anyone can write and make changes to Wikipedia articles – anonymously, under a pseudonym, or stating their real identity. The result is a live collaboration that differs from printed encyclopaedias in important ways: Wikipedia is continually created and updated, with articles on historic events appearing within minutes, rather than months or years.

The fundamental principles by which Wikipedia operates are the "Five Pillars."[1] The Wikipedia community has developed many policies and guidelines to improve the encyclopaedia; however, it is not a formal requirement to be familiar with them before contributing. Since its creation in 2001, Wikipedia has grown rapidly into one of the largest reference websites, attracting 470 million unique visitors monthly (as of February 2012)[2]. There are more than 72,000 active contributors working on over 23,600,000 articles in 285 languages.

Every day, hundreds of thousands of visitors from around the world collectively make tens of thousands of edits and create thousands of new articles to augment the knowledge held by Wikipedia. Everyone – everyone, aside from age, culture and background – can add or edit article prose, references, images and other media on Wikipedia.

One of the main assumptions is that contribution is more important than the expertise of the contributor. What will remain depends upon whether it fits within Wikipedia's policies, including being verifiable (for so, excluding opinions and beliefs and non-reviewed research), and being free of copyrighted material or contentious material about living people. Any contribution that violates the rules, including mistakes and "vandalisms",[3] can be easily reversed. Many experienced editors often watch the recent changes to help ensure that edits are cumulative improvements.

Outreach projects and education

There are many projects carried on by Wikimedia Foundation that

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1 http://en.wikipedia.org/wiki/Wikipedia:Five_pillars

2 http://stats.wikimedia.org/reportcard/

3 A "vandalism" is any addition, removal, or change of content in a deliberate attempt to compromise the integrity of Wikipedia. Examples of a typical vandalism are: adding obscenities and/or irrelevant comments to a page, blanking pages without any reason, and inserting obvious nonsense into a page.

deal with the issue of outreach and dissemination of Wikipedia around the globe. The most important project is **Wikipedia Zero**[4], an initiative to enable charge-free mobile access to Wikipedia in developing countries, reducing the two most important barriers to accessing free knowledge: data usage and network speed.

The initiative is based on partnerships with mobile phone operators, in order to deploy a version of Wikipedia in such a way that the operator's users do not need to pay for data access. There are two different methods in which an operator partner can take part in the Wikipedia Zero program: by allowing the access at "zero rate" to the full mobile version of Wikipedia[5] and to a light, text-only version;[6] or by allowing the access at "zero rate" only to the text-only version. As part of the incentive for operators to participate in Wikipedia Zero, a banner is shown atop the Wikipedia page showing the operator's name.

At the moment, there are already several confirmed partners for the initiative, like Orange, Telenor, and Saudi Telecom Company. The project has been deployed so far in Cameroon, Ivory Coast, Kenya, Niger, Tunisia, Uganda (Orange), Malaysia, Montenegro, Thailand (Telenor and its subsidiaries), and Saudi Arabia (STC), but by the end of 2013 it will be deployed in 30 countries for a total of more than 200 million people to be served.[7]

There are also other initiatives by WMF and its local chapters[8] about dissemination of Wikipedia and its sister projects in schools[9]. For the sake of brevity, we will only refer to some of them, and focus a bit more on the Kenyan programme.

The **Wikipedia Education Program** is a WMF project, started as a pilot in 2010, that initially focused on improving the content of the English Wikipedia for the topic area of United States Public Policy.[10] The pilot showed that university outreach brought thousands of newcomers to contribute quality content to Wikipedia. From that

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4 http://www.mediawiki.org/wiki/Wikipedia_Zero

5 http://m.wikipedia.org/

6 http://zero.wikipedia.org/

7 Programmed countries are: Botswana, Central African Republic, Congo, Egypt, Equatorial Guinea, Guinea, Guinea-Bissau, Jordan, Mali, Madagascar, Mauritius, Morocco, Senegal, and Vanuatu (Orange); Bangladesh, India, Pakistan, and Serbia (Telenor and its subsidiaries); Bahrain and Kuwait (Saudi Telecom Company).

8 Wikimedia chapters are independent organizations founded to support and promote the Wikimedia projects within a specified geographical region (country). Like the Wikimedia Foundation, they aim to "empower and engage people around the world to collect and develop educational content under a free license or in the public domain, and to disseminate it effectively and globally." 39 chapters currently exist, with at least one Chapter on every continent of the world. A list of those chapters may be found at http://meta.wikimedia.org/wiki/Wikimedia_chapters

9 A long list of projects and initiatives all around the world is available at https://outreach.wikimedia.org/wiki/Education_Portal/Projects_and_Programs

10 https://outreach.wikimedia.org/wiki/Wikipedia_Education_Program

initial result, supported by the 2011–2015 Strategic Plan, WMF established programmes in four countries (Brazil, Canada, Egypt, and the United States) that continue in the same path.

After several short-lived initiatives, Wikimedia Italy (WMI or WM–IT) launched **Wikipedia va a scuola!** ("Wikipedia goes to school!"),11 an umbrella-project for three different initiatives: Crescere che avventura ("Growing Up Is an Adventure"), conducted in partnership with Istituto degli Innocenti of Florence and other parties;12 **Adotta una parola va a scuola** ("Adopt a Word Goes to School"), in partnership with Region Emilia–Romagna;13 and **Autori in Wikipedia** ("Authors in Wikipedia"), in partnership with the Lombardy branch of the National Agency for Development of School Autonomy (ANSAS Lombardia).14 All of these projects have been held along 2012, but all are planned to be continued (Crescere che avventura) or replicated (Adotta una parola va a scuola and Autori in Wikipedia) in 2013.

Another interesting project is **Wikipedia en el aula** ("Wikipedia in classrooms"), cured by Wikimedia Argentina (WM–AR) in co-operation with Educ.ar portal (an Argentinian Ministry of Education project).[15] The website provides some guides and tutorials that teach the kids how edit and participate to Wikipedia, as well as the proper and critical use of sources and a method of research.

In the light of the 10th anniversary of Wikipedia, the fairly new Kenyan chapter, Wikimedia Kenya (WM–KE), decided to run a pilot project for schools in Kenya, in co-operation with WMF. The initiative, called Wikipedia for Schools, started officially on January 15, 2011, and lasted five weeks,[16] involving thirty schools in three different cities, namely Mombasa (Coast Province),[17] Nyeri (Central Province),[18] and Kakamega (Western Province).[19]

The objectives of this project were: installing and configuring Offline Wikipedia on schools' computers; providing a Wikipedia guide to assist beginners in getting started; giving lectures at each school (for both teachers and students), to teach how to gain maximum benefit when using Wikipedia; providing each school with a copy of Offline Wikipedia, for recovery purposes.

The overall outcome was generally positive. Main objectives (installing Offline Wikipedia and providing Wikipedia guides) were generally achieved with a handful of exceptions, mostly due to the dilapidated status of computers in some schools or to the diffidence of officials in other ones. Giving lectures proved to be a tougher

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11 http://wiki.wikimedia.it/wiki/Wikipedia_va_a_scuola! (Italian only)

12 http://wiki.wikimedia.it/wiki/Crescere_che_avventura (Italian only)

13 http://wiki.wikimedia.it/wiki/Adotta_una_parola_va_a_scuola (Italian only)

14 http://wiki.wikimedia.it/wiki/Autori_in_Wikipedia (Italian only)

15 http://wikipediaenelaula.educ.ar/ (Spanish only)

16 http://wikimedia.or.ke/Wikipedia_for_Schools

17 http://wikimedia.or.ke/Mombasa_Report

18 http://wikimedia.or.ke/Kakamega_Report

19 http://wikimedia.or.ke/Nyeri_Report

objective to reach, mostly because of poor understandings with schools or lack of time of both teachers and students. In almost all schools, anyway, the volunteers had been welcomed, sometimes very warmly, by teachers and students (especially the formers).

In the final reports, WM–KE volunteers detected some problems, that were common to all schools – the most important being that the content of Offline Wikipedia was based on British school curriculum, therefore it was not fully appropriate for Kenyan students.

This may prove to be the point we need to look after: a successful project for schools is a project that takes into account the needs of schools themselves. Wikipedia should undertake a huge leap: moving from the actual approach – based on widening its base of volunteers, by involving teachers and students in editing and using critically Wikipedia – towards a new approach, aimed at providing what teachers and students really need in their school researches.

Languages used in the African educational systems

The following table is a rough prospect of the 35 languages used (or permitted) in the educational systems of the 54 African countries[20].

Country	Languages used in the educational system
Algeria	French, Arabic, Berber dialects (permitted)
Angola	Portuguese
Benin	French
Botswana	English, Setswana
Burkina	French
Burundi	French, Kirundi
Cameroon	French, English
Cape Verde	Portuguese
Central African Republic	French
Chad	French, Arabic
Comoros	French, Arabic
Congo	French
Congo DR	French, Kikongo, Lingala, Luba, Swahili, several other regional languages (locally)
Djibouti	French (grade 1), Arabic (grade 3)

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20 The table is mainly based on UNESCO's World Data on Education (Seventh edition 2010/11), available at http://www.ibe.unesco.org/en/services/online–materials/world–data–on–education/seventh–edition–2010–11.html.

Egypt	Arabic, English
Equatorial Guinea	Spanish, French
Eritrea	Tigrinya, Arabic, English
Ethiopia	Amharic, several other regional languages (mainly Tigrinya, Oromo, Somali; locally)
Gabon	French
Gambia	English
Ghana	English, several other regional languages (locally)
Guinea	French
Guinea–	Portuguese
Ivory Coast	French
Kenya	English, Swahili
Lesotho	Sesotho, English
Liberia	English, several other regional languages (locally)
Libya	Arabic
Madagascar	French, Malagasy
Malawi	Chichewa, English
Mali	French, several other regional languages (locally)
Mauritania	Arabic, French (grade 2)
Mauritius	English, French, Arabic (optional), other Asian languages (optional)
Morocco	Arabic, French
Mozambiqu	Portuguese
Namibia	English, several other regional languages (locally)
Niger	French
Nigeria	English, Hausa–Fulani (permitted), Yoruba (permitted), Igbo (permitted)
Rwanda	Kinyarwanda, English, French
São Tomé e Príncipe	Portuguese
Senegal	French, Wolof (permitted)
Seychelles	Seychellois Creole (grade 1), English (grade 3), French
Sierra Leone	English
Somalia	Arabic, Somali, English
South Africa	Afrikaans, English, Southern Ndebele, Northern Sotho, Setswana, Southern Sotho, Swazi, Tsonga, Venda,
South	English

Sudan	Arabic
Swaziland	English, Swazi
Tanzania	English, Swahili
Togo	French, several other regional languages (locally)
Tunisia	Arabic (grade 1), French (grade 3)
Uganda	English, Swahili, several other regional languages
Zambia	English, several other regional languages (locally)
Zimbabwe	Shona, Ndebele, English

At a first glance, we can observe that the languages of the former colonist countries (English, French, Portuguese, Spanish) are still dominant in the educational systems in Africa: 51 out of 54 countries use one of these languages, both as the only or as one of the permitted languages. Their use mostly follows the formal colonial allegiances of the various countries.

French and English are the two dominant languages, respectively used in 26 and 24 countries. All five former Portuguese colonies (Angola, Cape Verde, Guinea–Bissau, Mozambique, and São Tomé e Príncipe) use Portuguese language in their educational systems, while Spanish is used only in Equatorial Guinea, the last Spanish colony to achieve independence.

Arabic is used in 12 countries: the whole of Northern Africa, several countries across Sahara desert (Mauritiania, Chad, and Sudan), in the Horn of Africa (Djibouti, Eritrea and Somalia), and in Comoros. Mauritius allows to choose Arabic as an optional language, as well as other "Asian languages."

The only country which does not use any of these languages is Ethiopia, which recognizes Amharic as the national language and all regional languages as eligible for teaching in the educational system. Another notable case is South Africa, which recognizes all of its 11 official languages within the educational system.

Several countries recognize the use of local languages in schools, and some of them (Congo DR, Ghana, Namibia, and Uganda) explicitly assign a certain fixed amount of hours to teaching of those languages in the school curricula.

In general, local languages have a stronger role in primary education; while official languages become essential in further education.

General overview of involved Wikipedia projects

After this initial step, we checked how many languages have a Wikipedia project. This "narrowed down" our general overview from 35 languages to 32 projects.[21]

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21 Data from http://wikistats.wmflabs.org/wikimedias_html.php?
   sort=good_desc&th=0&lines=834

ISO	Wikipedia in...	Countries that use the languag	Number of articles (as of Oct	Number of articles (as of	Diff.
en	English	24	4,070,29	4,093,07	+ 22,775
fr	French	26	1,303,74	1,314,74	+ 11,002
it	Italian	0	964,472	975,487	+ 11,015
es	Spanish	1	925,612	932,752	+ 7,140
pt	Portuguese	5	756,758	759,716	+ 2,958
ar	Arabic	12	197,512	202,679	+ 5,167
mg	Malagasy	1	38,752	38,752	0
yo	Yoruba	1	30,102	30,155	+ 53
af	Afrikaans	1	24,343	24,707	+ 364
sw	Swahili	4	24,370	24,504	+ 134
am	Amharic	1	11,768	11,799	+ 31
so	Somali	2	2,479	2,520	+ 41
ln	Lingala	1	1,930	1,949	+19
rw	Kinyarwand	1	1,812	1,814	+ 2
sn	Shona	1	1,275	1,272	– 3
kab	Taqbaylit (Kabyle)	1	1,106	1,138	+ 32
wo	Wolof	1	1,129	1,129	0
kg	Kongo (Kikongo)	1	695	709	+ 14
ig	Igbo	1	695	696	+ 1
nso	Northern Sotho	1	626	686	+ 60
zu	Zulu	1	567	568	+ 1
tn	Setswana (Tswana)	1	497	497	0
ss	Swati	2	362	363	+ 1
ha	Hausa	1	275	275	0
om	Oromo	1	271	275	+ 4
ti	Tigrinya	2	257	258	+ 1
ts	Tsonga	1	245	243	– 2
ve	Venda	1	192	194	+ 2
rn	Kirundi	1	185	186	+ 1
ny	Chichewa (Nyanja)	1	163	163	0

st	Sesotho (Southern Sotho)	2	151	151	0
xh	Xhosa	1	141	141	0
–	Luba	1	–	–	–
–	Seychellois Creole	1	–	–	–
–	Southern Ndebele	2	–	–	–

What comes to light is a stark difference between communities. English, French, Italian, Spanish, Portuguese are the largest projects taken into consideration, all of them well over the 750,000 articles barrier. Those communities definitely take advantage of the fact that their languages are official languages also in countries outside Africa,[22] and that are spoken primarily in developed countries.

Another project which has a six-digit number of articles is Arabic Wikipedia: while Arab is spoken in a number of countries, most of them concentrated in the Middle East and Northern Africa (MENA) area, it has by the way a smaller community compared to the Indo-European languages' communities.

The first African-based language projects are Malagasy Wikipedia (one of the official languages in Madagascar, the other being French), and Yoruba Wikipedia (one of the four official languages of Nigeria, also spoken in neighbouring Togo and Benin). These two projects are also the only "African" ones that are well over the 30,000 articles barrier.

If we consider the 11 official languages of South Africa, situations differ dramatically: given that English is, for obvious reasons, the most active version, the second-best version is Afrikaans Wikipedia, that is challenging its way up to the 25,000 articles milestone with Swahili Wikipedia and has the best growing rate, in the considered period, among all African language Wikipedias.

On the contrary, Northern Sotho, Southern Sotho (or Sesotho), Swati (or Swazi), Tsonga, Tswana, Venda, Xhosa, and Zulu Wikipedias occupy 8 of the 10 lower positions: the numbers of these projects are comprised between 141 (Xhosa) and 686 (Northern Sotho) articles, for a grand total of 2,843 articles (slightly more than Somali Wikipedia).

Southern Ndebele is the only official South African language that has no Wikipedia project: a test one is running since May 29, 2009[23] on

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22 Italian is the only language that is not official in any African country, even if some minorities in Libya and in the Horn of Africa still speak Italian.

23 http://incubator.wikimedia.org/wiki/Category:Wp/nr

Wikimedia Incubator,[24] but is highly unlikely to officially start at all, since until now only one test article has been written. Seychellois Creole (Seychelles) and Luba (Congo DR) too doesn't have a Wikipedia project, nor is present any test project in the Incubator.

Another aspect we took into consideration, for statistical purposes, is the growth of the number of articles over roughly one month: the top 6 projects are growing at a 2,000–articles rate at least, while the main African languages projects are growing at a far low rate (comprised between 30 and 378 articles), with the odd exception of Malagasy Wikipedia (that has decreased of one article in a month). The lower half of the table is basically not growing at all – with the extreme cases of Tsonga and Shona Wikipedia, which decreased respectively by two and three articles since the assessment started. Northern Sotho and Taqbaylit[25] are the only two exceptions, that anyway grow at the same pace of Amharic, Somali, or Yoruba Wikipedia (50–60 articles in a month).

General overview on the articles

Our analysis focused on 126 articles: 71 articles about general issues likely to be taught in schools (such as History, Geography, Art, Citizenship, Music, Religion, and so on), plus 55 articles about the African states and Italy.[26] Our aim was to control how many versions just had an article about that issues, still regardless (for the moment) of the quality. The statistics are the following.

ISO	Wikipedia in...	Articles	%
en	English	126	100.00%
fr	French	124	98.41%
pt	Portuguese	124	98.41%
es	Spanish	123	97.62%
it	Italian	123	97.62%
ar	Arabic	120	95.24%
af	Afrikaans	96	76.19%
sw	Swahili	86	68.25%
yo	Yoruba	85	67.46%
am	Amharic	81	64.29%
sn	Shona	76	60.32%

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24 "Wikimedia Incubator" (http://incubator.wikimedia.org/) is a meta-project where potential Wikimedia project wikis in new language versions can be arranged, written, and tested, before being officially hosted and backed by the Wikimedia Foundation.

25 Taqbaylit (or Kabyle) is the most spoken Berber dialect in Algeria, and the only one who has an active Wikipedia project.

26 You find the complete list of these articles, divided by topic, in chapter 7.

so	Somali	74	58.73%
wo	Wolof	67	53.17%
rw	Kinyarwanda	59	46.83%
nso	Northern Sotho	59	46.83%
ss	Swati (Swazi)	59	46.83%
zu	Zulu	58	46.03%
ts	Tsonga	53	42.06%
mg	Malagasy	46	36.51%
ig	Igbo	25	19.84%
ha	Hausa	24	19.05%
kab	Taqbaylit (Kabyle)	23	18.25%
st	Sesotho (Southern Sotho)	20	16.67%
ve	Venda	10	7.94%
tn	Tswana	6	4.76%
xh	Xhosa	5	3.97%

Though that may have been foreseen easily, these results confirm in a way what has been presented early: English, French, Italian, Spanish, Portuguese, and Arabic still retain the first six positions, and even if the order is slightly different, they still have almost all the articles we are referring at.

The situation begins to worsen when considering the African languages. What immediately comes to the eye is that Afrikaans has the most articles that we took consideration of (despite having around 14,000 and 5,500 articles less of Malagasy and Yoruba Wikipedia respectively), as well as the relatively good results of Shona Wikipedia (a language primarily spoken in Zimbabwe). Anyway, 13 out of 26 considered Wikipedias still have less than 50% of the articles.

It must be taken into account that, before the survey, a minimum result of 54 articles has been considered as acquired by all 26 projects taken into consideration – being 54 the number of fully recognized states in the African continent. This assumption proved to be wrong: 9 versions (Hausa, Igbo, Malagasy, Sesotho, Taqbaylit, Tsonga, Tswana, Venda, and Xhosa Wikipedia) fail even in reaching this limit: while Tsonga and Malagasy Wikipedia only lacks 1 and 8 articles respectively to the "minimum," the other 7 lack more than half of the articles.

These results are even more bleak, if we consider that mostly the articles about African countries may be considered, at best, "stubs." This is particularly true with versions with less than 2,500 articles, where is really common to find articles like "X is an African country," often with an outdated infobox on the right (when present).

There are, however, some exceptions: there are articles that have been fairly expanded (of course, compared to the average of the project), mostly articles about the country in which the considered language is spoken the most (i.e. "Senegal" for Wolof Wikipedia,

"Botswana" for Tswana Wikipedia, or "Rwanda" for Kinyarwanda Wikipedia).

Another thing that has been taken into consideration is the presence or the absence of the article about South Sudan: far from being a political issue, the article has been chosen to take into consideration how the communities are "reactive" to (relatively) new events, such as the birth of a new country. From our data, it results that 14 out of 26 projects (the most notable being Somali and Wolof Wikipedia) failed in creating the article about the new country, despite it has been independent since more than one year.

Some general considerations

We can draw some empirical considerations, based on what we saw. A Wikipedia community may be considered "active" by taking into consideration both the number of articles and of active users[27] that it expresses. Especially the latter condition affects the final outcome: a high number of article may be reached by using scripts that automatically insert so-called "stubs",[28] but with a small community it will be harder to expand those articles, with obvious reverberations on the overall quality of the project.

Most of the African languages suffer from both variables to be low, and it may be – empirically – affirmed that those projects are facing a vicious circle, in which there are few articles because there are few users, and there are few users because there are few articles. It is, anyway, far difficult to understand why participation is so low in those projects.

There are several facts that may explain it, e.g. the number of people who speak the language, the presence or the absence of linguistic institutions or academies, the possibility of accessing to the Internet to the people who speak that languages, the reason why they do not have access to the Internet (broadly speaking), and the possibility they have to learn and practise the language.

UNESCO says that 87% of the languages of instruction used in adult literacy and non-formal education programmes are African languages, and 70–75% of the languages of instruction used from nursery schools and kindergartens up to the early years of elementary schools are African. The percentages, though, fall dramatically to 25% in secondary education and to 5% in higher education.[29] This too should be taken into consideration in our empirical considerations.

A plausible additional hypothesis may be that African users are more motivated to contribute to English, French, Spanish, or Portuguese, because both they speak that language and the

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27 Wikimedia Foundation defines "active users" as those users "who have performed an action in the last 30 days".

28 A "stub" is an article containing only one or a few sentences of text that, although providing some useful information, is too short to provide encyclopedic coverage of a subject, and that is capable of expansion.

29 Adama Ouane and Christine Glanz, "Why and how Africa should invest in African languages and multilingual education", UNESCO, 2010, p. 9.

community is bigger and more active than the one referring to their mother-tongue. Anyway, it is really hard to confirm such hypothesis, given that is really difficult to identify the place of origin of a user.[30]

Looking at the history of the main communities, there is a possible solution to tackle the lack of participation: among the very first articles that were created on the Italian Wikipedia, there were the automatically-inserted articles about the 8,100 municipalities of Italy. The presence of an article that "anyone can edit" about their municipality convinced many users to stay, and later proved to be one of the keys of success for the Italian community.

The replication of this pattern has been barred until now by the impossibility of managing the data without a community: data can easily become outdated, and with no user who watch the recent changes, "vandalisms" and spam-bots can easily takeover the project.

A solution to this comes from Wikidata, a new Wikimedia Foundation project for creating a free database, officially launched on October 30, 2012.[31] The new project will centralise access and management of structured data, such as links between Wikipedia projects (called "interwikis") and statistical information, along with their sources. All languages for which there are Wikimedia projects will be taken into consideration.

At the moment, only links between Wikipedia projects can be included. The possibility to add core data about any subject (i.e. for municipalities, number of inhabitants, area extension, ZIP code, coordinates...) will be available in Spring 2013, since the developing team is still working on the technical features behind this. The idea of the developers is to create an entry for each article that every Wikipedia has (and for each article that Wikipedia will have) that can contain its main data.

Wikidata will thus make such data automatically available to every single Wikimedia project,[32] as well as the sources from which these data are harvested. This means that in the future it will be extremely easy to create new "stubs" about, for example, Botswana municipalities in Tswana language (the de facto official language of the State, along with de jure official English), without the "opportunity cost" given by the need of watching the integrity of these data, since this is something that will be taken care of by the Wikidata community.

In other words, it will be possible to replicate the pattern used by Italian Wikipedia without its disadvantages. This does not mean the

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30 It is possible for users to put on their user-page a small box that declares their nationality, but this is a rather uncommon use, and is absolutely not reliable method of determining the origin of users. More, as already stated before, a contribution is more relevant than the contributor: this principle is so deeply internalised by the community that trying to step back in any way from this assumption is useless, rather than counter-productive.

31 http://www.wikidata.org/wiki/Wikidata:Main_Page

32 http://meta.wikimedia.org/wiki/List_of_Wikimedia_projects_by_size

pattern will be followed – only that it may. Still, article bootstrapping is one of the possibilities that can be pursued.

An introduction to Wikipedia guidelines for writing articles

Until now, the analysis focused on quantitative aspects, but quality has always been considered one of the main issues of Wikipedia. Because of this, it has developed various guidelines on contents and style, that became increasingly complex and detailed over time. Most of them are now collected in the "Wikipedia Manual of Style" (or simply the "Manual of Style", MoS),[33] a style guide for all Wikipedia articles.

Every article should have a fixed structure too – even if this statement has different meanings: in fact, there are different structures for articles to follow, depending on the subject. Anyway, there are some principles that are common to all contents, and that are used by the community to define which articles are the best written, through a community procedure.

According to the relevant guideline,[34] the best articles should meet the policies regarding content and, in addition, have to be well-written ("its prose is engaging, even brilliant, and of a professional standard"), comprehensive ("it neglects no major facts or details and places the subject in context"), well-researched ("it is a thorough and representative survey of the relevant literature," with "high-quality reliable sources" that support "in-line citations where appropriate"), neutral ("it presents views fairly and without bias"), and stable ("its content does not change significantly from day to day").

More, they have to have "a concise lead section that summarizes the topic and prepares the reader for the detail in the subsequent sections," and an appropriate structure with "a substantial but not overwhelming table of contents." The article's length should be appropriate so that it "stays focused on the main topic without going into unnecessary detail" and be illustrated with appropriate and sufficient media.

Of course, such a result cannot be reached in a short time, but it is the outcome of a progressive work over time of more users, everyone giving his/her small or big contribution – and contrarily to what common sense may suggest, it is often achieved.

Quality assessment of articles on English, French, and Italian Wikipedia

Since conducting a complete quality assessment on all projects would have been very complicated, we limited it to the three main projects considered: English, French, and Italian Wikipedia. The assessment has been done considering, first of all, the judgements expressed within local "Quality Assessment projects," with several

33 http://en.wikipedia.org/wiki/Wikipedia:Manual_of_Style
34 http://en.wikipedia.org/wiki/Wikipedia:Featured_article_criteria

adjustments made by the reviewer.

These projects were born with the idea of providing an informal assessment of the Wikipedia articles and of their adherence to the guidelines. It has to be noted that, since every Quality Assessment projects has developed an evaluation system on its own, it has been necessary to balance the different systems, as well as to make several adjustments of the assessment itself, in order to have an acceptable overall judgement. What follows is a comparison between these systems.

Rating	English Wikipedia	French Wikipedia	Italian Wikipedia
A+	Featured article	Featured article	Featured article
A	Good article / A-class	Good article / A-class	Good article / A-class
B	B-class	B-class	B-class
C	C-class	B-class / Bon début-class	C-class
D	Start-class / Stub	Bon début-class / Stub	D-class / Stub

It also should be taken into consideration that "featured article"[35] and "good article"[36] ratings are assigned through a community procedure, which differs in its details from version to version, but that can be considered fairly homogeneous.

Another aspect that we took into consideration is the participation of the community to the Quality assessment project: while the English and French projects appear more participated (even if is not so rare to find dated assessments), the Italian project is far less participated, thus less reliable in determining the overall quality of an article.[37] Also for this reason, Italian assessments have been heavily re–assessed.

The following table gives an impression about the overall quality of the 127 articles on which the analysis focused on.

ISO	Wikipedia in...	A+	A	B	C	D	Tot.
en	English	7	10	44	45	21	127
fr	French	4	2	29	56	34	125
it	Italian	1	1	4	54	63	123

What immediately stands out is the disparity of quality between the three projects: English Wikipedia is on average qualitatively better than the other two versions, with 17 of the 127 articles taken into

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35 http://en.wikipedia.org/wiki/Wikipedia:Featured_articles

36 http://en.wikipedia.org/wiki/Wikipedia:Good_articles

37 A possible explanation is the relative "difficulty" in expressing the judgement, made of four different assessments on article's accuracy, style, sources, and media. All these judgements concur to make the final (and automatically determined) assessment. While this should have helped in giving a better overall rating – the other project only have one vote that covers basically every aspect of the article – it unfortunately turned to be an "instruction creep", that turned many users away.

consideration that have been considered "featured articles" or "good articles" by its community. In comparison, only 6 French articles and 2 Italian articles have been judged the same.

Always on average, the Italian version proved to be the relatively worst version out of the three, mostly because of its tendency of lacking punctual sources in its articles – while citing authoritative sources is one of the three main guidelines of Wikipedia – that caused a strong downgrading of most articles.

Especially the rating of the articles on African states oscillate between C and D, with no article that has been assessed with a mere B-grade. On the contrary, corresponding one on the English and the French version are on average qualitatively better: the former has 4 featured articles and 5 good articles about African countries, even if less than half deserved a C-grade; the latter has 2 featured articles, but about two thirds of the articles were assessed with a C- or D-grade.

A well-written article in all three versions, that has also undoubtedly a great relevance for African audiences, is the one about the Acquired Immunodeficiency Syndrome (HIV/AIDS) – even if there is room for some improvement, since on every version there are some paragraphs which can be considered better than their equivalents in other languages.

Apart from that, it is difficult to find other articles which can be assessed the same on all of the three projects. Though there are single examples of well-written articles that can be used as touchstones, such as "Cinéma" on the French version, or "Planet" on the English version, the overall impression is that Wikipedia gives better performances on articles on specific subjects, than in general, introductory ones on a particular subject. This pattern appears to be generally found in all versions.

Conclusion

At the end of this assessment, it can be fairly stated that Wikipedia can constitute a good base for this educational project, for what it may concern its English and French versions. There is enough room to correct some aspects, some of which will be pointed out below.

In general, articles are written with a precise intention: to provide a sufficient and acceptable quantity of information for a simple research on the subject. Of course, their quality is lower than a paper or a specialistic research, and still they have to be verified independently and eventually "adapted" to be re-used properly. Still, the possibility itself of having such a free (and freely modifiable) base is definitely a huge leap forward, compared to what was available just 12 years ago.

Another problem (already recognized by WMF, but harder to be tackled) is the so-called "Western bias." In essence, since the majority of users and sources come from developed countries, this turns into an over-representation of Western-based subjects on Wikipedia, and an under-representation of subjects that deal with the so-called "Global South".

Since a couple of years, this has become one of the main objectives of WMF and projects aimed at reducing that bias are already ongoing. For sure, a project like this, which aims to determine the needs of schools in Africa and that may finally allow access to the wealth of books, documents and general knowledge of Africa, can significantly contribute to this.

 For what it may concern the Italian version (or better, the articles taken into consideration in this assessment), it has a lower grade of quality compared to its English and French counterparts, as already stated. Practically speaking, this means that the considered Italian articles should be first qualitatively enhanced at a point, that it becomes frankly impossible to consider them as a viable source of knowledge, at least for the first version of the project. It could be maybe considered for a second phase, given that such quality enhancement has been performed.

About the other languages, the general situation should be considered – at the most – similar to the Italian version of Wikipedia. Especially for medium and small communities, it is strongly suggested to wait until Wikidata has deployed its full potential (which can be realistically scheduled for mid–2013), in order to undertake the "Italian strategy," suggested within the feasibility study.

3. Primary School

In 2000, 189 nations made a promise to free people from extreme poverty and multiple deprivations. This pledge turned into the eight Millennium Development Goals (MDG), to be achieved by 2015[38]. The goal n. 2 and 3 specifically concerns primary education. They respectively aim to "ensure that, by [2015], children everywhere, boys and girls alike, will be able to complete a full course of primary schooling and that girls and boys will have equal access to all levels of education" and to "Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015[39].

MDG interacts with the "Education for All" (EFA) program led by UNESCO, for the achievement of the following goals[40]:

Goal 1: expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children.

Goal 2: ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to, and complete, free and compulsory primary education of good quality.

Goal 3: ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life–skills programmes.

Goal 4: achieving a 50 per cent improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults.

Goal 5: eliminating gender disparities in primary and secondary education by 2005, and achieving gender equality in education by 2015, with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality.

Goal 6: improving all aspects of the quality of education and ensuring excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.

According to the MDG Report published in 2012[41], there have been significant improvement since the resolution: "Enrolment rates of children of primary school age increased markedly in sub–Saharan Africa, from 58 to 76 per cent between 1999 and 2010. Many

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38 http://www.undp.org/content/undp/en/home/mdgoverview.html

39 "United Nations Millennium Declaration" Resolution 55/2 adopted by the General Assembly [http://www.un.org/millennium/declaration/ares552e.pdf]

40 [http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-all/efa-goals/]

41 [http://www.undp.org/content/undp/en/home/librarypage/mdg/the-millennium-development-goals-report-2012/]

countries in that region succeeded in reducing their relatively high out-of-school rates even as their primary school age populations were growing". Yet, millennium goal related to primary education seems to be hardly fulfilled within 2015: as the Report continues, "Progress on primary school enrolment has slowed since 2004, even as countries with the toughest challenges have made large strides and illiteracy still holds back more than 120 million young people. [...] Out-of-school youth tend to have limited opportunities to develop or maintain literacy skills, restricting their options in life and compounding the disadvantages they face later on. In 2010, there were still 122 million people between 15 and 24 years of age —74 million women and 48 million men—who were unable to read and write a short, simple statement about their everyday life. The great majority of these young adults live in Southern Asia (62 million) and sub-Saharan Africa (45 million). In relative terms, literacy rates among the youth population are lowest in sub-Saharan Africa (72 per cent) and Oceania (76 per cent)".

The 2012 EFA Global Monitoring Report[42] states that "on current trends, the goal of universal primary education (UPE) will be missed by a large margin. […] The number of primary school age children out of school has fallen from 108 million to 61 million since 1999, but three quarters of this reduction was achieved between 1999 and 2004. Between 2008 and 2010 progress stalled altogether" [Fig. 1].

Fig. 1 [Source: © EFA Report 2012]

Number of out-of-school children of primary school age, 1999–2010
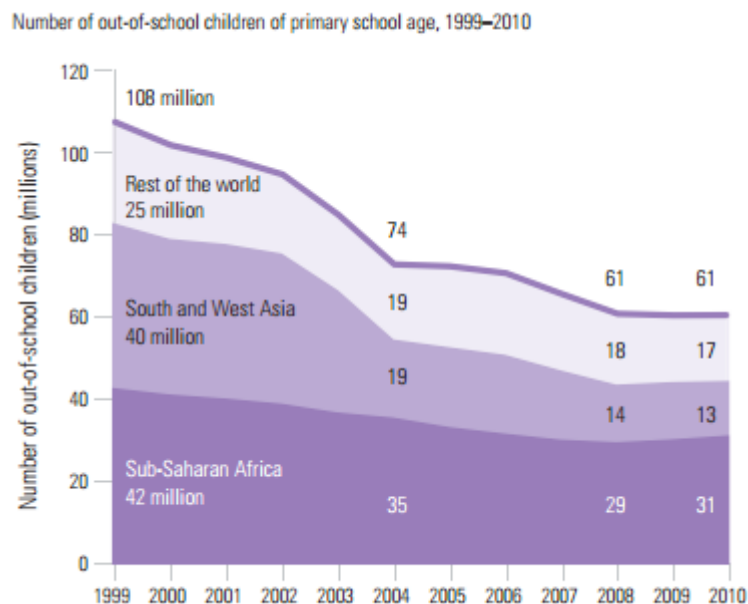
"Abolishing formal school fees – the report continues – has been a fundamental step towards realizing UPE. But is also important for

42 [http://www.efareport.unesco.org/] We need to take into account that statistics above refer to countries with data: this constitutes a relevant bias and there are wide dark areas where phenomena can not be accounted for.

governments to take complementary measures, such as grants for schools and social protection measures. Steps also need to be taken to ensure that the ability of richer households to spend more on private schooling and private tuition does not lead to widening of inequality and   The African education systems are plagued by insufficient numbers of trained teachers".

As for young people and adult education, the report takes into consideration the role of secondary schooling in developing skills needed for work and life. Although the global increase, the gross school enrollments ratio stalls at 52 per cent since 2007 in low income countries. In particular, "Sub–Saharan Africa has the worlds lowest total secondary enrolment ratio, at 40 per cent in 2010".

As for illiteracy, the 75 per cent of the 775 millions of adults that cannot read nor write are concentrated in ten countries (mostly in Africa and India). The global adult literacy rate has been increased during last years[43], but only three countries out of 43 will reach the target of reducing illiteracy by 50 per cent by 2015. In addition, according statistics, six year of school are insufficient to build literacy skills.

The efforts for gender equality has been insufficient. 11 countries (Chad, Pakistan, Côte d'Ivoire, Niger, Cameroon, Congo, among others) still face extreme gender disparity, whereas in 17 countries (12 in Sub–Saharan Africa) women have severe disadvantage in work and education respect to men.

The improvement of quality of education and of learning outcomes involve particularly the population of of primary school age that does not reach the fourth grade and fails to learn the basics. However, the process is affected by strong lack of trained teachers (in 2010 in Sub–Saharan Africa, the pupil/teacher ratio even rose from 42:1 to 43:1). EFA report estimates that 112 countries need to hire a total of 5.4 million teachers by 2015.

In order to fulfill and improve MDG and EFA goals United Nations development program supported "One Laptop per Child" project (OLPC)[44] started in 2005 by OPLC Foundation. The project, probably the most famous and funded has the purpose to create affordable educational devices for use in the developing world.

Indeed, several NGOs are active and projects ongoing in African countries. Specific challenges for projects based on digital education involve the ability to cope with infrastructural issues and to interact with network providers. In addition, the project needs to connect with the professional community of teachers and educators, often overburdened and scarcely trained, as well as to insist in the adaptable, practical and cross–disciplinary character of learning contents. Such project must also face linguistic issues, due to the conflicts and interaction among local, national and colonial languages that jeopardize the possibility to have a language acting as a "medium of instruction". Finally, special attention should be

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43 See Wikipedia Article on Countries by literacy rate [http://
   en.wikipedia.org/wiki/List_of_countries_by_literacy_rate]

44 [http://one.laptop.org/]

paid to to the new "technological pidgins" that are emerging from digital interactions, leveraging by the massive use of mobile phones and by the increasing use of the Internet.

4. Italy

History

The evolution of Italian education systems since 1861 has been characterized by a centralized structure, with the purpose to build national identity after the reunification. This phase starts with the foundation of Italian Kingdom (1861) and ends with the fall of fascist regime.

The Italian school has been founded by Casati's Law in 1859, that regulated higher education, lower education, technical education and primary education. The main features of the regulation consists in a strongly centralized administration and the separation between "humanities" and "professional education". In 1877, the Coppino's Law sets the compulsory education until primary school, but remains largely unattended. In 1923, Giovanni Gentile, Minister of Education during fascist regime, changes the whole structure of Italian school. The Gentile's reform introduces pre–primary school, the 5 years primary school, the 3 years lower secondary school, the upper secondary school and the higher education.

In 1948, being the Republican Constitution approved, a process of decentralization begins that distributes jurisdiction among the State, Regions, Provinces, Municipalities and school institutes. The latter achieve wide autonomy in terms of administrative and educational issues. The transformation involves also the extension of compulsory education: the age range for which school attendance is required increase from 8 (1948) to 16 years (2007), while the right for education and training is set till the age of 18 years (Law 53/2003). From an organizational point of view, there is a shift from State monopoly of education to a public–private distributed school system, regulated by the Law n.62/2000. In addition, there is a significant step toward the idea of the "right for education". On one hand the right for education is intended as the right for everybody, whether rich, poor or disabled to attain higher education; on the other, it becomes a duty for schools to guarantee educational achievement for everybody.

Legislation[45]

The education system in Italy is organised according to the subsidiary principle and autonomy of schools. The State has exclusive competence on general issues on education, on minimum standards to be guaranteed throughout the country and on the fundamental principles that Regions should comply with within their competences. Compulsory education lasts for 10 years (from 6 to 16 years of age). It covers 5 years of primary school, 3 years of lower secondary school and the first two years of upper secondary school. Compulsory education can be accomplished also by attending three and four-year courses offered within the regional vocational education and training system. The upper secondary level of education has a duration of 5 years and it is offered in both general and vocational pathways. Primary school is compulsory, has an overall length of 5 years and is attended by pupils aged 6 to 11. Together with compulsory lower secondary school, it makes up the first cycle of education which lasts eight years altogether. Primary and lower secondary schools are two different education levels, each with its own specificities, even though they are parts of one only school cycle. Primary education is subdivided, only for didactic purposes, into a first year linked up to the pre-primary school, and two two-year periods.

The Italian school legislation has its foundations in the Constitution of the Italian Republic of 1948. Articles 30, 33, 34 and 38 in particular lay down the principles on which legislation must be based. Basic principles which cannot be waived include the freedom of education, the duty of the state to provide a network of educational establishments of every type and level and open to everyone with no discrimination of any type, the right of the universities, academies and highly cultural institutions to lay down independently their own regulations; the right of private individuals to establish schools and educational establishments at no cost to the State, the right/duty of parents to provide education for their children even if born outside the bonds of matrimony. If parents cannot do so, measures must be taken by law to help them to carry out their duties. Appropriate measures must be taken to enable capable and deserving students to enter higher levels of education even if they lack financial resources. The education of citizens also includes the education and vocational training of disabled citizens.

The fundamental principles of the Constitution were kept as a basis for all subsequent legislation, particularly with regard to compulsory education, teacher training, student assessment, the integration of disabled students, and vocational training.

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45 Source: Eurydice [https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Italy:Overview]

As for school education, legislative framework is quite complex. Here below, a short list of the basic legislation:

- Decree no. 275 of 8 March 1999 providing schools with didactic, organizational and research autonomy;
- Law no. 62 of 10 March 2000 concerning equality between public and private education;
- Constitutional Law no. 3 of 18 October 2001 which modified the subdivision of the responsibilities, also as far as education is concerned, between State and Regions;
- Law of 28 March no. 53 for the reform of the education and training system. The law has been partially amended;
- Law No. 296 of 27 December 2006 (Financial law 2007) which establishes, among the others, the extension of compulsory education to ten years (up to 16 years of age), to be fulfilled by students either at school or through three-year vocational courses falling under the responsibility of the Regions; dispositions for its implementation have been issued through Ministerial Decree no. 139 of 22 August 2007;
- Law no. 133 of 6 August 2008 containing measures to reduce public costs also in the field of education. It provides for a series of interventions, among which the re-organisation of the school system (DPR 81/2009), the revision of the first cycle of education and of timetables (DPR 89/2009), the reform of the second cycle of education (DPR 87/2010, DPR 88/2010, DPR 89/2010) and the inclusion of Regional three-year vocational training courses in the education system, for the fulfilment of compulsory education;
- Law no. 169 of 20 October 2008 providing for new criteria for the assessment and progression of students (DPR 122/2009)
- Ministerial Decree no. 249 of 10 September 2010 on initial teacher training.

As for Regional three and four-year education and training courses (IeFP), regulations on the extension of compulsory education (decree no. 139/2007) also established the general learning outcomes for students attending the last two years of compulsory education either in the State pathways or in the Regional vocational courses. In addition, the inter-ministerial decree of 29 November 2007 outlines the quality criteria to be applied by the formative agencies providing regional courses. Finally. the Guidelines of the Ministry of education, university and research (MIUR) and of the Conference of the Regions for the implementation of compulsory education at schools and formative agencies, have provided indications to support the acquisition of key competencies in the first two years of upper secondary school, regardless of the type of pathway taken.

Moreover, the collaboration between State, Regions and Provinces has produced a series of documents enhancing the flexibility of the education system, the definition of formative objectives and the final and intermediate certifications. In particular, the definition of

formative standards for the acquirement of basic competences in the three-year pathways (Agreement of January 2004) and the definition of national minimum standard of technical and vocational competences for 21 professional profiles (April 2006). Finally, national final and intermediate certifications have been introduced to foster switches between the education system and the IeFP (October 2004).

The Higher technical education and training (IFTS) courses have been instituted through Law of 17 May 1999, no. 144, and are regulated through Inter-ministerial decree of 31 October 2000, no. 436. The Financial law of 2007 provides for the reorganisation of the IFTS system, in view of strengthening the high level vocational training and improving the technical-scientific sector. The guidelines for the reorganisation of the IFTS system have been issued through Decree of the President of the Council of Ministers on 25 January 2008, which has defined the standards, access requirements and certifications of the training pathways.

As for higher education, the main reference legislation is the Decree no. 509 of 3 November 1999, which has increased the autonomy of universities and defined the qualifications issued by universities according to the Bologna Process and Law no. 508 of 21 December 1999 establishing the sector of the Higher level arts and music education (Afam). Recently, the law no. 240 of 30 December 2010 has introduced a series of provisions on the re-organization of universities, on the status of the academic staff and on the quality and efficiency of the university system.

Statistics

Italian school population of all school grades is distributed according to the table below[46]:

Table 1: Italian School population [Source: MIUR]

2009/2010	TOTAL	State Schools	Private Schools	
			Public Parified	Private parified
Pre-Primary School				
Schools	24.221	13.553	1.841	8.094
Students	1.680.987	993.266	153.031	501.668
Primary School				
Schools	17.845	16.314	23	1.488
Students	2.822.146	2.627.671	2.729	190.493
Lower Secondary School				
Schools	7.924	7.248	0	670
Students	1.777.834	1.704.274	0	73.310
Upper Secondary School				
Schools	6.799	5.230	40	1.514
Students	2.680.667	2.527.188	8.244	144.730
Total				
Schools	56.789	42.345	1.904	11.766
Students	8.961.634	7.852.359	164.004	910.201

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46 Source: MIUR, La scuola in cifre 2009-2010, table 1.2.1

School grades

School grades of Italian education system are currently organized as following[47]:

Table 2: Italian School Grades [Source: Wikipedia]

2	4	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Pre-primary education			Primary education					Secondary education									Higher education			
(I)	(II)	(III)	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	I	II		III	IV	V
Pre-primary school			Primary school					Lower secondary school			Upper secondary school					Universities, Poitecnici, AFAM, IFTS				

Primary School

During last decades, innovations in the structure of primary school and curricula start with the Law n. 820/1971, that marks the fundamental step from the idea of school as based on "reading, writing and counting"'. The introduction of special subjects (music, arts, theater, ecc.), the full-time extension of school hours, the increased number of teachers for the same classroom, enact the transformation of primary education towards wider aims of cultural and personal achievement for students. The Law n. 477/1973 and annexes, then, allow parents to take part to the management of school. One of the most high cultural and social achievement of this new deal for primary education and for the whole Italian education system comes with the approval of Law n. 517/1977: it involves curricula, evaluation, team-working of teachers, the coordination of different grades, and the inclusion of disabled students in standard grades of education, consequently suppressing special grades. This process of innovation follows through the D.P.R n. 104/1985 (with the approval of new curricula for primary school) and through the Law 148/1990, that reforms the school system clearing the ground for the full accomplishment of new curricula.

As stated by [48] the D.P.R. 104/1985, primary school aims to the education of the person and the citizen coherently with constitutional principles. Primary education acts for comprehension and cooperation with other countries people, inspired by the Universal Declaration of Human Rights and by the Convention on the Rights of the Child. Primary school constitutes thus the ground for the development of personality: it aims to enact literacy and to offer an essential contribution to understand and take part to the complex reality where everybody lives in, so as overcoming the social and economic obstacles to freedom and equality among citizens.

The 1985 act represents an important step forward in school regulation, since disciplines start to be considered as means to achieve educational aims rather than simple sets of notions. The

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47 Source: Wikipedia [http://it.wikipedia.org/wiki/Istruzione_in_Italia]

48 D.P.R. 12-02-1985, n. 104 [http://www.edscuola.it/archivio/norme/ programmi/elementare.html].

education process becomes thus a project that needs to be developed step-by-step from a pre-disciplinary setting to the rising of disciplines and subjects progressively differentiated. Primary school programs indicate skills that students must achieve and contain few suggestions on cultural contents. In fact, according the regulation, the choice of contents and of specific educational curricula is up to teachers, that change and adapt them to different school settings: their professional expertise is thus redefined with an extended autonomy and responsibility in planning and managing teaching activity. The focus on skills provided by the 1985 act makes primary school programs, curricula and disciplines more situated and open to future transformation of society, building the ground for the following reforms, whose most recent date in 2004[49], 2007[50] and 2008[51].

BOX 2 [Source: Eurydice][52]

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49 D.Lgs 19-02-2004, n. 59 [http://istruzione.umbria.it/allegati/riforma/all_b.pdf].

50 D.m. del 31 luglio 2007 [http://www.indire.it/indicazioni/templates/monitoraggio/dir_310707.pdf]; A further reform process has been initiated in 2012 and is still ongoing (C.M. n. 49 31-05-2012 – MIURAOODG prot.n. 3377) [http://www.istruzione.it/web/istruzione/cm49_12]

51 Law 133/2008; law 169/2008; d.l. 10-11-2008 n. 180

52 [https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Italy:Teaching_and_Learning_in_ Primary_Education] "Starting from school year 2009/2010 and up to school year 2011/2012, schools will apply the National Guidelines of 2004, as updated through the Guidelines for the Curriculum of 2007. During this three-year period, the activities carried out by the schools will be monitored by the National Agency for the Development of School Autonomy (Ansas) and by the National Institute for the Evaluation of the Education and Training System (Invalsi). The outcomes are likely to be used to amend the National Guidelines of 2004 (DPR 89/2009)".

The National Guidelines of 2004 establish the general objectives of th
educational process in primary school (e.g. to exploit of the child's experience
corporeity as a value, to express ideas and values of the experience, to practic
personal commitment and social solidarity) and the specific learning objective
for each subject. Such specific learning objectives indicate, for each subjec
and for each internal cycle of primary school (first grade; first two-year perioc
second two-year period), knowledge and abilities that each pupil will turn int
personal competencies throughout the his/her learning path. The Indicazio
nazionali of 2004 also include the Educational, cultural and vocational profil
(Pecup), which represents what a 14-year old pupil should know and should b
able to do at the end of the first cycle of education (the first cycle of educatio
is made up of the primary and lower secondary levels). It is expected to be th
benchmark for the educational and teaching activities of teacher
The Guidelines of 2007 differ from those of 2004 give greater importance t
curricula instead of to personalised study programmes and set goals for th
development of competences to be used as reference for teaching activitie
Moreover, they focus on general instead of analytical learning objectives i
order to give more importance to school autonomy and to the professionalis
of teachers in the planning of the curriculum.

In particular, the 2007 reform updates the indication for curricula to the phenomena of globalization, articulating different disciplines in three thematic areas and setting educational goals at the end of each learning cycle. In addition, this reform explicitly adopts the recommendations of European Union in terms of development of "key competences necessary for personal fulfilment, active citizenship, social cohesion and employability in a knowledge society"[53]: 1) communication in the mother tongue; 2) communication in foreign languages; 3) mathematical competence and basic competences in science and technology; 4) digital competence; 5) learning to learn; 6) social and civic competences; 7) sense of initiative and entrepreneurship; 8) cultural awareness and expression.

The eight "key competences" offer an ideal perspective to reflect on innovation in primary school and on the digitalization of society. Whereas the national indication for personalized curricula of 2004 consider Internet browsing and digital contents as a single skill within informatics and technology disciplines, the 2007 reform conceives technology both as object of study and a set of knowledges to design of technical devices, as well as a new form of control and management of information. In this latter meaning, technology becomes a transdisciplinary and cultural tool that introduces new potential in fulfilment, communication and control of any human work, included teaching and learning of any disciplines. In particular, ICT allow different representations of knowledge, as well as the access to "virtual reality" and simulation environment that make possible new models of experience.

53 Recommendation of the european parliament and of the council on key competences for lifelong learning (2006/962/EC).

Achieving digital competence is thus knowing how to use ICT for work, leisure and communication with both familiarity and critical attitude. Digital competence entails basic skills in ICT, such as to retrieve, evaluate, keep, produce, present and share information, as well as to communicate and participate to social and collaborative network through the Internet.

Current government's plans for digital education[54] involve the introduction of touch-based interactive whiteboard (L.I.M.[55]) and digital textbooks in all Italian schools. The former, that require connection with a PC, consists in an interactive display that allows to draw and write, to show presentations as well as to play and assemble digital contents, creating multimedia hyperlinks. The latter will be either exclusively digital or integrated with paper versions, and will be adopted starting from september 2013. In addition, since 2012, remote areas where school have not enough students to start may benefit of the opportunity to create digital school centers to ensure access for student through e-learning, in agreement with Ministry of Education.

As far as lifelong learning is concerned, Ministry of Education recently introduced a general regulation for the gradual reform of learning centres and evening class for adults[56]. Centres represent an autonomous educational entity, whose services are organized in territorial networks (basically on provincial basis) following the national guidelines in terms of knowledges, skill and competencies. They are open to adults, including non-Italian citizens, that did not attain first-cycle education nor achieve the mandatory school license. They are also open to people that have first cycle license and intend to achieve secondary school diploma. The first level education for adults is finalized: a) to the achievement of the first cycle of education license (primary + lower secondary school); b) to obtain the certification documenting the achievement of basic competencies related to the common subjects in the first two years of technical and professional institutes. The second level of education aims to the achievement of the professional, technical and art diploma. Finally, a special path of education is dedicated to literacy and learning on Italian language.

Grading Scale

In Italian primary schools children are constantly assessed throughout the school year by their teachers, and report cards are issued to parents at varying intervals. The scores for individual assignments and tests are recorded for each student in a grade book. Grading criteria are based on national guidelines, and marks

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54 Decreto "Crescita 2.0" http://www.governo.it/Presidente/Comunicati/testo_int.asp?d=69362

55 On the role of Interactive whiteboards and digital devices for innovation in Italian school see Crestoni, L. (2009) (ed), Il frutto della conoscenza, Trento, PAT. [http://www.didapat.net/frutto_della_conoscenza.pdf].

56 DPR 4.10.2012: Centri d'istruzione per gli adulti [http://www.istruzione.it/alfresco/d/d/workspace/SpacesStore/03bd8859-7f96-4ffc-b1c5-218efb3ac223/decreto_cpia.pdf]

and are expressed in numbers ("0" through "10").

Standardized testing[57]

Students' learning outcomes are evaluated also through external assessment carried out by the INVALSI[58] (National Institute for the Evaluation of the Education System). INVALSI test consist in a written exam on both Italian Language and Mathematics with the purpose to evaluate learning levels of each school grade, including primary school.

Education of students with special needs[59]

Integration and support measures for special needs are addressed to students with disabilities as defined in the frame law n. 104/1992. According to this definition, students with disabilities are those with physic, psychic or sensory disabilities, either stable or in progressive, causing learning and working difficulties that can produce social detriment and alienation.

Integration of Students with special needs is responsibility of the whole school, that selects support teachers who have received a specific initial training. Support teachers are part of the team of regular teachers of the classes and participate in all the activities concerning planning and assessment, taking into account that, if a student is assigned to more than one support teachers, they all give one only mark. Support teachers are not only skilled to teach to disabled students, but also resources allocated to the school to facilitate the integration.

Teachers in charge exclusively of guidance activities are not foreseen in lower and upper secondary schools; such activities are carried out according to the planning of each school, also in collaboration with the local authorities and specialized external agencies, through additional ad-hoc tasks assigned to the class teachers.

Schools, in order to effectively carry out integration, have to be adapted in their structure, with the removal of all architectural barriers, and the possibility to use of all facilities in the most functional manner suited to the needs of disabled students.

The technical and teaching equipment should be adapted to the needs of the students, in relation to their needs and schools can stipulate agreements with specialised centres in pedagogical consultation, production or adaptation of specific teaching materials.

Schools, also through the Personalised Education Plan, should activate individualised and personalised teaching processes also

57 [https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/
   Italy:Assessment_in_Primary_Education]

58 [http://www.invalsi.it/]

59 Source: Eurydice [https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/
   index.php/
   Italy:Education_Staff_Responsible_for_Guidance_in_Early_Childhood_and
   _School_Education]

allowing the use of compensative tools and exempting students from some activities. In addition, in order to facilitate the education process of students with learning disability, teachers and school managers at all levels will receive a specific in-service training. Training activities focus on the early identification of learning disability risk, teaching measures to be adopted both with the student and with the group, assessment procedures and guidance. The specific training plans are organised by the Ministry and by schools, according to their autonomy. Training activities may involve also universities, research institutes, scientific entities, associations and local health authorities.

Education for immigrants

A further challenge for primary education in Italy is represented by global migration phenomena. Since last decade, the number of non-Italian citizens' enrolments in schools has been remarkably rising, although growth slowing down during last 3 years. [Fig.2].

Fig. 2: trend of non-Italian citizens per school grade (2001/02 to 2010/11)[60]
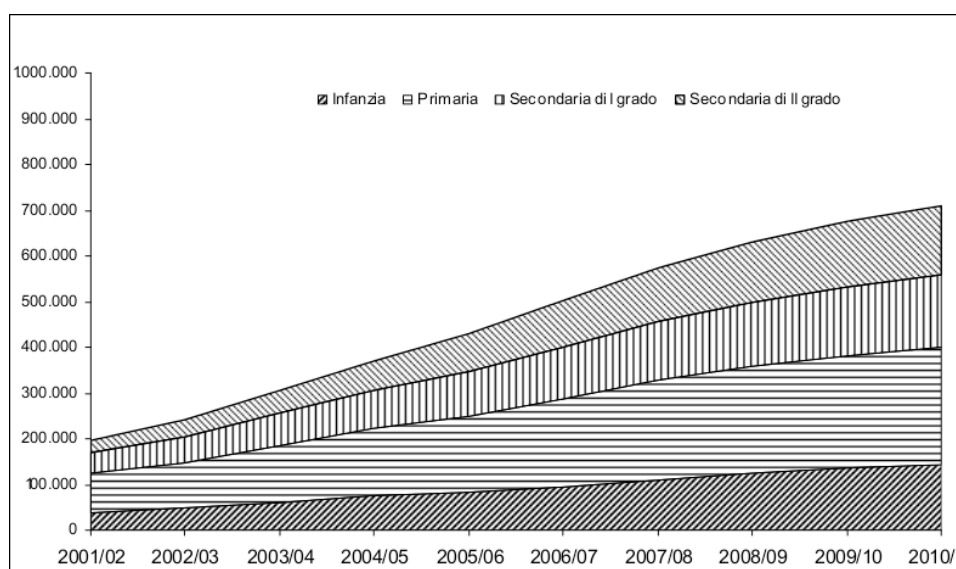
Currently, Italian primary school has 2,8 million of students enrolled with the highest percentage of non-Italian citizens (9 per cent), most represented countries being from Europe and Africa [Tab.1]. Rom and Sinti population enrolled in Italian primary school is about 6700 people (54 per cent of Rom/Sinti students). Whereas Ukrainian and Moldavian students are remarkably present also in high schools, students from Morocco, Tunisia, Egypt and Ghana, as well as Rom/Sinti students, show low rates in keeping up further education. The percentage of non-Italian citizens attending Italian schools that are born in Italy from immigrant parents is generally increasing (42,1 per cent).

Table n.3: non-Italian citizens enrolled in primary school – main countries of origin

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60 Source: Quaderni Ismu n. 4/2011 [http://www.ismu.org/index.php?page=85#]

COUNTRY	Percentage of total non-Italian citizens enrolled	STATE SCHOOLS	LEGALLY RECOGNISED NONSTATE SCHOOLS	"PARITARIA"	"NON PARITARIA"
Romania	18.8	40342	484	653	3
Morocco	16.0	34166	938	115	0
Albania	14.9	31521	906	416	1
Republic of China	4.9	10585	84	270	3
Serbian Republic	3.2	6636	403	35	9
Tunisia	3.2	6772	274	33	0
Filippines	2.8	5987	16	323	1
Ecuador	2.4	5226	38	137	0
Moldova	1.8	3992	116	55	1
Peru	1.8	3897	55	210	2
Poland	1.8	3913	87	156	0
Pakistan	1.8	3673	335	6	4
Egypt	1.7	3839	8	67	1
Bangladesh	1.7	3755	87	16	0
Ucraine	1.7	3549	66	136	0
Brazil	1.4	3098	57	84	5
Ghana	1.4	3075	21	56	1
Bosnia-Erzegovina	1.1	2363	137	18	0

Adult education

Phenomena related to illiteracy and lack of basic skills in writing, reading and calculation significantly affect the so called developed countries, as well, especially considering the phenomena in a broader age range. The research on Adult Literacy and Life skills Survey (ALL)[62] accounted the presence of relevant areas of illiteracy or semi–literacy. The survey has been conducted in 2003 to measure the literacy and numeracy skills of a nationally representative sample of 16– to 65–year olds from six participating countries (Bermuda, Canada, Italy, Norway, Switzerland, and the United States). Results showed that among people that score full and excellent prose, document, numeracy and problem solving skills we can find the 64 per cent of Norwegian, 60 per cent of Canadian, 50 per cent of United States and Switzerland citizens. Consequently, for instance, 36 per cent and 40 per cent of Norwegian and Canadian citizens are below the sufficient scores in achieving basic skills.

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61 Elaborated source from Miur – Fondazione Ismu [http:// archivio.pubblica.istruzione.it/dg_studieprogrammazione/ index_new.shtml]

62 http://nces.ed.gov/surveys/all/index.asp

Iin Italy, the survey shows that 20.2% of citizens have sufficient skills in reading, writing and numeracy, which hardly make them able to live in a complex society[63]. Despite positive trends in young generations, still the 46 per cent of Italian population between 25- and 64- years old has attained lower secondary education[64], and 12% has attained pre-primary or primary levels of education only. The percentage rises extending the age range further and indicates critical situations in southern Italy [Fig.1]:

Fig. 1: Population with only pre-primary/primary school license in Italy (birth date and regional areas) [65]

	<1929	1930-39	1940-49	1950-59	1960-69	1970-79
■ Nord-ovest	60.1	52.4	28.1	6.3	0.5	1.8
■ Nord-est	76.6	61.2	36.9	9.6	1.3	0.1
■ Centro	78.2	62.9	37.7	14.4	1.1	0.7
■ Sud-ovest	85.4	75.4	51.8	27.6	13.9	8.4
■ Sud-est	85.2	71.2	55.9	27.5	10.0	4.9
■ Italia	79.8	65.5	41.7	18.4	6.5	3.4
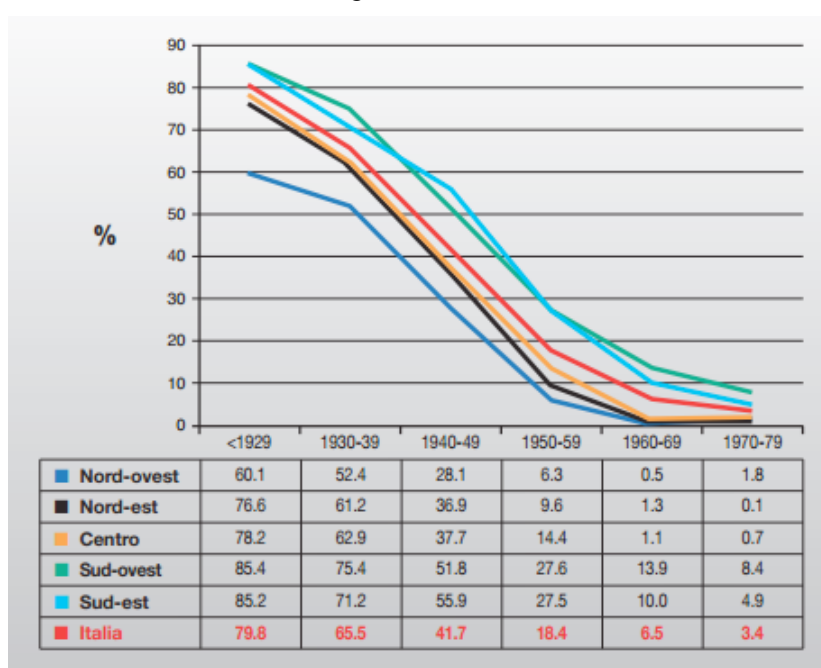
In 2011, the population over 15-years old with either only primary school license or without any title still counted in Italy 11 mln of people. Consequently, the risk of a cross-generational low-education trap is strong, due to the early school leaving rate of 18,2 per cent at national level[66], to the 20 per cent of 15-29 year-olds NEET (not in education, employment, or training) and to the low amount of hours that Italian working people invest in non-formal learning (353h respect to the 988h of OECD average)[67]. Except for the 5 per cent of complete illiterates, there is thus a huge number of people in Italy (74 per cent) that, despite having achieved secondary

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63 Gallina, V., 2006. Letteratismo e abilità per la vita: indagine nazionale sulla popolazione Italiana, 16-65 anni. Armando Editore.

64 ISTAT [http://dati.istat.it/], percentage of population between 25 and 64 years old that attained lower secondary school in 2009

65 Fondazione Rocca and Associazione TreeLLLe [http://www.treellle.org/en/node/117]

66 http://europa.eu/rapid/press-release_IP-12-577_en.htm (data refer to 2011)

67 Education at a Glance: OECD Indicators 2012 – Country note – Italy [http://www.oecd-ilibrary.org/education/education-at-a-glance-2012/italy_eag-2012-47-en]

school grades, have serious problems to understand and write simple texts[68].

Public and private schools[69]

The Constitution of Italy sets two fundamental principles: the duty for Italian State to offer a State educational System to all students; the right for people to create schools and institutes without expenses for Italian State. The Italian Law sets rights and duties of private schools that ask to be recognized as legally equivalent, in order to guarantee equal educational opportunities. Consequently, in Italy there are three categories of schools:

- State schools, managed by the State;
- legally recognized public and private schools;
- private schools not legally recognized.

The Law 62/2000 sets the requirements for legally recognized schools and private education, providing indirect funding through scholarships and tax relief to students' families. It also includes legally recognized schools as part of national education system.

Teachers

Teaching activity is based on POF ("Piano dell'offerta formativa", i.e. Plan of the educational offer). It is a basic document that describes the cultural and planning identity of the single school institution. It defines the curricular, extra-curricular, educational and organizational projects that each school adopts according to the school autonomy regulations. Teachers Assembly of every school decides its annual Plan for update and in service training activities, consistently with the objectives and times of the POF, in the respect of the personal needs or options.

Qualified teachers enter to the profession only through a competitive exam held at National level. The law 53/2003 and the following act 227/2005 provided new procedures for initial training and recruitment of teachers. However, the reform has never been implemented since the norms contained in Law 53/2003 has been replaced by Law 244/2007 (Finance Act 2008), which provided a further review of training and recruitment of teachers to be adopted by Ministry of Education decrees. The process of review restarted with the law 133/2008, that also suppressed the Schools of Specialization for higher education (SSIS) for secondary school teachers, which were created in 1990. In State schools, recruited teachers may have either a permanent or a temporary contract. Recruitment criteria in private schools are managed by single institutes according to the law.

Since 2011, the TFA ("Tirocinio Formativo Attivo", i.e. Active Training Internship) provides the necessary education to obtain teacher qualifiation. TFA is a qualifying course for teaching managed by

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68 De Mauro, T., Erbani, F., 2011. La cultura degli Italiani. Laterza.

69 Source: Eurybase, report on the Organizarion of Italian Educational System [http://www.governo.it/GovernoInforma/Dossier/ valutazione_istruzione_formazione/sistema_italiano.pdf]

universities. It lasts one year and provides – through a final examination – the teaching qualification in one of the curricula selected by candidates. In addition, in 2012, the government set a public competition in order to select teachers. The competition is open for candidates that achieved their degree by 2002–2003 and could not participate to recruitment processes.

Curriculum issues

In Italy, in order to promote autonomy, the design of specific curricula is delegated to school institutes. The guidelines divide primary school education in two periods: the one involving the first 3 years, the other involving the last 2 years. At the end of each period, guidelines set specific learning goals and provide an open framework that must be adopted and contextualized by the professional community and institutes in terms of contents, methods, evaluation. Each school sets curricula within its own learning plan, where teachers identify the most effective learning strategies and connections among disciplines to allow students to achieve learning goals.

Primary school disciplines are organized as following:

5. Languages–Arts–Creativity:

- Italian language and literature;
- Communitarian languages;
- Music;
- Arts & image;
- physical education/sports science;

6. History and Geography:

- History;
- Geography;

7. Mathematics, Natural Science and Technology:

- Mathematics;
- Natural sciences;
- Technologies and Informatics;

8. Citizenship and Constitution

9. Religion

Funding[70]

The State is responsible for the financing of schools administration and teaching, in order to allow education, training and orientation in each type and grade. Schools can also rely on local funding sources by Regions and other public and private bodies for the implementation of projects supported and funded for specific purposes. Donations and legacies have been suppressed. Regions manage and delegate services and support to students (meals,

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70 Source: Eurybase, report on the Organizarion of Italian Educational System [http://www.governo.it/GovernoInforma/Dossier/ valutazione_istruzione_formazione/sistema_italiano.pdf]

transportations, textbooks in primary schools, subsidies to the poor, social care); Provinces and Municipalities provide assistance and services such as heating, electricity, telephone, and are responsible for the construction and maintenance of school buildings. As for the financing of professional schools in Italy, there are different sources of funding by Regions or Provinces, by the Ministry of Labour and/or by Ministry of Education, depending on specific professional curricula. Italian government finances universities through three funds:

- The Ordinary Financing Fund (FFO);
- The fund for University Buildings and Scientific Equipment (FEU);
- The Fund for Development of University System (FPS).

Ministry of Education and Ministry of the Treasury are also responsible for financing the Higher Education in Arts, Music and Theater (AFAM) and Higher Technical Education and Training (IFTS).

In 2009, Italy spent 61 billion of euros for education (4,6 per cent of GDP), significantly below respect to European average [Table n.2].

Table n. 4: Education spending (% of GDP) in European Countries and selected Extra-European countries. [Source: Ministry of Economy and Finance][71]

Countries	2001	2002	2003	2004	2005	2006	2007	2008
Austria	5,9	5,9	6,0	5,8	5,8	5,3	5,2	5,3
Belgium	5,8	5,9	6,0	5,8	5,9	5,8	5,8	5,9
France	6,3	6,4	6,3	6,2	6,1	6,0	5,9	5,8
Germany	4,2	4,2	4,1	4,1	4,1	4,0	3,8	3,9
Ireland	4,5	4,5	4,6	4,6	4,6	4,7	4,9	5,3
Italy	4,7	4,7	4,9	4,6	4,7	4,6	4,6	4,6
Norway	5,9	6,3	6,7	6,2	5,7	5,4	5,5	5,2
Netherlands	4,8	5,0	5,2	5,2	5,1	5,1	5,2	5,2
United Kingdom	5,3	5,6	5,8	5,9	6,2	6,1	6,1	6,3
Spain	4,3	4,4	4,4	4,4	4,3	4,3	4,4	4,6
Sweden	7,2	7,3	7,3	7,1	7,1	7,0	6,8	6,9
Switzerland	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	5,4	N.A.
Average European Countries	**5,4**	**5,5**	**5,6**	**5,4**	**5,4**	**5,3**	**5,3**	**5,4**
Australia	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Canada	7,5	7,5	7,4	7,2	7,0	7,2	N.A.	N.A.
Japan	4,2	4,2	4,1	4,0	4,1	3,9	3,9.	N.A.
New Zealand	N.A.	N.A.	6,5	7,2	7,3	N.A.	N.A.	N.A.
United States	6,1	6,2	6,3	6,1	6,1	6,1	6,2	6,4

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71 Dipartimento della Ragioneria Generale dello Stato (2011). La spesa dello stato dall'unità d'italia Anni 1862-2009 . [http://www.rgs.mef.gov.it/_Documenti/VERSIONE-I/Servizio-s/Studi-e-do/La-spesa-dello-stato/La_spesa_dello_Stato_dall_unit_d_Italia.pdf]

Average Extra-European Countries	6,0	5,9	6,1	6,1	6,1	5,7	5,1	6,4
Overall average	5,5	5,6	5,7	5,6	5,6	5,4	5,3	5,5

Textbook review

The major Italian publishers of school books.

Editor	Title	Coordinator(s)	Date
De Agostini	Iòiò	Corno	2011
Giunti Scuola	I favolosi 4	Airoldi-Morgese-Morotti	2009
Giunti Scuola	Pepe e il suo mondo	Colombo	2008
Giunti Scuola	Pepe e i suoi amici	Colombo	2008
Gruppo editoriale Raffaello		Luigino Quaresima	2008
Gruppo editoriale Raffaello	In bocca al lupo	Detti, Nardi	2008
La Spiga	Magicamente insieme	Cappelletti-De Gianni	2009

Other publishers are

ANGELI	www.francoangeli.it
ARMANDO ARMANDO SRL	www.armando.it
ERNESTO BIGNAMI EDIT.SRL	www.bignami.com
BONACCI EDITORE SRL	www.bonacci.it
CACUCCI EDITORE	www.cacucci.it
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CALOSCI	www.cortona.net/calosci
CEDAM S.P.A.	www.cedam.com
CIDEB EDITRICE S.R.L.	www.omnitel.it/ftpcideb
CLUEB SOC.COOP.A R.L.	www.clueb.com
COLONNA EDIZIONI SPA	www.colonna.it
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D'ANNA S.P.A.	www.danna.it
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DEL BIANCO EDITORE S.R.L.	www.friulnet.it/delbiancoeditore
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EDISCO S.N.C. DI G.JARIA & C.	www.edisco.it
EGEA SPA	www.uni-bocconi.it/bocconi/servizi/egea/index.htm
ELEMOND	www.elemond.it/pianeta-scuola
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Conclusion

The Case Study Italy focused on Italian primary education system. It aimed at analyzing the contribution of digital contents available in the Internet in the achievement of primary license, in a perspective of lifelong learning and interculturality. In particular, this session intended to explore the potential of adopting Wikipedia in teaching activity, and the possible ways to build knowledge through digital contents, also highlighting critical aspects. The study connects then the use and the availability of digital contents in Wikipedia with primary school programs, curricula, textbooks contents and teaching, in order to identify policy recommendation for introducing them in learning activity:

- How are digital contents integrated within education practice in primary schools?
- How do digital contents contribute to primary education of young and adult population, filling the gap in order to provide basic skills to face knowledge society?
- How do digital contents improve literacy, even outside the formal system of primary education? Are they able to give continuity to education process in different context and ages? Are they adequate to these purposes? How can their quality be improved?
- How to build digital environment able to promote primary education, interculturality and lifelong learning?

In order to unfold these issues, it observed national policies defining curricula respect to the digitalization of society, as well as describe the current stage informatization in primary school in order to describe the conditions for innovation.

The Italian scenario outlined connects the fundamental right to primary education for young generations with a need for interculturality in a perspective of lifelong learning. Literacy and primary education has nowadays manifold aspects that cannot be reduced neither to a specific age nor to the simple standard of reading and writing capability: rather than understanding and

composing short sentences, contemporary citizens must be able to master the processes that leads to collect and produce information in order to engage social life, work and personal fulfilment; the citizen must thus be able to use mathematics, ICT, different languages, as well as own environmental and social skills, especially when knowledge and skills are changing along with global transformations of society[72]. Within this context, there are several opportunities and implications created by the ubiquitous presence of digital devices and contents. First, ICT can offer a relevant contribution for the concrete involvement of adults and young generations in achieving basic skills and knowledges, allowing them to "learn to learn". In addition, ICT can be used to 'incentivise' education for young and old people at risk of dropping out or who have dropped out of the education system, due to economic/social disadvantage[73]. Finally ICT can also contribute to ensure the right to education for people with special needs (e.g. disability, long stay in hospital, etc.), acting as catalyst from disadvantage to excellence. ICT factor cope thus with policies, financial resources, management and evaluation of school system, quality of teachers, quality of methods and school environment, adequacy of curricula in the development of education.

Clearly, policies above aim to create an ideal environment for innovation in the whole Italian education system and specifically for the adoption of ICT and Open Educational Resources (OER) within teaching and learning activity. In this sense, schools open up to local communities and to the surrounding territory in new ways, leveraging on features provided by school autonomy and ICT.

Innovation process involving ICT and OER should however be considered within the general Italian context in order to be adequately enacted, with special attention to the following aspects:

1. The large implementation gap in Italian school system: as shown by surveys[74], at the moment Italian primary and lower secondary schools have the average of 18.5 Personal Computers for each school unit, mostly outdated and accessed in dedicated rooms; furthermore, there is an average of only one interactive whiteboard per school unit (many schools do not have any). Besides, the percentage of households with children with access to computers and the Internet had increased in all EU countries (in Italy about 65 per cent of households own a connection and a PC) but computer use at home for school related work is still relatively low.

2. The technology-driven character of innovation, that risk to

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72 Valeria Gallina, "Adult Literacy and Life skills (ALL) – Competenze della popolazione adulta e abilità per la vita" [http://archivio.invalsi.it/ri2003/all/index.htm]

73 e-Inclusion Handbook Version 2: February 2007. [http://ec.europa.eu/information_society/eeurope/i2010/docs/studies/e_inclusion_handbook_0307.pdf]

74 Source: MIUR – survey on multimedia equipment for teaching in primary and secondary schools (Nov 2010 – Jun 2011 on 91,9 per cent of Italian schools)

overlook the organizational and situated aspects of education, referring to the professional expertise of teachers, to their policies of enrolment, training and evaluation. Especially when Italy is among those EU countries that do not evaluate ICT skill of teachers[75].

3. The barriers to digital textbooks market: digital textbooks publishing process is still led by major companies that privilege the use of proprietary licenses. Moreover, price difference between digital textbook and paper textbook is still minimal (about 15 per cent). At the same time, there are several and fragmented grassroot initiatives by teachers in the blogosphere[76], whose generated contents are mostly published without any license and thus hardly reusable. [please refer to the "Italian blogs with educational purposes and in the "Textbook Review"].

4. The debate on the contribution of digital and new media in education is still open and controversial: on one hand, scholars that follow Prensky's definitions of "digital natives" and "digital immigrants"1 argue that the use of computer technologies in learning offers a significant improvement in skills and knowledge achievement; on the other, longitudinal studies and meta–analysis on these topics suggest to carefully consider the trade offs in substituting traditional learning with computer-assisted learning[77].

As Hattie points out in his remarkable synthesis of 800 meta-analyses relating to achievement[78], "like many structural innovations in education, computers can increase the probability of learning, but there is no necessary relation between having computers, using computers, and learning outcomes". In fact, "An analysis of the meta–analyses of computers in schools indicates that computers are used effectively (a) when there is a diversity of teaching strategies; (b) when there is a pretraining in the use of computers as a teaching and learning tool; (c) when there are multiple opportunities for learning (e.g., deliberative practice, increasing time on task); (d) when the student, not teacher, is in "control" of learning; (e) when peer learning is optimized; and (f) when feedback is optimized". Accordingly, the contribution of digital contents to learning activity and skills achievement strongly depends on the factors above.

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75 Key Data on Learning and Innovation through ICT at School in Europe 2011 [http://eacea.ec.europa.eu/education/eurydice/documents/key_data_series/129EN.pdf]

76 See Form@re – Open journal per la formazione in rete, n. 67, 2010 – Special issue on blogs for educational purposes [http://formare.erickson.it/wordpress/it/2010/editoriale-63/].

77 Gui M. (2012). Uso di Internet e livelli di apprendimento. Una riflessione sui sorprendenti dati dell'indagine Pisa 2009, in "Media Education, Studi, ricerche, buone pratiche", vol 3 n.1, pp.29– 42; Hattie J. (2009). Visible learning: A synthesis of over 800 meta–analyses relating to achievement, Routledge, London and New York.

78 Hattie J. (2009). Visible learning: A synthesis of over 800 meta–analyses relating to achievement, Routledge, London and New York. [p. 221]

In this sense, digital tools confirm and empower modes of managing learning that operate in non-technological settings: if contents have a secondary role respect to the enacted technological infrastructure, if contents are not connected with other contents during teaching activity, if contents are considered as something "static" and produced by others, then 'new' teaching models cannot but replicate 'old' models already activated and used without technologies. As a result, teachers do not embody an active approach to digital contents they find on the Internet and take for granted that these content are somehow stabilized and do not need to be extended or verified. If, on the contrary, teachers and students are already used to connecting different content and disciplines in learning activity, if contents and lectures are the result of a cooperative learning, they both can take full advantage of digital tools and contents.

The role of the teacher is at the core of this process, especially since primary school is still the main environment to achieve basic digital literacy: the teacher provides explanation and "translation" from the language of the web; builds the structure of the lecture selecting and organizing thoughtfully the countless contents of the web, using also generated digital contents by other teachers; controls and supervises students use of new media; finally, keeps the necessary bond with traditional learning methods. There should be thus a form of both organizational legitimization, responsibility, traning and leadership in setting shared objectives, methods and standards for teachers. Until they are missing in the everyday teaching practices, even the best digital tool will remain just isolated, provisional and ineffective. A substantial step is needed from a technology-driven innovation to a practice-driven innovation, since we cannot take for granted technologies but must be able to situate them in our lived experience.

In this sense, the challenge for school is help to understand how technologies work rather than teach how to use them. As we showed above, there is significant room for to improvement of digital contents for primary school. On one hand, digital contents available in wikipedia form a huge repertoire that does not automatically constitute knowledge in order to produce knowledge, since they need to be activated by users with solid expertise and background. On the other, once digital contents are activated, the issue of quality of information becomes of essential importance. Within this context, the lists sketched and rated in §16 acts as a starting point to enrich and customize Wikipedia articles related to primary school subjects.

This way, insisting on the partial, improvable and open nature of Wikipedia can act as a trigger to start teaching Wikipedia as something to review, edit and write in rather than to look at, so as allowing appropriation and developing critical thinking. Considered as a tool that you can both use and look how it works, Wikipedia can offer a transparent training environment for democratic practices where outcomes and teaching strategies need to be evaluated case by case. Teachers, thus, must know how to use digital resources and to give students media literacy and critical thinking on their use, making them able to recognize reliable contents, and where

possible edit and write new ones. In this case, the attention should be directed to the clear definition of criteria, objectives and performance indicators, in order to evaluate carefully costs and benefits and assess learning achievements.

This, however, is more related with learning and teaching culture than with technologies. For this reason, the projects involving the use of Wikipedia in primary school must thus be supported by two actions directed to teachers: the first one involves training on the adoption of Open Educational Resources and on Creative Commons licenses; the second one involves training on publishing, labeling, sharing, adapting and re-using digital contents for educational purposes.

Basing on the analysis and phenomena discussed in sections above, the part of the project that involves the Italian context can effectively turn into a threefold pilot project focusing both on primary school teachers and on adult education, as well as in situation with high intercultural needs. The project should thus take into consideration the recent reorganization of centers for adult education as a possible setting, as well as the digital school centres planned by government to ensure access to education for students living in remote areas. Finally, the pilot can take also advantage of policies of textbooks digitalization starting in 2013: it can build partnerships with publishers and/or ongoing projects adopting open licenses (eg "bookingprogress" described above) to create open manuals and textbooks for primary education. With the same purpose, actions can be directed to mobilize and organize the huge resources available in the educational blogosphere.

5. South Africa

History

South Africa has a famously tumultuous past. As such, South Africa's education system was shaped by, and in some areas still reflects, the inequalities of the past. This section will specifically deal with recent history and what has shaped it. For more information on the history of education in South Africa prior to 1994, please look at this Wikipedia article (http://en.wikipedia.org/wiki/ Education_in_South_Africa#History).

The Bantu Education Act of 1953 formalised the divide in educational opportunities for the different racial groups, and was implemented in order to keep black education at an inferior quality to white education. Hendrik Verwoerd, the Minister of Native Affairs (from 1950–1958), said black Africans "should be educated for their opportunities in life" and that there was no place for them "above a certain forms of labour." The Bantu Education Act also called for schools to provide education in mother–tongue for the first years of primary school. This furthered the idea that a person's social responsibilities and opportunities were defined by their ethnicity. Education funding was tiered, with the schools assigned to white children receiving the most funds, followed by funding for coloured and Indians school, and finally black education was given the lowest priority. In the 1970's, per–capita spending by the government on black education was one–tenth of that spent on white education.[79]

The National Policy for General Affairs Act (No. 76) of 1984 provided some improvements in black education, but maintained the overall separation called for by the Bantu Education Act.[80] The South African education system in the ten years preceding 1994 consisted of 15 education departments, which served different population groups and ethnic groups. The per capita expenditure for each learner in the pre–1994 systems was extremely unequal. The majority of the white schools were provided with an almost free and high quality education, whereas the black children received free education but low quality education.

Between 1984 and 1994, education was compulsory for all racial groups, but at different ages, and the law was enforced differently. Whites were required to attend school between the ages of seven and sixteen. Black children were required to attend school from age seven until the equivalent of seventh grade or the age of sixteen, this law was rigorously enforced, and not at all in areas where schools were unavailable. For Asians and coloured children,

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79 Giliomee H, 2009. A Note on Bantu Education 1953–1970 South African Journal of Economics, March 2009.

80 Library of Congress, Federal Research Division, A Country Study: South Africa,July 27, 2010, http://lcweb2.loc.gov/frd/cs/zatoc.html

education was compulsory between the ages of seven and fifteen.[81]

The discrepancies in education among racial groups during this time were glaring.Teacher: pupil ratios in primary schools averaged 1:18 in white schools, 1:24 in Asian schools, 1:27 in coloured schools, and 1:39 in black schools. Moreover, 96% percent of all teachers in white schools had teaching certificates, but only 15% of teachers in black schools were certified. Secondary-school pass rates for black pupils in the nationwide, standardised high-school graduation exams were less than one-half the pass rate for whites.[82]

Post-1994, this all changed. However, the strong legacy of apartheid in South Africa, and the correlation between education and wealth, have proven difficult to overcome. Just over 18 years later, poorer learners still perform worse academically. The links between affluence and educational quality in South Africa can partially explain this outcome as the poor continue to receive a far inferior quality of education when compared to their wealthier counterparts. This disadvantages them in the labour market and thus entrenches their poverty.

In an effort to counterbalance this legacy, several initiatives have been implemented by the Department of Basic Education and include the Language in Education Policy and the Quintile School System.

Statistics

In 2012 there were 12,428,069 learners in the basic education (public, government-funded) system in South Africa. The national definition of basic education has yet to be officially determined, but we can consider that basic education in South Africa encompasses all educational institutions that offer Grade R to Grade 12 and that received public funds from the Department of Basic Education.

In 2011, there were 30,586 publicly funded schools in South Africa serving grades R to 12 and 439,394 educators. Of these, 14,456 (or 47% of all schools) were primary schools or covered grades R to 7. There are 5,992,863 learners in grades R to 7 who are served by 187,520 educators. 43% of the total educators from Grades 1 to 12 teach in primary schools (DBE, 2012). In the private sector in 2010 there were 1,399 private or independent schools in South Africa that provided education facilities for 450,740 students[83].

Demographics
- Total population of South Africa (2011): 51,770,560
- Numbers of children under 19 in South Africa (2011): 19,103,566 or 37% of the population
- Total number of children aged 5-14 (2011): 9,414,637 or 18% of the population

81 Ibid.

82 Ibid.

83 South African Institute of Race Relations South Africa Survey 2010-2011 website: http://www.sairr.org.za/services/publications/south-africa-survey/south-africa-survey-online-2010-2011/education

- Almost one in three or 29.6% of the population of South Africa is aged between 0–14 years.

South Africa Public Primary School Statistics
- 14,456 Primary Schools
- 5,992,863 Learners
- 187,520 Teachers

Number of learners in schools by grade, gender in 2012

	Sex	Gr. R	Gr. R	Gr.1	Gr.2	Gr.3	Gr.4	Gr.5	Gr.6	Gr.7	Total
Private	F	8925	15870	23541	21239	19023	17914	16662	16169	15945	130493
	M	8825	16149	23968	20978	19050	17678	16853	15825	50356	129610
	T	17750	32019	47509	42217	38073	35592	33515	31994	66301	260103
Public	F	15406	365191	553942	500398	450694	446047	438117	442307	435658	3267166
	M	15998	342442	563508	495699	485251	504415	486983	481599	475021	3492476
	T	30320	735846	1161464	1032571	929300	930757	905510	903452	881325	6744379
Both	F	24331	381061	577583	521637	469717	463961	454779	458476	451603	3397650
	M	23739	386804	631490	553151	497626	502388	484246	1463604	491447	3606862
	T	48070	767865	1208973	1074788	967373	966349	939025	935446	912528	7004482

Languages of learning
1. Afrikaans (Afrikaans),
2. English
3. Ndebele (isiNdebele),
4. Northern Sotho (Sesotho sa Leboa),
5. Sotho (Sesotho),
6. Swati (siSwati),
7. Tsonga (Xitsonga),
8. Tswana (Setswana),
9. Venda (Tshivenḓa),
10. Xhosa (isiXhosa),
11. Zulu (isiZulu)

All learners are offered one of the approved languages as a subject in Grade 1 and Grade 2.

From Grade 3 onwards, all learners learn in their chosen language of learning, and learn at least one additional approved language as a subject.

Basic Infrastructure off the 30,586 publicly funded schools
- 3,500 do not have electricity (11%)
- 11,450 use pit latrine toilets (37%)
- 2,402 lack a water supply (7.9%)
- 22,000 schools do not have adequate computer facilities (72%)
- 23,552 lack stocked science laboratories (77%)
- 24,162 do not have library facilities (79%)

Learner Ratios
- 2010 Learner to Educator Ratio: 29.3:1
- 2010 Learner to School Ratio: 474:1

- 2010 Educator to School Ratio: 16.2:1
- 2011 Matric Exam pass: 67.8%

Literacy and numeracy

Average Literacy and Numeracy capability of learners in Grade 3 and Grade 6 based on Annual National Assessment exams

2011	Grade 3	Grade 6
Literacy:	35%	28%
Numeracy:	28%	30%

The education statistics of the 2011 Census[84] are positive, they show that the number of people aged 20 years who have no schooling halved from 19,1% in 1996 to 8,6% in 2011.

The percentage of persons whose highest level of education was some primary level education decreased from 16,6% in 1996 to 12,3% in 2011; while those who had completed primary level decreased from 7,4% in 1996 to 4,6% in 2011. There was also a considerable increase in the percentage of persons who completed higher education from 7,1% in 1996 to 11,8% in 2011. (Ibid.)

The 2011 Census also shows that the black African population group has more than doubled the number of people with higher education between 1996 and 2011. Those with no schooling more than halved during the same time period for the black African, coloured and Asian/Indian population. (ibid)

It is revealing to calculate the percentage of Grade 6 South African learners who can be classified as functionally illiterate and functionally innumerate.

Observing the national averages, it is disconcerting to see that 40.2% of South African Grade 6 learners are functionally innumerate, and 27.2% are functionally illiterate. As with all South African data, these averages shroud the severe inequalities between sub-groups of learners. For example, only 5.1% of learners in the Western Cape are functionally illiterate, and only 1.4% of quintile five learners are functionally illiterate.

This is in stark contrast to the Eastern Cape where 38.6% of learners are functionally illiterate, and the Limpopo province where the figure is 49%. Almost half (44.7%) of all quintile one learners are classified as functionally illiterate, and more than half (58.7%) of learners in quintile one schools are functionally innumerate. For every sub-group, there are more learners classified as functionally innumerate than those classified as functionally illiterate.

There is an alarmingly large percentage of functionally innumerate learners across all regions, all school locations, and all socioeconomic quintiles (except quintile 5). The specific percentages of functionally innumerate learners for selected sub-groups are: Limpopo (60.6%), Eastern Cape (50.3%), KwaZulu-Natal (44%), Mpumalanga (43.8%), Rural schools (55.2%), Quintile one schools

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84 StatsSA; Census 2011 in brief: http://www.statssa.gov.za/ Census2011/Products/Census_2011_Census_in_brief.pdf

(58.7%), Quintile two schools (48.9%) and Quintile three schools (47.4%)[85].

Table 8: Provincial percentages of learners rated as functionally illiterate and functionally innumerate

Provinces	Functionally Illiterate (%)	Functionally Innumerate (%)
Eastern Cape	38.6	50.3
Freestate	22.3	38.1
Gauteng	11.6	20.5
KwaZulu-Natal	28.4	44
Limpopo	49	60.6
Mpumalanga	28.4	43.8
Northern Cape	21.4	37.1
North West	21.9	38.1
Western Cape	5.1	40.2
Total	27.2	40.2

Table 9: Percentage of learners rated as functionally illiterate and functionally innumerate distributed according to Quintiles

Quintiles of School	Functionally Illiterate (%)	Functionally Innumerate (%)
Quintile 1	44.7	58.7
Quintile 2	34.4	48.9
Quintile 3	30.4	47.4
Quintile 4	20.1	35.4
Quintile 5	1.4	4.6
Total	**27.2**	**40.2**

Table 10: Percentage of learners rated as functionally illiterate and functionally innumerate by classification of school [Data from The SACMEQ III project In South Africa A Study of The Conditions of Schooling And The Quality of Education]

School Location	Functionally Illiterate (%)	Functionally Innumerate (%)
Isolated	38.8	56.2
Rural	41.3	55.2
Small town	16.7	32.9
Large city	11.4	20.7
Total	**27.2**	**40.2**

From an educational perspective it is important to realise that a large number of children – particularly those from disadvantaged backgrounds those found in rural and Quintile 1–3 often acquire these learning deficits very early in their educational careers. As

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85 Southern and Eastern Africa Consortium for Monitoring Educational Quality. (2012). A study of the conditions of schooling and the quality of education. Retrieved: SACMEQ website: http://www.sacmeq.org/downloads/National%20Reports%20SIII/S3_South_Africa_Final.pdf

education is a cumulative process, these deficits in numeracy and literacy are likely to stay with these children for the rest of their lives.

In 2011, a SACMEQ study[86] study found that the exception of the wealthiest two provinces (Gauteng and the Western Cape), all other provinces perform worse than the SACMEQ average for both reading and mathematics (Figure 1). This was surprising given that South Africa's economy is by far the largest amongst the SACMEQ countries and it is one of the richest in per capita terms.

Figure 1: South African National Provincial Student performance [SPAULL, 2011]
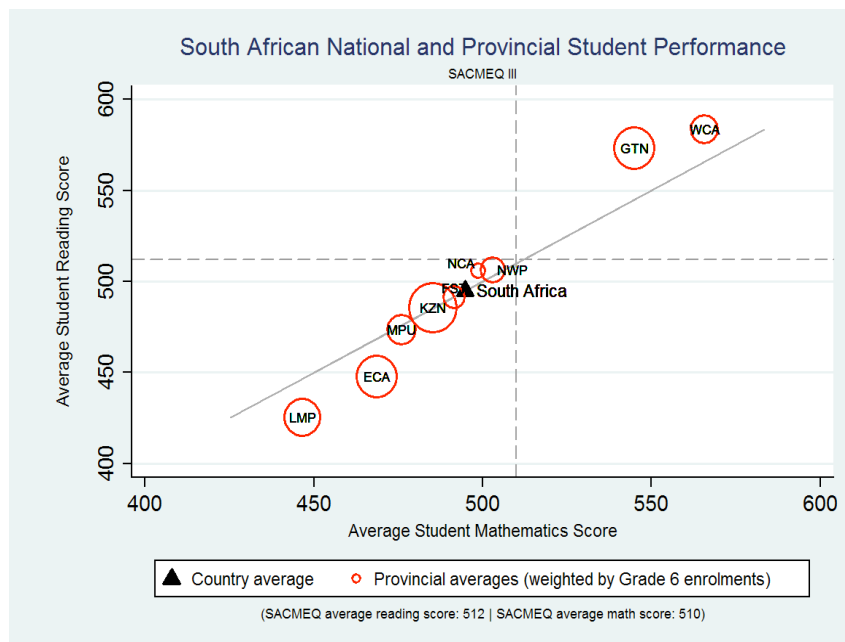
The variation in student enrolments across the nine provinces is also important to consider, with KwaZulu-Natal having the largest share of grade 6 students, and the Northern Cape having the smallest share. To place these figures in perspective, there are more grade 6 students enrolled in KwaZulu-Natal than in the whole of Botswana.

Structure of the educational system

South Africa has a four-tiered system of education, Foundation Phase (grades R-3), Intermediate Phase (grades 4-7), Senior Phase (grades 8-9) and Further Education and Training (FET) Band (grades 10-12). Primary school in South Africa spans from grade 1-7, with a year of pre-primary schooling. The Department of Basic Education (DBE) specifically focuses on all schools from Grade R to Grade 12, and adult literacy programmes. (DBE) The South African Schools Act (1996) made schooling compulsory for children aged 7 to 15 years,

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86 Spaull, N. (2011) Primary School Performance in Botswana, Mozambique, Namibia, and South Africa Primary School Performance in Botswana, Mozambique, Namibia, and South Africa (Working Paper No. 8) Retrieved from: Southern and Eastern Africa Consortium for Monitoring Educational Quality website: http://www.sacmeq.org/downloads/Working%20Papers/08_Comparison_Final_18Oct2011.pdf

while the Education Laws Amendment Act (2002) set the age admission into Grade 1 as the year in which the child turns seven[87].

Grading scales

Most children enter grade R at the age of either six or seven. South Africa has a four tiered education system, primary Schools specifically focus on the r first two tiers – Foundation Phase (grades R–3) and Intermediate Phase (grades 4–7).

The South African school year begins in mid January and runs through to early December of that year for approximately 42 weeks. Students advance with their class at the end of December, and begin a new school year in January.

There are four breaks scheduled throughout the year, generally held at the end of March, early July, end of September and the year end break being held between December and January, which is also known as the summer holidays.

Phase	Grade	Age
	Pre-grade R	6
Foundation Phase	Grade R	7
	Grade 1	8
	Grade 2	9
	Grade 3	10
Intermediate Phase	Grade 4	11
	Grade 5	12
	Grade 6	13
	Grade 7	14

Table 1: Ages of primary school grades

Curriculum issues

In South Africa, the curriculum is set nationally by the Department of Basic Education.

The aim of the National Curriculum Statements (NCS) Grades R–12 is to ensure that children acquire and apply knowledge and skills in ways that are meaningful to their own lives. In this regard, the NCS Grades R–12 promotes knowledge in local contexts, while being sensitive to global imperatives.

  The National Curriculum Statement Grades R–12 serves the purposes of:

- Equipping learners, irrespective of their socio-economic background, race, gender, physical ability or intellectual ability, with the knowledge, skills and values necessary for

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87 Some Structural Changes in Educational Enrolment and Attainment Levels within the Female Population of South Africa (2004–2007) / N. Ramaipato website: http://etd.uwc.ac.za/usrfiles/modules/etd/docs/etd_gen8Srv25Nme4_1380_1275591914.pdf

self-fulfilment, and meaningful participation in society as citizens of a free country;

- Providing access to higher education;
- Facilitating the transition of learners from education institutions to the workplace; and
- Providing employers with a sufficient profile of a learner's competences.

The National Curriculum Statement Grades R–12, according to the Department of Basic Education, is based on the following principles:

- **Social transformation:** ensuring that the educational imbalances of the past are redressed, and that equal educational opportunities are provided for all sections of the population;
- **Active and critical learning:** encouraging an active and critical approach to learning, rather than the rote and uncritical learning of given truths;
- **High knowledge and high skills:** the minimum standards of knowledge and skills to be achieved at each grade are specified and set high, achievable standards in all subjects;
- **Progression:** the content and context of each grade shows progression from simple to complex;
- **Human rights, inclusivity, environmental and social justice:** infusing the principles and practices of social and environmental justice and human rights as defined in the Constitution of the Republic of South Africa. Maintain a sensitivity to issues of diversity such as poverty, inequality, race, gender, language, age, disability and other factors;
- **Valuing indigenous knowledge systems:** acknowledging the rich history and heritage of this country as important contributors to nurturing the values contained in the Constitution; and
- **Credibility, quality and efficiency:** providing an education that is comparable in quality, breadth and depth to those of other countries.

The National Curriculum Statement Grades R–12 aims to produce learners that are able to:

- Identify and solve problems and make decisions using critical and creative thinking;
- Work effectively as individuals and with others as members of a team;
- Organise and manage themselves and their activities responsibly and effectively;
- Collect, analyse, organise and critically evaluate information;
- Communicate effectively using visual, symbolic and/or language skills in various modes;
- Use science and technology effectively and critically showing responsibility towards the environment and the health of others; and
- Demonstrate an understanding of the world as a set of

related systems by recognising that problem solving contexts do not exist in isolation.

Implementation of the National Curriculum Statement Grades R-12

In Primary Schools across South Africa, the National Curriculum Statement Grades R–12 is rolled out through the Foundation Phase (grades R–3) and Intermediate Phase (grades 4–7).

At the Foundation Phase Grades R to 3 there are three learning programmes (or subjects):

- Literacy (focussing on one of the 11 national languages),
- Numeracy (mathematics), and
- Life Skills.

The instructional time per week in the Foundation Phase is as follows:

Table 2: Time allocation per subject for Foundation Phase

Foundation Phase Subject	Grade R (hrs/ week)	Grades 1-2 (hrs/ week)	Grade 3 (hrs/ week)
Home Language	10	7/8	7/8
First Additional Language	N/A	2/3	3/4
Numeracy	7	7	7
Life Skills	6	7	7
• Beginning Knowledge	(1)	(1)	(2)
• Creative Arts	(2)	(2)	(2)
• Physical Education	(2)	(2)	(2)
• Personal and Social Well-being	(1)	(1)	(1)
Total	23	23	25

Ten hours are allocated for languages in Grades R–2 and 11 hours in Grade 3. A maximum of 8 hours and a minimum of 7 hours are allocated for Home Language, and a minimum of 2 hours and a maximum of 3 hours for Additional Language in Grades 1–2. In Grade 3 a maximum of 8 hours and a minimum of 7 hours are allocated for Home Language and a minimum of 3 hours and a maximum of 4 hours for First Additional Language.

At Intermediate Phase Grades 4 to 7 there are five learning areas or subjects:

- Additional Language (in one of the 11 languages)
- Mathematics
- Natural Science and Technology
- Social Sciences (History)
- Life Skills

The instructional time per week in the Intermediate Phase is as follows:

Table 3: Time allocation per subject for Intermediate Phase

Intermediate Phase Subject	Grade 4 (hrs/week)	Grade 5 (hrs/week)	Grade 6 (hrs/week)	Grade 7 (hrs/week)
Home Language	6	6	6	6
First Additional Language	5	5	5	5
Mathematics	6	6	6	6
Natural Sciences and Technology (Physics, Biology, Chemistry)	3.5	3.5	3.5	3.5
Social Sciences (History, Geography)	3	3	3	3
Life Skills • Creative Arts • Physical Education • Personal and Social well-being	4 (1.5) (1) (1.5)	4 (1.5) (1) (1.5)	4 (1.5) (1) (1.5)	4 (1.5) (1) (1.5)
Total	27.5	27.5	27.5	27.5

Language in Education Policy

The Department of Basic Education adopted the Language in Education Policy (LiEP) in 1997, and further clarified its policy in the Revised National Curriculum Statement (NCS) of 2002.

The aims of the Language in Education Policy was to provide a strong foundation for the protection and advancement of the country's diverse cultures and languages. Section 6 of the Language in Education Policy Act empowers school governing bodies to determine the language policy of schools within guidelines set nationally and on the provincial level.

According to the Department of Basic Education's language policy, students have a right to be taught in a language of their choice and they should inform the school of the language that they wish to be taught in when applying for admission. Only official languages may be used for instruction. From Grade 3 onwards, all pupils must study the language they are taught in, and learn at least one other approved language. Furthermore, language may not be used as a barrier to admission, ensuring that governing bodies must stipulate how their schools promote multilingualism. Further, failing a language will result in failing a grade.[88]

The underlying principle of the LiEP is to maintain the use of home language as the Language of Learning and Teaching (especially in the early years of learning), while providing access to an additional

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88 Department of Basic Education. (1997). Language in Education Policy website: http://www.education.gov.za/LinkClick.aspx?fileticket=XpJ7gz4rPT0%3D&tabid=390&mid=1125.

language(s). Grades 1–2 must be available in all 11 national languages of South Africa[89].

From Grade 3 onwards, all learners should receive education in their language of learning and teaching, and at least one other approved language as subjects. From Table 4 below, you can see that the from Grade 3 onwards, home languages are replaced as the LoLT in Grade 4 by predominantly English, leaping from 27,7% in Grade 3 to 79.1% in Grade 4.

Table 4: Percentage of learners by Language of Learning in 2007

| LOLT | Percentage of learners by LOLT: 2007 | | | | | | | | | | | | |
	Gr 1	Gr 2	Gr 3	Gr 4	Gr 5	Gr 6	Gr 7	Gr 8	Gr 9	Gr 10	Gr 11	Gr 12	SA
Afrikaans	9.5	9.6	9.9	12.3	12.2	12.2	13.2	13.1	14.0	12.7	12.1	12.8	**11.9**
English	21.8	23.8	27.7	79.1	81.1	81.6	80.6	80.9	80.0	81.2	82.0	81.4	**65.3**
isiNdebele	0.7	0.8	0.8	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	**0.4**
isiXhosa	16.5	15.0	14.0	3.1	2.5	2.0	1.9	1.6	1.4	1.3	1.2	1.5	**5.5**
isiZulu	23.4	21.7	20.1	1.5	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	**6.8**
Sepedi	8.3	9.1	9.2	1.1	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	**3.1**
Sesotho	4.7	4.8	4.4	0.5	0.4	0.3	0.4	0.4	0.5	0.5	0.4	0.3	**1.6**
Setswana	7.5	7.4	6.8	0.6	0.5	0.5	0.6	0.6	0.7	0.6	0.5	0.3	**2.4**
Siswati	2.1	2.1	1.7	0.4	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	**0.7**
Tshivenda	2.2	2.4	2.4	0.3	0.2	0.2	0.2	0.4	0.5	0.5	0.6	0.5	**0.9**
Xitsonga	3.1	3.3	3.1	0.7	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	**1.4**
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: DBE, LOLT Report, 2010d

In 2007, 65% of learners in Primary School chose English as their Language of Learning and Teaching (LoLT), 12% of learners chose Afrikaans for their LoLT and 7% learnt via isiZulu. It is important to note that by the end of their school career, 81.4% of pupils have chosen to learn in English, with very little take up in other languages, apart from 12.8% in Afrikaans.

Interestingly, despite adoption and implementation of the Language in Education Policy (LiEP) by the Department of Basic Edcuation, the choice of LoLT is not a true reflection of the country's dominant home languages, in that students are predominantly educated in English but speak another language at home.

The 2011 Census recorded that 22.7% of South Africans spoke Zulu at home, followed 16% who speaks Xhosa and 13.5% speaking Afrikaans. Contrary to the popularity of English as a LoLT, it ranks as the 6th most common home language of South Africans, with only 4.8 million or 9.6% of the population registering English as their home language. It is often commented that one of the remaining legacies of apartheid is that English continues to be the country's language of business, politics and communication. The following is a table, extracted from Wikipedia, that lists the national languages of South Africa and the percentage of use through home language.

Table 5: National Languages of South Africa according to the population [Wikipedia,

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89 The official national languages of South Africa are: Afrikaans (Afrikaans), English, Ndebele (isiNdebele), Northern Sotho (Sesotho sa Leboa), Sotho (Sesotho), Swati (siSwati), Tsonga (Xitsonga), Tswana (Setswana), Venda (Tshivenḓa), Xhosa (isiXhosa), Zulu (isiZulu).

Language	Speakers	%
Zulu	10,677,000	23.8%
Xhosa	7,907,000	17.6%
Afrikaans	5,983,000	13.3%
Northern Sotho	4,209,000	9.4%
Tswana	3,677,000	8.2%
English	3,673,000	8.2%
Sotho	3,555,000	7.9%
Tsonga	1,992,000	4.4%
Swati	1,194,000	2.7%
Venda	1,022,000	2.3%
Ndebele	712,000	1.6%
Other languages	217,000	0.5%
Total	44,820,000	100.0%

The language policy is controversial and often debated as the policy tries to meet two demands: maintaining multilingualism and gaining access to global markets. Independent research conducted by the Project for the Study of Alternative Education in South Africa (PRAESA) shows that students learn best in their mother tongue, under the right conditions and when using a parallel language, such as English, with learning outcomes that best supports the students. PRAESA has established that children learn to read by creating stories and meaningful connections.

However, PRAESA cites that the biggest challenge to delivering a successful language of learning policy is in providing adequate teacher education. Educators often don't have enough English skills themselves to adequately provide instruction in English. Secondly, if a student is only offered English as a second language between grade R and grade 2, and is then taught in English full time from grade three onwards, the learners potentially spends most of their time trying to catch up in English instead of grasping the concepts of what is being taught.

Standardised testing

Annual National Assessment (ANA) written	Gr. 3, Gr. 6, Gr. 9
National Senior Certificate (Matric Exam)	Gr. 12

The National Curriculum Statement Grade R–12 states that formal report cards should be sent to parents once a term.

Teachers of all grades report the achievements of the students against percentages. The achievement rating in a report card should be indicated by a combination of national codes, percentages and

comments. The national codes and their corresponding percentage bands are as shown in the table below.

Table 6: Codes and percentages for recording and reporting

National Codes	Description of Competence	Percentage of Marks
7	Outstanding achievement	80-100
6	Meritorious achievement	70 - 79
5	Substantial achievement	60-69
4	Adequate achievement	50-59
3	Moderate achievement	40 - 49
2	Elementary achievement	30 - 39
1	Not achieved	0-29

The National Senior Certificate or Matric

The National Senior Certificate (NSC) examinations, commonly known as the "matric exams", signifies the culmination of twelve years of formal schooling in South Africa. The NSC examination has increasingly become one of the key barometers to indicate the state of health of the education system in South Africa.

However, the consequence of this focus has seen poor results related to numeracy and literacy that have not been assessed, and can therefore not be corrected, earlier in the students' education. Further, stakeholders feel that the vast majority of pupil who have passed matric are not prepared for the labour market.

In 2011, 620,266 pupils registered to write the matric exams. Of those registered to write the examinations, 511 038 full time candidates enrolled for matric[90], 496 090 wrote matric (97% of those enrolled) and 348 117 passed the NSC[91]. In 2011, the matric exams were held at 6540 examination centres, and were marked at 123 marking centres by 35,000 markers[92]. The national pass rate, (for full time candidates) was 70.2%, an increase of 67.8% on 2010's figures[93] (or 68% if you extrapolate from the number of pupils that registered for matric).

The statistics are interesting when calculated against the total number of pupils who entered Grade 1 in 2000, which was 923,463. This means that of the total number that entered the school system in 2000 for the class of 2011, only 67% stayed the course and sat the exams[94].

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90 This is opposed to part-time candidates. In 2011, 108 237 part-time pupils (adult-education and other) wrote matric, some of whom were writing the Senior Certificate that was based on the previous syllabus.

91 NAPTOSA, Matric Results 2011, Summary of Statistics: http://www.naptosa.org.za/downloads/NSC_Stats_2011.pdf

92 http://www.vocfm.co.za/index.php?option=com_k2&view=item&id=1453:2011-09-22-17-54-14&Itemid=121 (Thursday, 22 September 2011; retrieved November 2012)

93 NAPTOSA, Matric Results 2011, Summary of Statistics: http://www.naptosa.org.za/downloads/NSC_Stats_2011.pdf

94 This number can be misleading as many of the children that start a year, might be held back or repeat grades.

Despite matric result receiving the lionshare of media and DBE focus, less than one third of all South Africans have completed matric. Only 28.4% of South Africans over the age of twenty years have completed the 12th grade while only 33.8% even got to high school and 8.6% had no schooling at all. 12.1% have a tertiary qualification.[95]

The Annual National Assessments

In 2010, the Department of Basic Education posed the idea of an Annual National Assessments (ANA). The ANA was implemented in order to test the literacy and numeracy of children in Grade 3 and Grade 6 using a standardised test. The tests were administered for the first time in February 2011. The second ANA took place between the 18th and 21st September 2012.

7 million learners in Grades 3 and 6 sat the second ANAs in 2012, the results of which have yet to be released[96].

In 2011, the Grade 3 ANAs were available in each of the eleven official languages, while the Grade 6 ANAs were only available in English or Afrikaans – this mirrors the predominant medium of instruction in each of these grades. The average percentage scores for literacy and numeracy for the two grades are detailed in Table 7.

Table 7: The percentage of Grade 3 and Grade 6 learners who are considered Literate and Numerate [Department of Basic Education, 2011]

	Grade 3	Grade 6
Literacy:	35%	28%
Numeracy:	28%	30%

These results effectively indicates that the majority of South African learners are performing at unacceptably low levels, even when measured using local, curriculum–specific standards of literacy and numeracy[97].

Education of students with special needs

Current statistics show that only around 64,200 learners have disabilities or impairments. These students are accommodated in

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95 StatsSA; Census 2011: http://www.statssa.gov.za/Census2011/ Products/Census_2011_Census_in_brief.pdf

96 Department of Basic Education. (2012) School Realities 2012 Retrieved from: Department of Education South Africa website: http:// www.education.gov.za/LinkClick.aspx? fileticket=MMXRVCugRQ4%3d&tabid=93&mid=1952

97 Department of Basic Education. (2011). Report on the Annual National Assessments of 2011 retrieved from: Department of Basic Education. Website: http://www.education.gov.za/LinkClick.aspx? fileticket=1U5igeVjiqg%3D&tabid=358&mid=1325

423 specialist schools in South Africa[98]. The distribution of specialist schools seems to be concentrated around the larger metropolis. Two provinces, Gauteng and the Western Cape combined, have 236 of the 423 special schools (62% of specialist schools and 65% of learners).

Individual learner costs for specialist learners of provision by province vary widely from R11,000 a year in Gauteng to R23,000 in the Free State, and R28,600 in the Western Cape.

Public and private schools

The South African Schools Act (SASA) of 1996 established a national schooling system and recognised two categories of schools: public and independent. Public schools are state controlled and independent schools are privately governed. All private schools were included into the independent school category.

Within the public school category, SASA created a sub-category of "public schools on private property" that includes state schools on private land that are owned by religious bodies, farmers, mines and forestry companies.[99] The South African definition of independent schools is a narrow one compared to other developing countries, especially as it does not include the "public schools on private property".
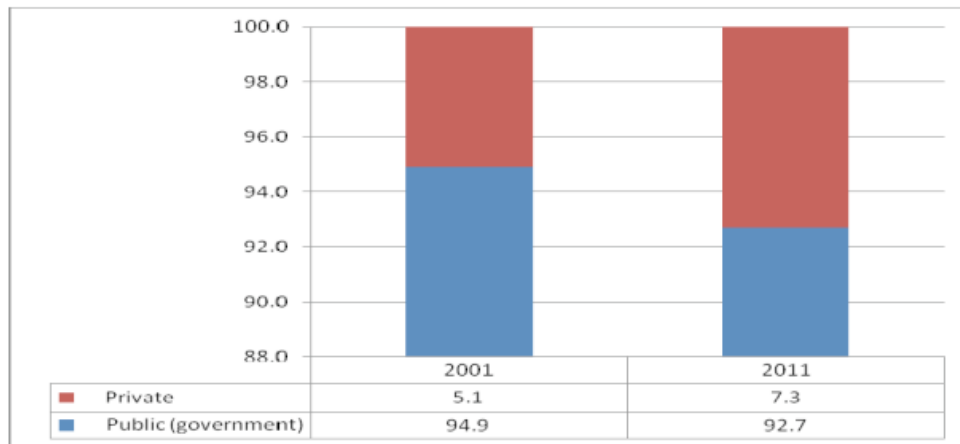
In terms of Section 29 of the Constitution of South Africa, everyone has the right to establish, at his or her own expense, independent educational institutions. These institutions may not discriminate on the basis of race, must be registered with the state, and must maintain standards not inferior to those of comparable public institutions. State subsidies to independent institutions are permitted, but not guaranteed.

The vast majority of students in South Africa attend public educational institutions. Only 7.3% of those aged between 5 and 24 years attend private educational institutions (StatsSA, 2011). This number has increased from 5.3% in 2001.

Figure 2: Percentage of students attending public vs. independent schools [StatsSA, 2011]

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98 Department of Basic Education. (2010). The Status of the language of Learning and Teaching (LOLT) in Schools: a quantitative overview. Retrieved: Department of Basic Education website: http://www.education.gov.za/LinkClick.aspx?fileticket=LlfRGMZxPRg%3D&tabid=422&mid=1261

99 http://www.isasa.org/

	2001	2011
Private	5.1	7.3
Public (government)	94.9	92.7

According to the 2011 Census, the provincial distribution of independent and public educational institution attendance shows a general increase in private school attendance across all provinces. Gauteng (16,7%), the Western Cape (7,5%) and Free State (6,4%) showed the highest attendance for private institutions. All other provinces had private institution attendance rates of less than 5%. (ibid)

A study by the South African Institute of Race Relations compared the numbers of independent schools in 2000 with those in 2010. The study found that from 2000 to 2010 the number of independent schools increased by more than 44% across the whole country, an increase from 971 in 2000 to 1,399 in 2010.

The general growth of the independent sector has been boosted by a growth in low-cost primary schools, in response to a lack of faith in the state sector. [100] This trend was particularly strong in the Eastern Cape where there was a 295% increase in independent schools, and Limpopo, with a 135% increase. Only in the Northern Cape did the number of independent schools decrease.

Despite the increase in independent schools, these schools still accounted for only 5.4 percent of all South African schools, up from 3.5 percent in 2000.

Funding

Education in South Africa is primarily provided through public funds.

In the 2012-2013 financial year, the allocation for basic education is R152.1 billion (Euro 13.29 bn). This figure accounts for 15% of the national budget, and as such education counts for the largest portion of South Africa's budget.

The Quintile School System

In an effort to redistribute funds and address the economic divide left by apartheid the Department of Basic Education distributes funds according to a quintile system. According to the School Act, the aim of the quintile system is to "redress past injustices in

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100   http://www.bbc.co.uk/news/world-africa-17315157

educational provision [and] provide an education of progressively high quality for all learners"[101]. Schools in South Africa are catagorised into quintiles based on the socio-economic factors of the community, including rates of income, unemployment and illiteracy. Quintile 1 represents the poorest schools and quintile 5 the least poor.

Schools quintiles are decided on by a national poverty table. The National Poverty Table is prepared by the Treasury, which determines the poverty ranking of areas based on data from the national census, and include income levels, dependency ratios and literacy rates in the area. Provinces then rank schools from quintile 1 to 5, according to the catchment area of the school. Each national quintile contains 20% of all learners, with quintile 1 representing the poorest 20% and quintile 5 the wealthiest 20%.

The quintile ranking of a school is important because it determines the no-fee status of the school. Schools that have been determined to be poorer are given larger state subsidies ('school allocations') and so have lower school fees, while schools that are perceived as wealthier are given smaller subsidies and so have higher fees. Each year, the Minister of Education determines the quintiles or parts of quintiles where schools may not charge compulsory school fees. In 2011, quintiles 1 and 2 were identified as no-fee schools. The policy requires that 60% of the available resources must be distributed to the poorest 40% of learners (i.e. quintiles 1 and 2).

While the quintile system has lead to some improvement, the legacy of apartheid continues to exist within the public school system of South Africa. Despite the increase in funding for lower quintiles, the schools in quintile 5 continue to radically outperform the other quintiles. (See section below on the Current State for performance results.)

The quintile system is a difficult and bureaucratic process. Since the system's implementation there have been complaints of incorrect quintile ranking. Incorrect ranking can lead to limited teaching resources, a lack of basic infrastructure, the inability to pay for basic services, the failure to pay for school security and an inability to participate in nutrition programs.[102]

Initial research commissioned by the Alliance for Children's Entitlement to Social Security (ACESS) in 22 schools across three provinces identified several challenges with the ranking of schools. The main areas of dispute were:

- **Outdated source data:** Spatial targeting it is not always

101   Department of Basic Education website: http:// www.education.gov.za/Newsroom/Speeches/tabid/298/ctl/Details/ mid/1390/ItemID/3184/Default.aspx

102   Hall, K, Giese, S (2009). Addressing quality through school fees and school funding. South African Chld Guage, 2008/2009 website: http:// www.ci.org.za/depts/ci/pubs/pdf/general/gauge2008/part_two/ quality.pdf

precise. The National Census[103] is the main source of national data that was used to determine the poverty score. The Census data is quickly outdated, especially in the context of urban migration.

- **Ranking errors:** In some instances schools in the same area are ranked differently, resulting in unequal allocations to schools serving the same community.
- **Failure to consider learner demographics:** Poor schools close to, or within, less poor areas are prejudiced by the relative wealth of their neighbours, and ranked in a higher quintile than should be appropriate. The ranking system only considers the physical location of the school and does not take into account learner demographics.
- **Masking inequality:** Quintile rankings can mask large disparities between schools that are ranked equally (within and across provinces).
- **Poor communication:** Poor communication and a lack of consultation leave schools and parents confused about each school's status and rank. Misleading statements by politicians about free education have added to the confusion, and resulted in parents refusing to pay fees.[104]

Non-Fee Schools

In the poorest areas of all, parents are exempt from paying school fees. A study by the SA Institute of Race Relations (SAIRR) showed that the number of non-fee schools in South Africa rose between 2008 and 2010. The study, that used information from Statistics SA, showed that non-fee schools made up 55% of all public schools, or 13 643 of 24 814 schools, in 2008. This rose to 60% non-fee schools in 2010, with 14 567 out of 24 532 schools not requiring fees. The statistics showed that the Free State had the highest percentage of non-fee schools in 2010, at 83%. Of the 1,636 public schools in the Free State, 1 354 were non-fee schools, up 34% from 2008. It was followed by Limpopo, at 71% in 2008 and 77% in 2010.[105] The SAIRR study showed that non-fee schools did not perform as well as low-fee school.

Table 11: Percentage of non-fee schools as a portion of each provinces total number of public schools in 2010 [SAIRR, 2012]

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103   In 1996 the post-apartheid government conducted its first population census. This was followed by a census in 2001. The next census was scheduled for 2006, but because Statistics South Africa was not in a position to conduct a successful census, this was rescheduled and completed in 2011. A Community Survey took the place of the 2006 census: http://www.statssa.gov.za/census2011/intro.asp

104   Hall, K, Giese, S (2009). Addressing quality through school fees and school funding. South African Chld Guage, 2008/2009 website: http://www.ci.org.za/depts/ci/pubs/pdf/general/gauge2008/part_two/quality.pdf

105   http://www.news24.com/SouthAfrica/News/More-no-fee-schools-in-SA-SAIRR-20120723

Province	% of non-fee schools per total public schools
Free State	83%
Eastern Cape	67%
Northern Cape	67%
North West	55%
KwaZulu-Natal	53%
Mpumalanga	52%
Western Cape	46%
Gauteng	22%

Allocation of funds per learner

A school in quintile 1 is said to be the poorest of schools, taking into account the socio-economic status of the community around that school including; poverty, unemployment, dependency on social grants. The opposite will apply for a quintile 5 school, with everything that characterises an up market suburb community with well off facilities.

The Department of Education also sets the 'adequacy benchmark', which is what it considers the minimal adequate amount of money necessary for a learner to access his or her right to basic education. In 2011 the poorest quintile of schools, quintile 1, receive an allocation of R901 (E65) per learner per year and the wealthiest quintile 5 is R155 (E11). It is important to clarify that these amounts are not the total amount of money spent on the education of each learner as schools, can fundraise additional funds, but merely represent the amount allocated by the state for each learner (SPII, 2011)

Regional Education Comparisons of budget vs. effectiveness

In 2011 the national expenditure on public education in South Africa was 17.59% of the total government expenditure. South Africa's budget for 2012-2013 education makes up for 15% of the national budget. Basic education remains the largest piece of South Africa's budget[106]. In 2010 public education in South Africa was 5% of the Gross Domestic Product (GDP)[107].

In 2011, a SACMEQ study[108] compared the education of Botswana, Mozambique, Namibia and South Africa. South Africa and Botswana, despite both being well-resourced and spending roughly the same

106   Department of Basic Education. (2012). Annual report 2011/2012: Department of Basic Education website: http://www.education.gov.za/LinkClick.aspx?fileticket=Yl%2bhMxe4mVU%3d&tabid=358&mid=1263

107   World Bank, (2012). Public spending on education, total (% of government expenditure) retrieved: World Bank website: http://data.worldbank.org/indicator/SE.XPD.TOTL.GB.ZS

108   Spaull, N. (2011) Primary School Performance in Botswana, Mozambique, Namibia, and South Africa Primary School Performance in Botswana, Mozambique, Namibia, and South Africa (Working Paper No. 8) Retrieved from: Southern and Eastern Africa Consortium for Monitoring Educational Quality website: http://www.sacmeq.org/downloads/Working%20Papers/08_Comparison_Final_18Oct2011.pdf

amount, on average Euro 940[109] per pupil per year, South Africa grossly underperformed when comparing reading and math scores.

The study showed that the amount of money spent on the average Mozambican child in primary school per year is only 6.4% (Euro 62) of what is spent on the average Botswana or South African child (approximately Euro 940), and 11.8% of what is spent on the average Namibian child ($668). Figure 3 below shows the average maths and reading performance for Botswana (B), Mozambique (M), Namibia (N) and South Africa (S) with each bubble being weighted by the public per pupil spending in that country.

Figure 3: Regional comparisons between maths and reading performance
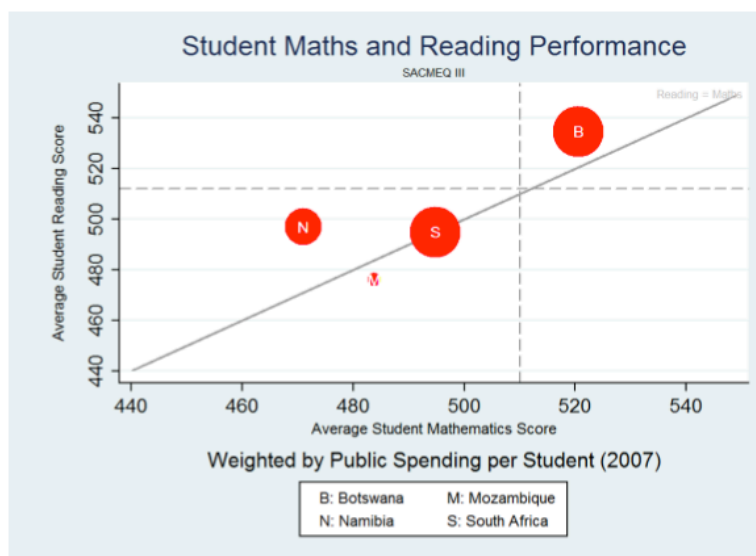
Spaull, 2011

Teachers

Teachers are pivotal members in any education system. They bear the weight and responsibility of teaching, and, apart from parents, are the main source of knowledge and values for children. In South Africa, faced daily by 'multiple and complex challenges' teachers seem to bear the brunt of the education systems' problems.

In 2011, there were 439,394 educators in South Africa serving grades R to 12. Of these, 187,520 educators work at teaching children in grades R to 7, which amounts to 43% of all educators teaching in primary schools[110].

The gender composition from 2006 to 2008 in South Africa shows that the workforce of school based educators consists of 67% female and 33% male, which points to a marked and consistent gender

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109   Exchange rate calculation on 21 November 2012; rate: 1 USD = 0.783645 EUR

110   Department of Basic Education. (2012) School Realities 2012 Retrieved from: Department of Education South Africa website: http://www.education.gov.za/LinkClick.aspx?fileticket=MMXRVCugRQ4%3d&tabid=93&mid=1952

disparity[111]. Further, the teacher age profile shows that more than two thirds of South Africa's teachers are over 40 years old[112].

According to a report released by the Centre for Development and Enterprise (CDE) in September 2011, South Africa is in dire need of good, skilled teachers. The report shows that South Africa needs to increase its output of trained teachers by 15,000 annually to meet the requirement of 25,000 new teachers per year[113].

Training

There are two routes to becoming an educator in South Africa. It can be achieved either through a four year Bachelor of Education degree or a three-or four-year Bachelor's degree, followed by a one-year Postgraduate Certificate in Education.

Currently, there are 22 public higher or tertiary education institutions in South Africa that offer teacher qualifications distributed across eight provinces. This includes the University of South Africa (UNISA), which offers remote education, and is the largest educator of teachers in South Africa[114].

During apartheid teacher training was segregated along the same racial lines as learner education. One of the largest changes the ANC government made to education was closing all teacher colleges and moving the courses to universities in an attempt to increase the quality of learning for educators. The government felt university training would provide a better standard of teaching. However, universities have proved unable to produce teachers in sufficient numbers and too few teaching graduates are willing to move to impoverished rural communities[115].

In 1994 there were over 120 teacher colleges across South Africa that resulted in 71,000 students studying to be educators. In 2010 there were 25 universities that offered teacher qualifications and

111   South African Country Report: Progress on the Implementation of the Regional Education and Training Plan SADC and COMEDAF V website: http://www.education.gov.za/LinkClick.aspx?fileticket=B3Ql1NJKS3g%3D&tabid=422&mid=1261

112   Value in the Classroom: the quantity and quality of South Africa's teachers. Centre for Development and Enterprise September 2011 website: http://www.cde.org.za/article.php?a_id=406

113   Value in the Classroom: the quantity and quality of South Africa's teachers. Centre for Development and Enterprise September 2011 website: http://www.cde.org.za/article.php?a_id=406

114   Spaull, N. (2011) Primary School Performance in Botswana, Mozambique, Namibia, and South Africa Primary School Performance in Botswana, Mozambique, Namibia, and South Africa (Working Paper No. 8) Retrieved from: Southern and Eastern Africa Consortium for Monitoring Educational Quality website: http://www.sacmeq.org/downloads/Working%20Papers/08_Comparison_Final_18Oct2011.pdf

115   Mundy, S. (2011). Education: Decline of standards leaves learners at the bottom of the league. FT.com. Reports, October. Retrieved: Financial Times website: http://www.ft.com/intl/

10,000 students enrolled in the education department[116]. Further, the education system must also contend with the reality that over 25% of newly qualified teachers immediately pursue other professions, or emigrate[117].

In April 2012 Higher Education and Training Minister Blade Nzimande announced that his department would be reopening three teacher training colleges in 2013. The three colleges are the Ndebele College Campus in Mpumalanga for foundation phase teacher education, and one former teacher training college each in Kwa-Zulu Natal and the Eastern Cape[118].

Educator Knowledge

The effectiveness of training that the educators currently received has also been called into question. The Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) has compared educator knowledge across each of its fifteen member countries[119]. South African educators rank 6th out of 15 for reading content knowledge and 9th out of fifteen for mathematics content knowledge. South African teachers have, on average, more tertiary education and training than most of their SACMEQ counterparts[120].

Research dating back to 2005 demonstrates that although 16,581 mathematics teachers were present in the Eastern Cape, only 7,090 were teaching the subject. However, of those that were teaching mathematics, 5,032 were not qualified to do so[121].

Figure 4: Teacher Reading and Math Scores by country [SACMEQ III, 2011]

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116   Equal Education, (2011). Teachers and the Teaching Profession. Website: http://www.equaleducation.org.za/sites/default/files/Fact%20Sheet%202_Teachers%20and%20the%20Teaching%20Profession.pdf
117   Value in the Classroom: the quantity and quality of South Africa's teachers. Centre for Development and Enterprise September 2011 website: http://www.cde.org.za/article.php?a_id=406
118   South Africa Former teacher training colleges to be re-opened. http://7thspace.com/headlines/410824/south_africa_former_teacher_training_colleges_to_be_re_opened.html
119   The Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) is made up of Botswana, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania (Mainland), Tanzania,(Zanzibar), Uganda, Zambia, and Zimbabwe.
120   Southern and Eastern Africa Consortium for Monitoring Educational Quality. (2012). A study of the conditions of schooling and the quality of education. Retrieved: SACMEQ website: http://www.sacmeq.org/downloads/National%20Reports%20SIII/S3_South_Africa_Final.pdf
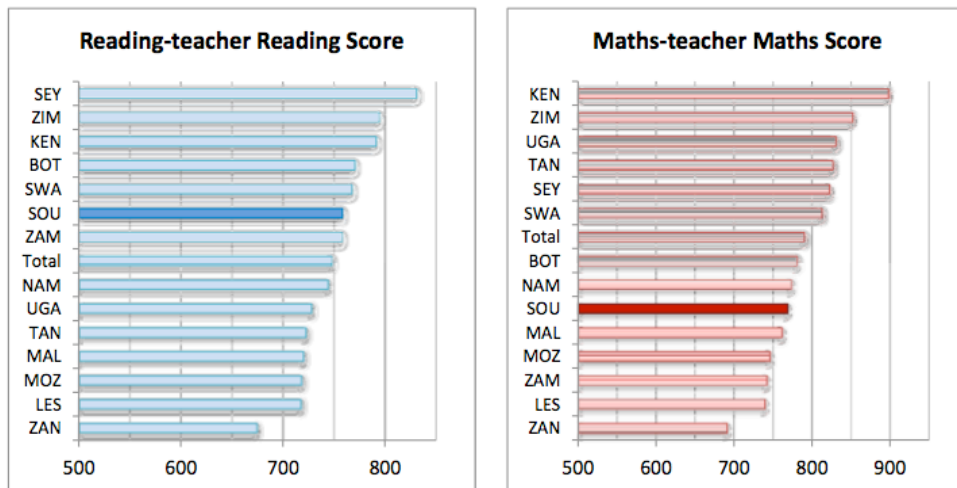121   Value in the Classroom: the quantity and quality of SOuth Africa's teachers. Centre for Development and Enterprise September 2011 website: http://www.cde.org.za/article.php?a_id=406

Reading-teacher Reading Score

SEY, ZIM, KEN, BOT, SWA, SOU, ZAM, Total, NAM, UGA, TAN, MAL, MOZ, LES, ZAN (500 – 800)

Maths-teacher Maths Score

KEN, ZIM, UGA, TAN, SEY, SWA, Total, BOT, NAM, SOU, MAL, MOZ, ZAM, LES, ZAN (500 – 900)

Educator Morale

Research by Equal Education has found that educators had too many admin tasks. The 2011 report claimed "they said they were confused about their role as educators. 55% of teachers say they would quit if they could. This is because of stress, low salaries, lack of discipline in schools and feeling stuck in their jobs.[122]"

Equal Education found that teachers in poor schools were often met with:

- Parents who did not receive a quality education and were therefore unable to help their children with their homework.
- Learners who didn't have books at home or see their parents reading books. Their parents also didn't read to them when they were young.
- No stocked library, media centre or computer room.
- Over-crowded classrooms, sometimes as many as 90 learners in one classroom.
- In extreme cases, such as the mud-schools in the Eastern Cape, teachers (and pupils) had no access to running water, electricity or toilets.
- A shortage of books, teaching material, support and admin staff.
- If he/she works in a secondary school most of her learners fail matric.

Educators interviewed across South Africa indicated a system-wide lack of accountability amongst educators. They reported that educators did not work regular hours, there was poor attendance and did not use their time effectively. Government studies have reported that many teachers come late, leave early, spend only 46% of their time teaching each week, and hardly teach at all on

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122   Equal Education, (2011). Teachers and the Teaching Profession. Website: http://www.equaleducation.org.za/sites/default/files/Fact %20Sheet%202_Teachers%20and%20the%20Teaching%20Profession.pdf

Friday[123].

Some of the educators that were interviewed by Equal Education researchers expressed that there was a lack of passionate educators who were willing to explore new or different ways to deliver the syllabus. In our interviews one educator at an Eastern Cape urban school with low income students expressed a lack of basic educational infrastructure as the greatest barrier to learning.

In general, there is a lack of pride in their work across all low to middle income educators in South Africa. This is reflected by society at large with the teaching profession not being highly regarded. As well, due to very strict labour laws and a strong teachers union, it is difficult to discipline or fire a poor achieving educator.

In 2011, SACMEQ reported on its 2007 study which found that the average Grade 6 learner in South Africa was taught by a teacher who was absent approximately 19.7 days a year[124]. This amounts to roughly an entire month of school time. The provincial differences were large, with learners in the Western Cape and Gauteng experiencing less teacher absenteeism (around 12 days) than learners in KwaZulu Natal and Limpopo, where the corresponding figures are 25.4 and 24.2 days respectively.

A similar trend is seen when comparing quintile 1–4 learners (the poorest 80%) with quintile 5 learners (the richest 20%) in South Africa. In the report, quintile 1–4 learners experienced almost three times as much teacher absenteeism (22.4 days) compared to quintile 5 learners (8.1 days). The figure below shows the contrast in teacher absenteeism by quintile.

Figure 5: Teacher absenteeism by quintile (2007) [SACMEQ III]

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123   Value in the Classroom: the quantity and quality of South Africa's teachers. Centre for Development and Enterprise September 2011 website: http://www.cde.org.za/article.php?a_id=406

124   Spaull, N. (2011) Equity & Efficiency in South African Primary Schools A Preliminary Analysis of SACMEQ III South Africa. Retrieved: University of Stellenbosch, website: http://scholar.sun.ac.za/handle/10019.1/20184

SACMEQ III South Africa
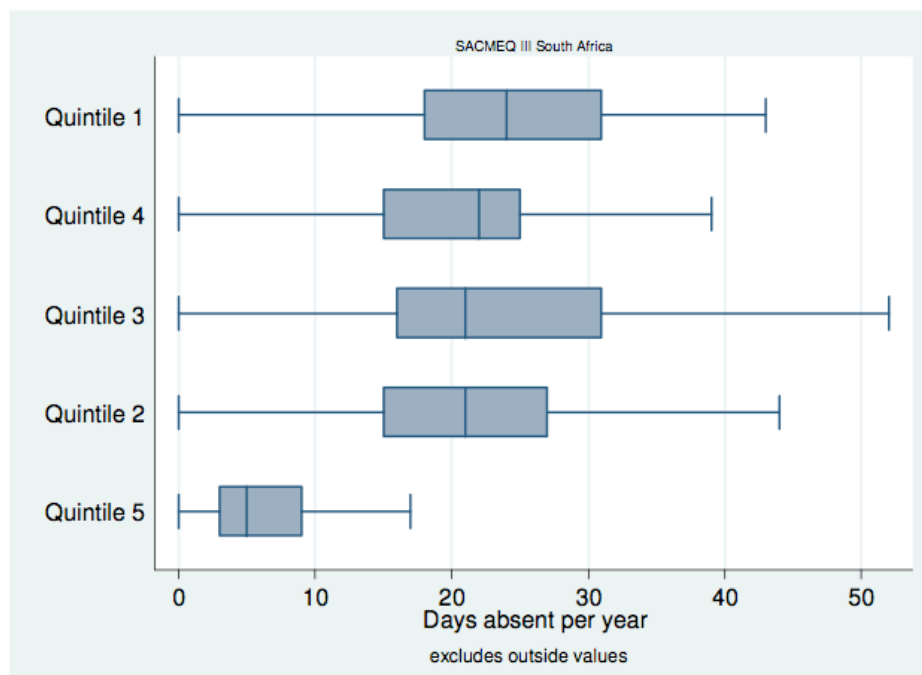
A study conducted by the Human Sciences Research Council (HSRC) in 2010 found that 20% of teachers in South Africa are absent on Mondays and Fridays. Rates increase to one-third by the month's end. Teachers in predominantly black schools teach an average of 3.5 hours per day compared with 6.5 hours per day in historically white schools[125].

Discretionary absence (short duration and not requiring a medical certificate) rates are higher on days adjacent to non-instructional days (weekends, public holidays or just before vacation). A high proportion of absences are ascribed to illness which occurs in blocks of time short enough that no medical certification is required. There is evidence that "schools with strong leadership by principals who insist educators come to school on time, properly use class time and remain sober have achieved good test results[126].

Infrastructures

Basic infrastructure remains a challenge across schools in South Africa. To date there are 446 mud schools, all located in the Eastern Cape. Only 86% of schools have electricity and there are 913 schools in South Africa that do not have basic toilet facilities The following is a breakdown of basic infrastructure in South African schools

125   Reddy, V., Prinsloo, C.H., Netshitangani, T., Moletsane, R., Juan, A. & Janse van Rensburg, D. (2010) An investigation into educator leave in the South African ordinary public schooling system. (HSRC, Commissioned by UNICEF, for the Department of Education, July).

126   Saunders, S. (2012). A Sad State of Teaching Affairs retrieved: Mail & Guardian website: http://mg.co.za/article/2011-07-08-a-sad-state-of-teaching-affairs

provided by the Department of Basic Education in 2011[127].

Access to Electricity
- With Electricity – 86%
- Solar Electricity – 1,866
- Generator on Sites – 119
- Municipal Grid – 19,480
- No Electricity – 14%
- Unreliable Electricity .03%

Access to Water
- With Water Supply – 90%
- Borehole / Rain Harvesting on Site – 37%
- Communal Water Supply on Site – 17%
- Mobile Tankers Water – .05% (1198)
- Municipal Water – 39%
- No Water Supply – 10%
- Unreliable Water Supply – 10%

Absolutions
- Municipal Flush – 32%
- Septic Flush – 10%
- Enviro Loo – .05% (1294)
- VIP (pit latrine with ventilation pipe at the back of the toilet) – 20%
- Pit Latrine – 47%
- Chemical – .006% (155)
- No Facility – .04% (913)

Section27 the legal representative of Equal Education launched a case against the Department of Basic Education to establish basic norms and standards in South Africa's schools. Equal Education felt that the South African Schools Act gives the Minister of Education the power to create regulations (norms & standards) for school infrastructure.Having such a bylaw gives the students, educators and school the legal mechanism to hold the provincial department of education responsible in making sure they are supplied with the necessary infrastructure and resources. November 2012 Section27 struck a deal with the Department of Basic Education from May 2013 the Department of Basic Education will have to establish and abide by norms and standards. The standards will include but not be limited to; the availability of classrooms, electricity, water, sanitation, a library, laboratories, recreational facilities, internet connectivity and fencing[128].

Textbook review

The Department of Basic Education (DBE) has stated that each student in South Africa is entitled to a textbook. The textbooks are

127   http://www.education.gov.za/LinkClick.aspx?
       fileticket=hHaBCAerGXc%3D&tabid=358&mid=180
128   http://www.bdlive.co.za/national/education/2012/11/21/
       agreement–on–basic–standards–for–schools

distributed by the DBE as part of their Learning and Teaching Support Material (LTSM).

- In 2011 the DBE redesigned the primary school workbooks to provide more local language and relevancy. Each home language workbook provides 128 worksheets, with each workbook divided into two volumes of 64 worksheets each (Terms 1 & 2 and Terms 3 & 4) includes
- 4 worksheets per week
- 8 weeks per term
- 2 terms per volume
- They are labelled per term and week[129]

The new workbooks are designed to support every child in maths and language. Specifically to

- To pace the learning
- To assist teachers to cover the curriculum
- They assist the teacher to manage teaching time
- To monitor the tasks that children do in the workbooks
- To assist teachers in identifying learners needs for extra support early in the year
- The worksheets are intended to assist busy teachers who have large classes and who won't necessarily have the resources needed to make their own worksheets.
- They will assist with teaching multilingual classes.
- They will be useful for multi-grade classes and for teaching mixed ability groups.

The Department of Basic Education (DBE) determines the textbooks that may be ordered by any school in the system. After a lengthy submissions process by publishers, the DBE creates a list of sanctioned textbooks that schools may order. Titles are chosen if they ensure uniformity and conformance with the curriculum. The DBE also fixes the prices that the publishers charge. Each school determines which of the approved titles best suit their needs, and places an order with the local education authority. These orders are then collated and presented to the DBE for budgetary approval. Once this process is finalised, the books are ordered and delivered. however, the delivery of textbooks has become a point of contention across the country.

Textbooks per Learner

In 2007 the average Grade 6 learner in South Africa was in a school where 45% of the learners had reading books and 36.4% had mathematics textbooks. This means that Grade 6 learners were in schools where 55% of them either had no reading book or shared a book with someone else. For mathematics textbooks the situation was worse with the corresponding percentage being 64.6%. The situation, regarding Reading and Maths, remains unsatisfactory in most provinces.

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129   Working Workbooks: the problem: learner achievement in the ANAs Maths and Languages

Textbook Distribution

The National School Monitoring Survey, a report released in May 2012, shows that the distribution of textbooks delivery and monitoring (that the crisis in Limpopo highlighted below) afflicts the whole country. The survey found that:

- Only 38% of grade 6 has access to a language workbook. The Free State was best supplied (72%), and Limpopo the worst (11%).
- 85% of grade 6 have maths workbooks.

However, the national average regarding the distribution of workbooks is misleading and conceals provincial discrepancies. In Gauteng, North West and the Western Cape, 88% of students had language and maths books, but only 69% of Mpumalanga pupils. Some schools did not receive books at all, or too late, or not enough, and some received books in the wrong language. "In the absence of textbooks, learners are often exposed to only fragments of the curriculum, presented through standalone worksheets or isolated short exercises," the report states[130].

The Limpopo Textbook Crisis

This ongoing situation came to crisis point in mid-2012 when a textbook delivery scandal was revealed in Limpopo Province. Half way through the year, it was discovered that the textbooks intended for the 2012 school year had not yet arrived, that would negatively prejudice the students' end of year results.

Rumours and accusations ran rampant, but the main reasons for lack of delivery were put down to two factors. The first was that the money that had been ring-fenced to buy textbooks for the 2012 school year was reallocated in mid-2011 by the Limpopo government and so the textbooks could not be ordered in time. Although emergency funding was sought from the treasury, it was not received in time. To exacerbate the budgetary shortfall, schools did not receive either the amount of textbooks they requested, nor the titles they want, as the DBE ordered cheaper alternatives. Secondly, although some of the books had made it to the Province, many of the books did not make it to the schools that needed them, and were bizarrely found either discarded or burned.

In November 2012, the rights group Section27 put pressure on the DBE to supply an adequate timeline of textbook delivery for 2013. Section27 filed three successful court actions against the DBE over the seven month delay in textbook delivery in Limpopo. The DBE has been ordered to deliver 5.5 million Curriculum and Assessment Policy Statement aligned textbooks to 3 ,950 High and Primary Schools in the Limpopo Province, before 14th December 2012 for the 2013 school year. These textbooks are to be used by learners in Grades 4-6 and 11.

The deadline of the 14th December 2012 was set by the North

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130   MacFarlane, D. (2012) Textbook Crisis: damning report fails Motshekga retrieved: Mail & Guardian website: http://mg.co.za/article/2012-07-12-damning-report-fails-motshekga

Gauteng High Court. Section27 actions are responsible for putting the Limpopo textbook scandal onto South Africa's National Agenda[131].

Alternative solutions to the traditional publishers

In 2012 Siyavula, a Cape Town-based Open Access publisher, began supplying the Department of Basic Education with Grade 10, 11 and 12 Maths and Science textbooks for R40 each. A set of Grade 4-6 Natural Sciences and Technology books was submitted for approval to the DBE in late 2012, with an expected purchase price of R90.[132]

The textbooks have been created through community weekend workshops, with community members donating their time to write, edit and translate the content for each textbook. The books are published through a Creative Commons By-Attribution[133] licence. While downloaded books are free, Siyavula's methodology allows for a vast reduction in printed book prices with prices being further reduced by the size of the combined print-run.

The project also allows learners from Grade 10 to 12 to download digital version of the books for free from a website[134]. The books can be viewed on their iPads, computers, mobile phones, printed hardcopies and in-class projectors. The books can also be used on Mixit[135]. Siyavula's innovative project is only just begun to roll out in its printed, downloadable and practice online services. Statistics on take up have yet to be compiled.

ICT in South African Schools

Information and Communication Technologies (ICT) in Education are considered part of the solution for addressing the needs of developing countries. They can help improve basic administration tasks, including the registration of learners, handling learners records and marks as well as easier access to learning and teaching materials online. However, ICT being accessed and used by learners provide myriad benefits, including access to support or extra-curricular knowledge, and preparation for an extensively computerised world. The DBE has focused a lot of attention and

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131   Gernetzky, K. (2012). Limpopo Textbook Plan Gets Cautious Welcome from Section27 retrieved: Business Day Live website: http://www.bdlive.co.za/Feeds/BusinessDay/2012/11/07/limpopo-textbook-plan-gets-cautious-welcome-from-section27

132   http://projects.siyavula.com/siyavula-blog/

133   The Creative Commons copyright licenses and tools forge a balance inside the traditional "all rights reserved" setting that copyright law creates. The Creative Commons By-Attribution requires for free use of all content, as long as the source of the original contribution is attributed to the authors.

134   Siyavula books are able to be viewed here: http://projects.siyavula.com/technology-driven-learning/

135   Mobile-based, Mxit is South Africa's largest social network with over 10 million active subscribers in South Africa. 70% of Mxit's subscribers are between the ages of 15 and 25. Mxit is available to anyone with a WAP-enabled phone and works on almost kinds of 3000 mobile handsets.
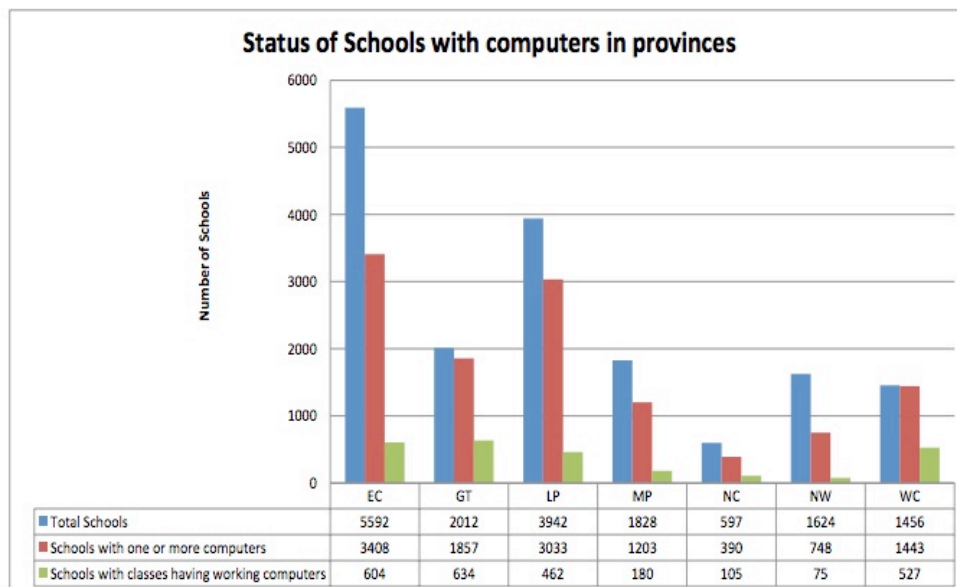
budget to improving ICTs across the country.

According to the Strategic Plan 2011–2014 of DBE, six areas of focus have been identified in the National Implementation Strategy for e-Education from the eEducation White Paper,

- Electronic Multimedia Resource Development and Distribution;
- ICT professional development for management, teaching and learning;
- ICT Teacher Development Levels;
- ICT Infrastructure;
- Connectivity; and
- Research and Development.

In 2004 the DBE released its White Paper on e-Education. Since this white paper, gradual progress has been made towards providing ICT infrastructure to schools. In 2010, nationally (excluding KwaZulu Natal and the Free State who did not have enough school to provide adequate reporting) only 2,587 (15%) of schools had classes with working computers in them and 12,082 (71%) of schools had one or more computers in them.

Figure 6: Status of Schools with Computers in Provinces [Graph from Survey of ICT in Schools in South Africa 2012]

Status of Schools with computers in provinces

	EC	GT	LP	MP	NC	NW	WC
Total Schools	5592	2012	3942	1828	597	1624	1456
Schools with one or more computers	3408	1857	3033	1203	390	748	1443
Schools with classes having working computers	604	634	462	180	105	75	527

There has been drastic increase in the number of ICTs in school from the 2004 White Paper and ICT in Education survey data of 2010, the Western Cape (99%), Gauteng (92%) and Limpopo (72%) all had a high percentage of schools with at least one computer in a working condition.

Figure 7: ICTs in Schools 2004 & 2010 [Graph from Survey of ICT in Schools in South Africa 2012]
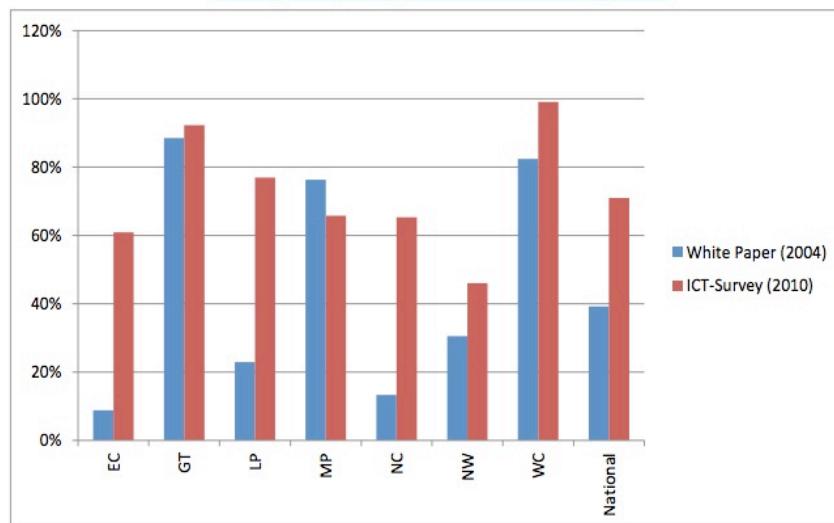
However, this number does not detail if students have access to computers. It has been generally found that these computers remain in the office and are used for admin support. Figure 8 below shows the per capita distribution of computers per 1000 learners by quintile. This indicates that in the more affluent schools there are significantly more computers per 1000 learners than in the less affluent schools.

Figure 8: Per Capita Distribution of Computers per 1000 Learners by Quintile
[Graph from Survey of ICT in Schools in South Africa 2012]
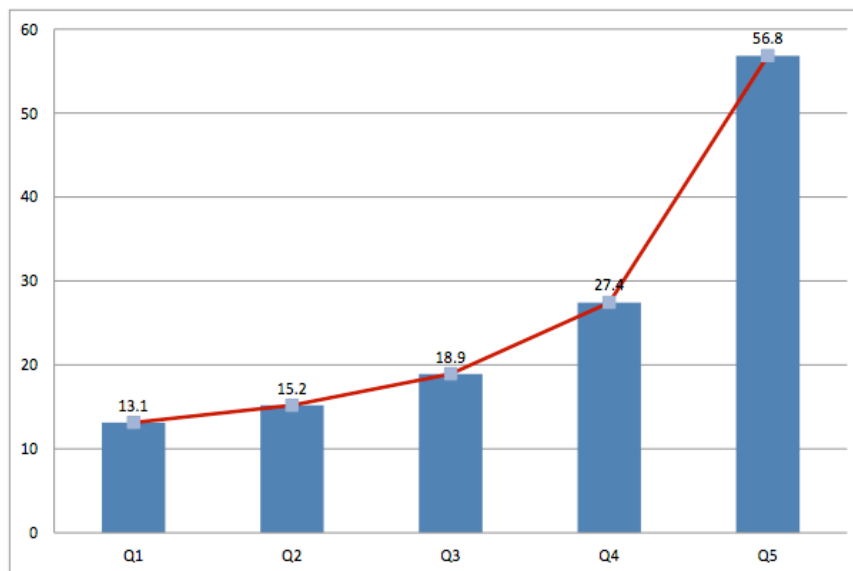
The 2012 survey also revealed that nationally, of the schools that responded, on average 31% of schools have internet connectivity through Dial–up, ISDN, and ADSL 3G. Again provincial results identifies the Western Cape as having the highest level of connectivity with 99% of schools being connected. In Gauteng this figure drops to 61% of schools, Limpopo has 17% of schools connected , Mpumalanga 16% and finally the Eastern Cape has the lowest percentage of schools with connectivity at 13%.

Access to computers and the Internet is important for the development of the knowledge (digital) economy, but as indicated in the 2010 survey results it is limited in schools in most provinces in the country. The White Paper on e-Education (2004) states that "Internet access is becoming more common, but the use of the Internet for teaching and learning purposes is very limited, due to high connectivity and telecommunication costs, lack of local content and examples, and inadequate technical and pedagogical support at local levels". The ICT in Education survey results reveal that for the schools that responded, a very low percentage (6%) have classrooms with computers connected to the Internet. The percentage of schools where computers are used for teaching and learning purposes ie computer labs (9%) and computer labs specifically for CAT/IT (16%) is relatively low.

Table 12: ICTs in Schools by province and location of ICTs within the school [Data from Survey of ICT in Schools in South Africa 2012]

Province	Total Schools	Schools that Responded	Classrooms	Admin Offices	Computer Labs	Computer Labs for CAT/IT
EC	5592	5150	3%	13%	3%	6%
GT	2012	1978	8%	54%	20%	44%
LP	3942	3696	3%	13%	4%	5%
MP	1828	1465	7%	21%	6%	9%
NC	597	582	3%	21%	5%	8%
NW	1624	952	9%	36%	10%	13%
WC	1456	1455	24%	89%	31%	51%
TOTAL	17051	15278	6%	28%	9%	16%

Conclusion

World Economic Forum's 2012–13 World Competitiveness Report[136] released in November 2012 listed South Africa three most problematic factors as:

- Inadequately educated workforce,
- Restrictive labour regulations, and
- Inefficient government bureaucracy.

The report rated South Africa's primary education at 132 out of 144. The overall quality of education of South Africa as 140 out of 144 and internet access in schools as 111 out of 144. There is no doubt that South Africa is amidst a crisis in education, that should be treated with the same severity as the HIV/AIDs epidemic.[137]

Factors that point to a crisis include:

- There are large dropout rates, which results in many children not achieving matric, and relatively few achieving tertiary level.
- Sexual assault and violence in schools is on the rise.
- The quality of education delivery across the system is deficient: schools are deprived of resources, facilities and qualified teachers.
- Schools have inadequate basic infrastructure: electricity, permanent buildings, latrines, etc.
- Pupils and educators have insufficient access to learning resources.
- There is insufficient access for pupils to nutrition, often resulting in growth problems.
- A significant portion of pupils live in poverty, with the subsequent lack of social or parental support.138
- A significant number of children are in grades that do not reflect their age.
- Parent education levels are low resulting in a lack of understanding of school work.
- Students are often not able to complete homework due to household chores being seen as higher priority.
- The impact of HIV, child–led households, HIV positive educators, single parent households, etc. is significant and debilitating.
- Educators are predominantly female and in South Africa

136   Klaus Schwab, World Economic Forum, The Global Competitiveness Report 2012-2013, http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2012–13.pdf

137   The situation is so complex, extensive and pervasive, that many of the issues that are detailed below have not been fully covered in this report.

138   For statistics and more information on these elements of influence, please look at the following fact sheet: http://www.population.gov.za/pop_dev/images/2012factsheets/state%20of%20children%20in%20south%20africa%20factsheet.pdf

- females are generally the household caregivers which can lead to an increase in absentee days.
- Educator absenteeism is rife, with little self-discipline schools, inefficient use of time and low morale.
- Teaching is not viewed as an aspirational career.
- Education is not highly prized by society in general.
- Teachers union are often viewed as 'militant' rather than 'professional' and do little to raise the morale, pressures or working conditions of Teachers.
- Learners are leaving secondary education without the requisite skills to enter the job market, or the academic grounding for tertiary education.
- The cost of the failed Outcomes Based system of education (officially scrapped in 2010) is too high to calculate. The significant money time and energy that wasted should have been focused on building infrastructure, facilities and teacher training.

Education plays an important role in breaking the poverty cycle in South Africa. The Children's Institute, a think tank based out of the University of Cape Town, outlines three broad areas that need to be addressed in order to reduce inequality in education between South Africa's rich and poor. These are:

1. Environment

- Providing nutrition programmes that assess all students based on need, rather than on the quintile rating, in order to capture all students that require nutritional support.
- Ensure that all schools have basic infrastructure, which includes toilets, electricity and water.
- Provide effective teachers, including upgrading skills of teachers within the system and ensuring that they can teach the subject assigned to them.

2. Accountability

- The recent establishment of the National Education Evaluation and Development Unit (NEEDU) and the Planning and Delivery Oversight Unit (PDOU). The NEEDU is tasked with identifying factors that are inhibiting school progress and formulating solutions. The NEEDU reports directly to the Minister of Basic Education. The PDOU is focused on improving curriculum delivery and learner achievement at the district school office level.
- The proposed South African Institute for Vocational and Continuing Education and training would provide support to educators needing skills upgrades.

3. Assessment

- Early intervention is the key to ensuring children are not left behind in school. The recently implemented Annual National Assessments will help to ensure children are not left behind.
- In 2014 all children will be required to attend grade R

which is currently only optional for parents.

It is important to note that in South Africa, poverty is strongly associated with the performance of each pupil. However, many school systems within the region achieve higher quality education for their learners with far fewer resources than South Africa's education system.

Because the challenges of providing quality education in South Africa is such a multifaceted problem, there is no one solution and an integrated mixed model solution would be required. Stakeholders in education estimate that the damage done to basic education would take a century to overcome if adequately corrected tomorrow.

In WikiAfrica's interviews with key stakeholders across South Africa, a number of gaps in the primary ecosystem arose. These gaps could be narrowed through possible ICT interventions and projects. Below are just some of gaps and the ICT solutions that have been posited:

1. A centralised portal that maps and communicates the Education Ecosystem

In the interviews, several stakeholders commented on a lack of knowledge across the country of the various education projects. This refers to a lack of a centralised database that maps, records and reports on the abundance of work and projects, NGOs, Provincial Government projects, and localised projects working to supporting the education system in South Africa. Currently there is no way of effectively sharing that information, any data, or detail best practices.

A database of the ecosystem of South African primary education would allow educators to share information and best practices more efficiently. By building a searchable database of all ongoing NGOs, government projects, for profit organisations anyone who is involved in primary education, educators, researchers, principals, industry leaders would be able to work together and share research. Currently everyone is working in silos there is no current tool available to easily share information.

2. Focus Open Education Resources (OER) on the Primary Sector

'Matric' exams are given such high prestige in the media, and are used as the benchmark of education in South Africa, as such the majority of support and infrastructure (as well as NPO projects) tends to be aimed at senior school students. Further, although Open Education is taking hold in South Africa, and across the continent, there are hardly any OER aimed at Primary Schools.

This indicates a significant and obvious gap in the market to provide support to primary education learners and educators. OER Africa has a database to provide online catalogue of OER tools for educators in Africa[139]. Currently there is very limited educational artifacts dealing with primary school education. As of 2012 there are four artifacts dealing with mathematics in the primary school curriculum.

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139   http://www.oerafrica.org/ResourceResults/tabid/1562/mctl/
       Details/id/38975/Default.aspx

Creating and build OER tools designed to assist and support educators would help to alleviate pressure on overburdened educators in South Africa. It can also be assumed that the core primary school curriculum does not vary wildly across the continent and so this kind of development would support school systems across Africa.

3. Leveraging technology to assist with Adult Education

Due to the pervasive and dismal education that children have received over the last ten years, around 15,437,336 of the population are recent or soon-to-be school leavers between the ages of 15 and 29 years. The evidence contained within this report points to the fact that this 30% of the population would have received a substandard education.

Basic education, with literacy and numeracy as core elements, is a foundation for raising living standards, fighting gender inequities, increasing entrepreneurship, and generally empowering poor communities to act more effectively in pursuit of their goals. In too many African countries, improvement and expansion of the primary school systems alone will not reduce adult illiteracy quickly enough to meet development objectives. The problem of illiteracy must be addressed not only by providing education to children of primary school age, but also through effective Adult Basic Education (ABE) programs.[140]

One way to remedy this situation, and its potentially catastrophic impact on South Africa's society, is to harness ICT (especially mobile platforms) to promote adult education, further learning and access to knowledge for this age group. (See point 6 in the How Wikipedia might specifically resolve issue section below)

4. Importance of local content support for the curriculum as Africa's population grows

In November 201, the United Nations children's agency released a study[141] that forecasts a 4% increase in the global population of children by 2025. The study explains that child population-growth is expected to shift significantly to countries in the South.

By 2050, "1 in every 3 births – and almost 1 in every 3 children under 18 – will be African", according to just one of the findings. This compares to only one in ten in 1950. In percentage terms, the top ten countries to see increases in child populations are all in sub-saharan Africa and are: Zambia (66%), Niger (64%), Malawi (63%), United Republic of Tanzania (57%), Somalia (50%), Burkina Faso (48%), Uganda (47%), Mali (46%), Rwanda (45%) and Nigeria (41%).

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140   Jon Lauglo, World Bank, Feb 2001: Engaging With Adults: The Case for Increased Support to Adult Education in Sub-Saharan Africa: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2001/06/01/000094946_01052204005370/Rendered/PDF/multi0page.pdf

141   Danzhen You, David Anthony; UNICEF's Generation 2025 and beyond: The critical importance of understanding demographic trends for children of the 21st century. http://reliefweb.int/sites/reliefweb.int/files/resources/Full%20Report_1152.pdf

The report continues: "To achieve universal primary education and other goals is more demanding in countries with fast growing child populations. In some Sub-Saharan African countries, the population of school-aged children will double between 2010 and 2025; this has major implications for provision of education and other essential services."

In 2011, there were 1,032,532,974 people living in Africa. It is estimated that 40% of the total population (or 413,013,190 children) is below the age of 15[142].

With almost one in three children in the world under the age of 18 being African, the demand for content that is local and truthfully reflects each country's multiple layers could not be more urgent or pertinent to this report. (See point 5 in the How Wikipedia might specifically resolve issue section below)

5. Pod/vodcasts of classes in various languages

With teacher teaching and delivery varying significantly across schools, one way that was devised to allow further support for both teachers and students alike, was to record the delivery of quality, well-resourced primary school classes for every subject and widely distribute these via mobile and other platforms in each language of instruction. This would allow for no-cost, time-relevant accessibility, help with homework while traveling to and from school (if downloaded to a mobile device), and reinforce concepts that have been covered in class, but not yet understood or absorbed by the pupil. These pod/vodcasts could also increase the educator's understanding of each subject, and perhaps promote enough professional pride to raise their collective game.

How Wikipedia might specifically resolve issues

1. There are too many large issues within the education system, especially the primary education sector, for WikiAfrica to ever hope to resolve. However, here are a few ideas of how intervention by WikiAfrica via Wikipedia might help to fix some of the knowledge issues.

2. In our interviews with educators across South Africa many commented that an offline Wikipedia would be beneficial to their work. Due to a lack of bandwidth and ICTs the students and educators could use an offline Wikipedia to help prepare lessons and to help students with lessons.

3. Other key stakeholders interviewed felt that the primary education system wasn't failing due to a lack of content. The educators and students have all the tools available to them to sufficiently pass and educate. What educators needs is more effective teacher development and 'how to' tools in order to provide more effective teaching.[143]

4. It was felt that the largest issues requiring prioritisation are

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142   https://www.cia.gov/library/publications/the-world-factbook/

143   We could not ascertained whether additional or supporting African or local content would be valuable to the teaching process or the understanding of key curriculum concepts.

remedying dysfunctional schools, in that many schools across South Africa do not have classes starting on time, they don't have an adequate environment for the students, etc. Before you can start providing additional content to the educators and students you need to first address the basic functionality of the schools. One way to do this, as suggested by one key stakeholder, was to focus on the educators and their personal development, instead of activating the students to 'contribute' to the curriculum on Wikipedia. By working with the teachers' colleges and teachers' unions, WikiAfrica could provide effective Wikipedia entries by training incoming educators to support the curriculum content, and this would then trickle down to the students. Further, by providing videos, training and other instructional tools, you would better influence the needs of the students, via the educators.

5. One stakeholder felt strongly that, until there is adequate IT resources and training for the educators to provide the educators with a basic understanding of how the internet and technology works, you won't be able to influence their teaching habits with a wikipedia-based curriculum. Ultimately it was felt that effective teachers are already using Wikipedia. The idea of providing curriculum-relevant content on Wikipedia, was seen as a good tool for helping good teachers move to become great teachers, but would not succeed in turning ineffective teachers into effective educators.

6. A small and scalable idea for Wikipedia to support primary education in South Africa would be to drive the South African history and geography sections within Wikipedia. By providing accurate, non-politicised, multi-layered, up-to-date history of South Africa you could then support WikiAfrica's mandates, the educators and the students.

7. While primary school is a priority, there is a need to educated learners once they've left the school system. With a 67% matric exam pass rate, the exam students write in their final year of school, this indicates that there is a large number of adults with less than basic education. Developing a project within Wikipedia that specifically supports adult learning would help to help foster respect for life-long learning in adults, would benefit children and help to create an ecosystem of learning.

6. Case Study Cameroon

History

Two separate systems of education were used in Cameroon after independence: East Cameroon's system was based on the French model, West Cameroon's on the British model. At the time, the architects of independence perceived the policy as a symbol of national integration between West and East Cameroon[144].

The two systems were merged by 1976, but studies suggest that the two systems still didn't blended together[145]. Shortly after the independence, French was considered the main language of the country, but with the rising of English as first commercial language in the world, the balance switched to the latter[146].

Christian mission schools have been an important part of the education system, but most children cannot afford them and are forced to choose state-run schools[147]. The country has institutions for teacher training and technical education. There is, however, a growing trend for the wealthiest and best-educated students to leave the country to study and live abroad, creating a brain drain.

Legislation

The Constitution affirms that "the State shall guarantee the child's right to education. Primary education shall be compulsory". The government has avoided the human rights language and has referred only to "equality of opportunity for access to education"[148].

Education is compulsory through the age of 14 years, when 6 years of primary schooling are complete. Primary school education is free (since 2000), but families must pay for uniforms, book fees, and sometimes even anti-malaria prophylaxis for pupils. Tuition and fees at the secondary school level, indeed very high, remain unaffordable for many families[149].

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144   A. Bame Nsamenang, Therese M.S. Tchombe, "Handbook of African Educational Theories and Practices", Human Development Resource Centre (HDRC), Bamenda, 2011, pp. 483-492.

145   Edith Esch, "English and French pedagogical cultures: convergence and divergence in Cameroonian primary school teachers' discourse", in Comparative Education, Vol. 48, No. 3, August 2012, p. 305.

146   Mark Dike DeLancey, Rebecca Neh Mbuh, "Historical Dictionary of Cameroon", Scarecrow Press, Plymouth, 2010, 4th edition, p. 70.

147   John Mukum Mbaku, "Culture and Customs of Cameroon", Greenwood Press, Westport, Connecticut, 2005, p. 15.

148   Katarina Tomasevski, "Free or Fee: 2006 Global Report – The State of the Right to Education Worldwide", Copenhagen, August 2006, p. 23.

149   "2005 Findings on the Worst Forms of Child Labor", U.S. Department of Labor, 2006. Available at http://www.dol.gov/ilab/media/reports/iclp/tda2005/tda2005.pdf

Statistics[150]

Expected years of schooling (on average)	10.3 yrs
Adult literacy rate (people aged 15 and more, both sexes)	70.7 %
Mean years of schooling (adults)	5.9 yrs
Education index	520
Combined gross enrolment in education (both sexes)	60.4

According to data available for 2011, 47.7 percent of girls and 56.7 percent of boys attended primary school. The low school enrolment rate was attributed to cost, with girls' participation further reduced by early marriage, sexual harassment, unwanted pregnancy, domestic responsibilities, and certain socio-cultural biases[151]. Domestic workers are generally not permitted by their employers to attend school[152].

A 2004 government study found there is a large gap between the capacity of the schools and the number of potential students. According to the study, preschools served only 16% of the potential student population. Within the school system, the northern provinces were the most underprivileged, with only 5.7% of all teachers working in the Adamawa, North, and Extreme North provinces combined. The study showed that elementary schools only had enough seats for 1.8 million students, although 2.9 million attended school[153].

After these findings, Cameroonian government launched a three-years programme to construct and renovate schools, improve teacher competency, and provide instructional materials[154], which was apparently renewed in 2010. Still problems are not to be considered resolved: embezzlement of education funds is considered the main problem in primary education; half of the state primary schools in the sample reported problems with their buildings (only 19% of schools have working toilets, 30% have access to a water tap, and barely 30% have enough tables and benches for students); absenteeism of teachers and poor implementation and

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150   "Cameroon – Country profile", UNDP. Available at http://hdrstats.undp.org/en/countries/profiles/CMR.html

151   "Country Reports on Human Rights Practices for 2011", U.S. Department of State, 2012. Available at http://www.state.gov/j/drl/rls/hrrpt/humanrightsreport/index.htm?dlid=186173

152   "2005 Findings on the Worst Forms of Child Labor", U.S. Department of Labor, 2006. Available at http://www.dol.gov/ilab/media/reports/iclp/tda2005/tda2005.pdf

153   "Country Reports on Human Rights Practices for 2006", U.S. Department of State, 2007. Available at http://www.state.gov/j/drl/rls/hrrpt/2006/78723.htm

154   "Country Reports on Human Rights Practices for 2007", U.S. Department of State, 2008. Available at http://www.state.gov/j/drl/rls/hrrpt/2007/100470.htm

enforcement of rules and regulations[155].

Structure of the educational system

The educational system in Cameroon is divided into primary (six years, compulsory), middle school (five years), secondary (high school, two years), and tertiary (University).

The academic year runs from September to June, at which time, end-of-year-examinations are always written. The General Certificate of Education (GCE), both Ordinary and Advanced levels, are the two most qualifying exams in the Anglophone part of Cameroon.

There are two separate secondary schooling systems, depending on whether the French or British colonial models apply. In broad terms though, the secondary phase comprises a lower (middle school) and an upper level (high school). For the majority of young people this distinction remains academic, because their parents are unable to afford secondary school fees at all[156].

Students who graduate from a five-year secondary school program have to sit for the GCE Ordinary Level, and those who graduate from a two year high school program have to sit for the GCE Advanced Level. So far, the GCE advanced level and the Baccalaureate (the French equivalent of academic attainment) are the two main entrance qualifications into institutions of higher learning.

After secondary school, there is the possibility of undertaking "vocational studies," courses aimed to unemployed people under the responsibility of the Ministry of employment.

Grading scale[157]
French scale

Scale	Grade Description	US Grade	Notes
15.00 – 20.00	Trés Bien (Very Good)	A	
13.00 – 14.99	Bien (Good)	A–	
12.00 – 12.99	Assez Bien (Quite good)	B+	
11.00 – 11.99	Passable (Satisfactory)	B	
10.00 – 10.99	Moyen (Sufficient)	C	
0.00 – 9.99	Insuffisant (Insufficient)	F	Failure (May be considered passing if entire year is passed)

English scale

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155   "Lessons learned: primary education in Cameroon and South Africa", Transparency International, July 27, 2011. Available at http:// www.transparency.org/news/feature/ lessons_learned_primary_education_in_cameroon_and_south_africa

156   http://www.classbase.com/Countries/Cameroon/Education-System

157   http://www.classbase.com/Countries/Cameroon/Grading-System

Grade	Grade Description	Division	US Grade
A	First class		A
A–	Second class	Upper division	A– / B+
B	Second class	Lower division	B
C	Pass		C

Education of students with special needs

In 2010, the UN Committee on the Rights of the Child stated that "is deeply concerned at the persistence of de facto discrimination among children in the enjoyment of their rights. It is especially concerned that girls, indigenous children, children with disabilities, refugee children, children from poor rural areas, and children in street situations suffer particular disadvantages with regard to education, access to health and social services."[158]

Funding

Cameroon public expenditure on education in 2011, according to UNESCO, amounted at 3.7% of GDP[159].

Teachers

Absenteeism of teachers is a reason generally considered to contribute to the poor level of education in the country[160].

Teachers from both English and French sub-systems, for cultural and historical reasons, still operate as separate in the educational system, and this prevents "teachers from developing a joint pedagogical repertoire about professional matters and to engage in productive debates around new discourses and repertoires such as ICTs in support of teaching," even if as private individuals, they "appear to be open to the challenges of modern Cameroon and multilingual communication in large urban centres."[161]

Textbook review[162]

In 1995, the National Forum on Education strongly recommended

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158 "Consideration of reports submitted by States parties under article 44 of the Convention – Concluding observations: Cameroon", OHCHR, 2010, p. 6. Available at http://www2.ohchr.org/english/bodies/crc/docs/CRC–C–CMR–CO–2.pdf

159 "Cameroon – Country profile", UNDP. Available at http://hdrstats.undp.org/en/countries/profiles/CMR.html

160 "Lessons learned: primary education in Cameroon and South Africa", Transparency International, op. cit.

161 Edith Esch, op. cit., p. 318.

162 Most of the paragraph is based on A. Bame Nsamenang, Therese M.S. Tchombe, "Handbook of African Educational Theories and Practices", Human Development Resource Centre (HDRC), Bamenda, 2011, pp. 483–492.

"the insertion of local knowledge and practices in the school curriculum to make the education system more relevant to the learners." For so, the Institute of Rural Applied Pedagogy (IRAP) put into place adapted programs and an integrated training that combined general knowledge with work practices (agriculture, animal husbandry, poultry, brick laying, carpentry, etc.).

However, the system was not perfectly balanced: traditional subjects (i.e. Mathematics, Science, French language) were adequately developed, whereas the new subjects were not studied to adapt to the different situations, nor were considered other needs (in rural zones, children are forced to leave school because they are needed to provide enough means of support to their family).

The project wasn't a complete failure: some of the initiatives were, in fact, interesting and proved that the approach was somewhat correct, but had to be more precisely studied – possibly by integrating also teachers' and students' experiences, also outside schools.

Language issue

As previously stated, the Cameroonian system is deeply divided into two sub-systems: even if formally the two have been merged since 40+ years, differences of approach in teachers are more than evident. This is a real issue, since it affects the possibilities of reforming in a more competitive and efficient way the system[163].

Another issue is the complete lack of a programme for including local languages in the educational system. Main reasons are the lack of Government support to the proposal, and the factual impracticability of some of the proposals: since there are more than 270 local languages in Cameroon, picking at random a language to be taught in all country "would generate political feelings of superiority that may endanger national unity."[164]

There are some programmes (both public and private) to teach those local languages at school and in other facilities, but there are anyway mixed feelings towards them: they are spoken the most in the ordinary lives of Cameroonians, but there is still a "social stigma" towards those who cannot speak nothing, but their own languages; on the contrary, being proficient in English or French is something to be proud of (especially teachers are likely to "show off"), but still pupils are not stimulated in using them at home, because of the low literacy level of their families[165].

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163   About this, it is warmly suggested to read the illuminating Edith Esch, op. cit.

164   Eric A. Anchimbe, "Socio-pragmatic Constraints to Native or Indigenous Language Education in Cameroon", in Selected Proceedings of the 36th Annual Conference on African Linguistics: Shifting the Center of Africanism in Language Politics and Economic Globalization, Cascadilla Proceedings Project, Somerville, 2006, p. 134.

165   See Anchimbe, op. cit., pp. 134–136, as well as Ian Cheffy, "Implications of local literacy practices for literacy programmes in a multilingual community in northern Cameroon", in Compare: A Journal of Comparative and International Education, vol. 41, no. 2, pp. 247–260.

7. Content and skills in the Italian primary schools and Wikipedia

Content and skills related to primary school stem both from textbooks and from the most recent National Guidelines of 2012, whose development is still in progress.

Italian Language
Learning goals at the end of the first three-years period:

Speaking

- Collaboratively interacting in a conversation/discussion/dialogue on a specific topic related to direct experience, making questions, answers, explanations, examples
- Understanding main topics of lectures
- Listening text, grasping their main sense and summarizing them
- Understanding and giving instruction about known games and activities
- Telling personal stories (real or fiction) respecting chronological order and making relevant information clear.
- Re-constructing the phases of lived experience.

Reading

- Being able to reading out
- Grasping the content of a simple text on the basis of elements such as title and pictures; understanding the meaning of unknown words basing on the text.
- Reading texts (narratives, descriptions etc.) grasping the main topic and relevant information
- Understanding different texts for practical and entertainment purposes
- Reading short literary texts, showing to understand the main sense
- Reading simple divulgative texts and getting useful information to improve knowledge

Writing

- Communicating in simple and comprehensive sentences, structured in short texts that match the basic conventions of spelling and punctuation.
- Producing simple texts related to concrete purposes (for personal needs, for communicating with others, for re stranded, etc..) and connected with everyday situations (school context and / or family).
- Produce clear and consistent short texts related to different purposes (narrative, descriptive, informative).

Reflection on language

- Comparing texts to capture specific characteristics.

- Performing simple searches of words and expressions within texts.
- Recognizing the essential elements of a sentence to formulate complete sentences.
- Recognizing phrases or short texts, parts of speech, or lexical categories (name, article, adjective, verb) and conjunctions (such as and, but, because, when).
- Paying attention to the spelling of words and use the correct orthography in writing them.

Learning goals at the end of the second two-years period:

Listening and speaking
- Taking the floor in discursive interactions (dialogue, conversation, discussion) with adequate speaking times.
- Understanding the main topics and information of a speech; understanding the purpose and topic of text produced by different media.
- Making specific questions during or after listening.
- Understanding instructions for the execution of school and extracurricular activities.
- Grasping the views of peers in an argument and express opinions in a clear and relevant manner.
- Telling personal experiences or fictional stories respecting chronological and logical order, inserting appropriate descriptions and information.
- Organizing a short oral discourse on a topic addressed in class with a short speech prepared earlier, reporting a subject supported by an outline.

Reading
- Using techniques of silent reading and expressive reading aloud, paying attention to breaks and to the tone.
- Reading various types of text using appropriate strategies to analyze the content; self-questioning at the beginning and during the reading; grasping clues to better understand them
- Using titles, pictures and captions to have a general idea of the text.
- Reading and comparing information from different texts to get an idea of a subject and to find further inspiration.
- Looking for information in different kind of texts (including forms, schedules, charts, maps etc.) for practical/ knowledge purposes using highlighting, diagrams, etc..
- Following written instructions to create products, to behave and to accomplish tasks and procedures.
- Reading narrative and descriptive texts, both realistic and fictional, distinguishing fiction from reality.
- Reading narratives and poems in Italian language grasping the main sense, the formal characteristics, the communicative intention of the author and expressing a motivated personal opinion.

Writing

- Articulating ideas in outlines to produce plots for accounts.
- Producing written accounts of personal experiences or experienced by others, providing the information about people, places, times, situations and actions.
- Writing letters to known recipients; writing open letters or short articles for the school newspaper/website adapting the style to recipients and situations.
- Producing written accounts of experiences, emotions, states of mind in the form of a diary.
- Writing simple texts regarding rules and and short project to accomplish tasks (games, recipes, etc.).
- Producing text in cooperation with peers to report on school experiences and school subjects.
- Producing creative texts on the basis of given repertoires (nursery rhymes, short stories, poems).
- Editing texts (eg, paraphrasing or summarizing texts) and produce new text also with the support of word processors.
- Producing correctly texts in terms of spelling, syntax, lexicon.
- Creatively experimenting, also with the use of computer, different forms of writing, adapting vocabulary, the structure of the text, page layout, graphic choices, integrating texts tieh multimedia contents.

Reflection on language

- Exploring the main mechanisms of formation of words (simple, derivatives, etc.).
- Understanding the main meaning relations between words (similarities, differences, semantic fields).
- Understanding and using words related to specific disciplines of study.
- Using the dictionary as a reference tool.
- Recognizing the logical–syntactic organization of the sentence (predicate, subject, etc.)
- Recognizing the main categories of speech and grammar in a sentence or a text.
- Achieving the basic conventions of spelling and using this knowledge to review written work and correct mistakes.

Related contents on Italian language and respective Wikipedia articles in Italian and English

CONTENTS	Italian WIKIPEDIA ARTICLE	RATE (IT)	ENGLISH WIKIPEDIA ARTICLE	RATE (EN)
Alphabet	http://it.wikipedia.org/wiki/Alfabeto	D	http://en.wikipedia.org/wiki/Alphabet	A
Letters	http://it.wikipedia.org/wiki/Lettera_(alfabeto)	D	http://en.wikipedia.org/wiki/Letter_(alphabet)	C

Punctuation	http://it.wikipedia.org/wiki/Punteggiatura	D	http://en.wikipedia.org/wiki/Punctuation	A
Sentence	http://it.wikipedia.org/wiki/Frase	D	http://en.wikipedia.org/wiki/Sentence_(linguistics)	B
Verbs	http://it.wikipedia.org/wiki/Verbo_(lingua_Italiana)	B	http://en.wikipedia.org/wiki/Verb	B
Names	http://it.wikipedia.org/wiki/Sostantivo	C	http://en.wikipedia.org/wiki/Name	B
Articles	http://it.wikipedia.org/wiki/Articolo_(grammatica)	C	http://en.wikipedia.org/wiki/Article_(grammar)	B
Pronouns	http://it.wikipedia.org/wiki/Pronome	B	http://en.wikipedia.org/wiki/Pronoun	B
Adjectives	http://it.wikipedia.org/wiki/Aggettivo	B	http://en.wikipedia.org/wiki/Adjective	B
Adverbs	http://it.wikipedia.org/wiki/Avverbio	C	http://en.wikipedia.org/wiki/Adverb	A-
Witches, werewolves, princesses, cats, dogs and moms	http://it.wikipedia.org/wiki/Fantasy	B	http://en.wikipedia.org/wiki/Fantasy	A-
Fairy tale	http://it.wikipedia.org/wiki/Fiaba	B	http://en.wikipedia.org/wiki/Fairy_tale	B
Fable	http://it.wikipedia.org/wiki/Favola	B	http://en.wikipedia.org/wiki/Fable	B
Myth	http://it.wikipedia.org/wiki/Mito	A-	-	-
Descriptive text	http://it.wikipedia.org/wiki/Descrizione	C	http://en.wikipedia.org/wiki/Description	C
Recipe	http://it.wikipedia.org/wiki/Ricetta	C	http://en.wikipedia.org/wiki/Recipe	B
Nursery Rhyme	http://it.wikipedia.org/wiki/Filastrocca	A-	http://en.wikipedia.org/wiki/Nursery_rhyme	A-

Poetry	http://it.wikipedia.org/wiki/Poesia	C	http://en.wikipedia.org/wiki/Poetry	A-
News	http://it.wikipedia.org/wiki/Notizia	C	http://en.wikipedia.org/wiki/News	C
Crosswords	http://it.wikipedia.org/wiki/Parole_crociate	B	http://en.wikipedia.org/wiki/Crossword	A-

Table n. 5: Italian Language related contents

Communitarian Languages
Learning goals at the end of the first three-years period:

Listening
- Understanding words, statements, expressions and phrases for everyday use, pronounced clearly and slowly about him/herself, peers and family.

Speaking
- Producing meaningful sentences referring to objects, places, people, usual situations.
- Interacting with a partner to self introduce and/or play, using sentences appropriate to the situation.

Reading
- Understanding postcards, notes and short messages through audiovisual support, grasping words and phrases already achieved in listening.

Writing
- Writing words and simple phrases related to everyday classroom activities and to personal and group interests.

Learning goals at the end of the last two-years period:

Listening
- Understanding clearly pronounced short dialogues, statements, expressions and phrases for everyday use and identifying the overall sense of a speech about familiar topics.
- Understanding short multimedia contents and identifying keywords and main sense.

Speaking
- Describing people, places and objects using familiar words and phrases already encountered in listening and/or reading activities.
- Reporting basic information regarding to the personal sphere, integrating the meaning with facial expressions and gestures.
- Interacting in an understandable way with a partner using sentences appropriate to the situation.

Reading
- Reading and understanding short, simple texts supported by audiovisual contents, grasping their overall meaning

and identifying words and familiar phrases.

Writing

- Writing short and understandable messages to self–introduce, to greet, thanks or invite people for announce news, etc.

Reflection on language

- Looking at pairs of words that sound alike and discern their meaning.
- Looking at words and expressions in use and grasping their relations of meaning.
- Looking at the structure of the sentence and relate constructs and communicative acts to them.

Related contents on English laguage and respective Wikipedia articles in Italian and English

CONTENTS	English WIKIPEDIA ARTICLE	RATE
Greeting	http://en.wikipedia.org/wiki/Greeting	A
Numbers	http://en.wikipedia.org/wiki/Number	A+
Furniture	http://en.wikipedia.org/wiki/Furniture	C
Stationery	http://en.wikipedia.org/wiki/Stationery	A
Animals	http://en.wikipedia.org/wiki/Animal	A
Events (Christmas, Epiphany Eve, Carnival,	http://en.wikipedia.org/wiki/Holiday	A–
Colors	http://en.wikipedia.org/wiki/Color	A
Toys	http://en.wikipedia.org/wiki/Toys	A–
Days of the week	http://en.wikipedia.org/wiki/Day_of_the_week	A
Human body	http://en.wikipedia.org/wiki/Human_body	A
Home environment	http://en.wikipedia.org/wiki/Home	B
Clothes	http://en.wikipedia.org/wiki/Clothing	A–
Family members	http://en.wikipedia.org/w i k i / Family#Western_kinship	A
Meals	http://en.wikipedia.org/wiki/Meal	A
UK geography	http://en.wikipedia.org/wiki/UK#Geography	A+
UK currency	http://en.wikipedia.org/wiki/Pound_sterling	A+
Shops	http://en.wikipedia.org/wiki/Retail	A

Table n. 6: English Language related contents

History

Learning goals at the end of the first three-years period

Using historical sources
- Identifying historical sources and using them to produce knowledge about past generations, communities as well as his/her own past.
- Obtaining different types of information and knowledge on specific aspects of the past.

Organizing information
- Representing in graphic and written form lived experiences, activities and events narrated.
- Recognizing relationships of sequence and simultaneity, duration, phases, time cycles, changes, in events and lived experiences narrated.
- Exploring the function and the use of conventional instruments for the measurement and representation of time (clock, calendar, timeline ...).

Theoretical tools
- Organizing achieved knowledge in sociological frameworks in a range of about hundred years (social, political, institutional, economic, artistic, religious aspects, etc.).
- Identifying similarities and differences by comparing different social and historical frameworks that are distant in the space and time.

Written and oral production
- Representing knowledge and concepts learned through charts, drawings, written texts and digital resources.
- Reporting achieved knowledge in a simple and consistent manner.

Learning goals at the end of the last two-years period:

Using sources
- Producing information with different sources in order to reconstruct a historical phenomenon.
- Representing, in a socio-historical framework, the information emerging from the history of local territory.

Organization of information
- Reading an historical and geographical chart regarding to civilizations studied.
- Using timelines and historical–geographical maps to represent knowledge.
- Comparing the historical charts of civilization studied.

Conceptual tools
- Using the western measurement system of historical time (BC – AD) and knowing the measurement systems of other civilizations.
- Developing short representations of civilizations studied, emphasizing the relationship between their elements.

Written and oral production
- Comparing the different aspects of societies studied and

relating them to the present.

- Obtaining and produce information from graphs, charts, historical maps, artifacts and consulting different texts.
- Produce oral and written texts on the subjects studied, also using digital resources.
- Showing consistent knowledge of concepts learned using the specific language of the discipline.

Related contents on History subject and respective Wikipedia articles in Italian and English

CONTENTS	Italian WIKIPEDIA ARTICLE	RATE (IT)	ENGLISH WIKIPEDIA ARTICLE	RATE (EN)
Causation	http://it.wikipedia.org/wiki/Nesso_di_causalità	A-	http://en.wikipedia.org/wiki/Causality	A-
Simultaneity	http://it.wikipedia.org/wiki/Simultaneità	C	http://en.wikipedia.org/wiki/Simultaneity	B
Time/duration	http://it.wikipedia.org/wiki/Tempo	A-	http://en.wikipedia.org/wiki/Time	A-
Timeline	-	-	http://en.wikipedia.org/wiki/Timeline	C
Calendar	http://it.wikipedia.org/wiki/Calendario	A-	http://en.wikipedia.org/wiki/Calendar	A-
Seasons	http://it.wikipedia.org/wiki/Stagione	B	http://en.wikipedia.org/wiki/Season	A
Events (Christmas, Epiphany Eve, Carnival, Easter)	http://it.wikipedia.org/wiki/Festività	D	http://en.wikipedia.org/wiki/Holiday	A-
Orologio	http://it.wikipedia.org/wiki/Orologio	B	http://en.wikipedia.org/wiki/Clock	A+
Diary	http://it.wikipedia.org/wiki/Diario	B	http://en.wikipedia.org/wiki/Diary	A-
Sources	http://it.wikipedia.org/wiki/Fonte_testuale	B	http://en.wikipedia.org/wiki/Source_text	B
Etruscan civilization	http://it.wikipedia.org/wiki/Civiltà_etrusca	A+	http://en.wikipedia.org/wiki/Etruscan_civilization	B

Greek polis	http://it.wikipedia.org/wiki/Polis	A+	http://en.wikipedia.org/wiki/Polis	A-
Ancient Rome	http://it.wikipedia.org/wiki/Roma_antica	A+	http://en.wikipedia.org/wiki/Ancient_Rome	A
Roman republic	http://it.wikipedia.org/wiki/Roma_repubblicana	A+	http://en.wikipedia.org/wiki/Roman_Republic	A+
Roman Empire	http://it.wikipedia.org/wiki/Impero_romano	A+	http://en.wikipedia.org/wiki/Roman_Empire	A
Landmarks/ monuments	http://it.wikipedia.org/wiki/Monumento	D	http://en.wikipedia.org/wiki/Monument http://en.wikipedia.org/wiki/Landmark	A+
Conventions	-	-	http://en.wikipedia.org/wiki/Convention_(norm)	A-
Human evolution	http://it.wikipedia.org/wiki/Evoluzione_umana	A+	http://en.wikipedia.org/wiki/Human_evolution	A+
Artifacts	http://it.wikipedia.org/wiki/Artefatto	C	http://en.wikipedia.org/wiki/Artifact_(archaeology)	A
Stone age	http://it.wikipedia.org/wiki/Età_della_pietra	A-	http://en.wikipedia.org/wiki/Stone_Age	A
Protohistory	http://it.wikipedia.org/wiki/Età_del_rame http://it.wikipedia.org/wiki/Età_del_bronzo http://it.wikipedia.org/wiki/Età_del_ferro	A+	http://en.wikipedia.org/wiki/Chalcolithic http://en.wikipedia.org/wiki/Bronze_Age http://en.wikipedia.org/wiki/Iron_Age	A

From Prehistory to history	http://it.wikipedia.org/wiki/Preistoria#Dalla_Preistoria_alla_Storia	B	-	-

Table n. 6: History related contents

Geography

Learning goals at the end of the first three-years period:

Orientation

- Moving aware in the surrounding space, orienting through landmarks using topological indicators (front, back, left, right, etc..) and mental maps of known areas.

Geographical language

- Representing in perspective known objects and environments (map of the classroom, etc..) and tracing pathways in the surrounding space.
- Reading and interpreting maps in nearby space.

Landscape

- Exploring the surrounding area through perception and direct observation.
- Identifying and describing the physical and human elements that characterize the landscape.

Regions and Territory

- Understanding that the territory is a space organized and shaped by human activities.
- Recognizing, in the living environment, the functions of spaces and their connections, the positive and negative human intervention; designing solutions through active citizenship.

Learning goals at the end of the last two-years period:

Orientation

- Using the compass.
- Extending mental maps to Italian territory and beyond through indirect observation (films and photographs, documents, maps, digital processed maps etc.).

Geographical language

- Analyzing facts and local/global phenomena, interpreting maps of various scales, charts, digital contents, statistics related to socio-demographic and economical indicators.
- Locating physical, historical and administrative areas in the Italian map; locating Italy in the world map.

Landscape

- Exploring the elements that characterize the main Italian, European and World landscapes, Identifying the similarities and differences (also in relation to socio-historical frameworks); Identifying the elements of environmental and cultural heritage.

Regions and Territory

- Achieving the manifold concept of geographic region (physical, climatic, historical, cultural, administrative) and apply it, in particular, to the study of the Italian context.
- Identifying problems related to the protection and enhancement of natural and cultural heritage, proposing appropriate solutions.

Related contents on Geography subject and respective Wikipedia articles in Italian and English

CONTENTS	Italian WIKIPEDIA ARTICLE	RATE (IT)	ENGLISH WIKIPEDIA ARTICLE	RATE (EN)
Map	http://it.wikipedia.org/wiki/Mappa	A+	http://en.wikipedia.org/wiki/Map	A+
Scale	http://it.wikipedia.org/wiki/Cartografia	B	http://en.wikipedia.org/wiki/Scale_(map)	A+
Geographic coordinates	http://it.wikipedia.org/wiki/Coordinate_geografiche	A+	http://en.wikipedia.org/wiki/Geographic_coordinate_system	A+
Cardinal directions	http://it.wikipedia.org/wiki/Punto_cardinale	B	http://en.wikipedia.org/wiki/Cardinal_direction	A
World	http://it.wikipedia.org/wiki/Planisfero	C	http://en.wikipedia.org/wiki/World_map	B
Europe	http://it.wikipedia.org/wiki/Europa	A	http://en.wikipedia.org/wiki/Europe	A
Geography of Italy	http://it.wikipedia.org/wiki/Geografia_dell%27Italia	A+	http://en.wikipedia.org/wiki/Geography_of_Italy	B
National productivity	http://it.wikipedia.org/wiki/Prodotto_interno_lordo	B	http://en.wikipedia.org/wiki/Gross_domestic_product	A
Regions, provinces and municipalities	http://it.wikipedia.org/wiki/Ente_territoriale	A	http://en.wikipedia.org/wiki/Local_government	A

Regions of Italy	*http://it.wikipedia.org/wiki/Regioni_d%27Italia*	*A+*	*http://en.wikipedia.org/wiki/Regions_of_Italy*	*A-*
Nation by region	*-*	*-*	*http://en.wikipedia.org/wiki/Local_government*	*A*
Built environment	*http://it.wikipedia.org/wiki/Antropizzazione*	*A*	*http://en.wikipedia.org/wiki/Built_environment*	*A*
Natural environment	*http://it.wikipedia.org/wiki/Ambiente_naturale*	*B*	*http://en.wikipedia.org/wiki/Environment_(biophysical)*	*B*
Landscapes	*http://it.wikipedia.org/wiki/Paesaggio*	*A*	*http://en.wikipedia.org/wiki/Landscape*	*A*
Mountain Ranges	*http://it.wikipedia.org/wiki/Catena_montuosa*	*A-*	*http://en.wikipedia.org/wiki/Mountain_range*	*A*
Plains	*http://it.wikipedia.org/wiki/Pianura*	*D*	*http://en.wikipedia.org/wiki/Plain*	*B*
Rivers	*http://it.wikipedia.org/wiki/Fiume*	*B*	*http://en.wikipedia.org/wiki/River*	*A+*
Po river Delta	*http://it.wikipedia.org/wiki/Delta_del_Po*	*A+*	*-*	*-*
Sea	*http://it.wikipedia.org/wiki/Mare*	*B*	*http://en.wikipedia.org/wiki/Sea*	*A*
Lakes	*http://it.wikipedia.org/wiki/Lago*	*B*	*http://en.wikipedia.org/wiki/Lake*	*A*

Table n. 7: Geography related contents

Mathematics

Learning goals at the end of the first three-years period:

Numbers

- Counting objects/events in ascending and descending order, shifting 2/3 units.
- Writing and reading natural numbers in decimal calculus, aware of notation; confronting and ordering, also in a

straight line.

- Mentally executing simple operations with natural numbers, verbalizing calculation procedures.
- Being albe to use multiplication tables till the number 10; executing usual operation with natural numbers.
- reading, writing and confronting decimal numbers, representing them in a straight line and executing simple addition and subtraction, also referring to maney and other measures.

Space and Shapes

- Communicating the position of object in physical space, respect to the self and respect to others, using adequate terms (above/under, left/right, inside/outside etc.).
- Executing simple path starting from oral description or draw, describing an ongoing path and giving instruction to somebody to follow a path.
- Recognizing, naming and describing geometric shapes.
- Drawing geometric shapes and building material models also in space.

Relation, data and forecasts

- Classifying numbers, shapes, objects basing on their properties, using appropriate representations.
- Account for the criteria adopted to make assigned classification.
- Reading and representing relations and data with diagrams and tables.
- Measuring sizes (length, time etc.) using units and conventional tools.

Learning goals at the end of the last two-years period:

Numbers

- Reading, writing, confronting decimal numbers.
- Executing basic mathematical algorithms with self-confidence, considering the possibility of mental/written/digital calculation.
- Making divisions with natural numbers; identifying multiples and divisors.
- Estimating the result of an operation.
- Operating with fractions and recognizing equivalent fractions.
- Using decimal numbers, fractions and percentages to describe everyday situations.
- Interpreting integers negative in concrete situations.
- Representing known numbers in a line and using scales in relevant context related to sciences and technology.
- Exploring notation systems of different cultures.

Space and Shapes

- Describing, naming and classifying geometric shapes, identifying significant elements and symmetries, in order to allow others to reproduce them.

- Reproducing a shape on the basis of description, using appropriate tools (ruler and compass, software, etc.).
- Using Cartesian coordinates to locate points.
- Designing and using models as support to visualization.
- Recognizing rotated, translated and reflected shapes.
- Comparing and measuring angles using properties and tools;
- Using and distinguishing concepts of perpendicularity, horizontality, verticality, parallelism.
- Reproducing to scale a shape (using, for example, the squared paper).
- Determining the perimeter of a shape using the most common formulas or procedures.
- Determining the area of rectangles and triangles and other shapes by using the most common formulas.
- Recognizing flat representations of three-dimensional objects, identify different points of view of the same object (top, front, etc..)

Relations, data, forecasts

- Representing relationships and data and, in relevant situations, using such representations to retrieve information, make judgments and decisions.
- Using the concepts of average and frequency.
- Representing problems with charts and graphs that express average and frequency structure.
- Using the main units of measurement for length, angle, area, volume, time, masses, weights and using them to make measurements and estimates.
- Switching from one unit to another, included money.
- In practical situations, guessing and arguing what is the most probable event, giving a preliminary quantification in the simplest cases.
- Recognizing and describing regularities in a sequence of numbers or shapes.

Related contents on Mathematics subject and respective Wikipedia articles in Italian and English

CONTENTS	Italian WIKIPEDIA ARTICLE	RATE (IT)	ENGLISH WIKIPEDIA ARTICLE	RATE (EN)
Mathematics	http://it.wikipedia.org/wiki/Matematica	B	http://en.wikipedia.org/wiki/Mathematics	A+
Numbers	http://it.wikipedia.org/wiki/Numero	A+	http://en.wikipedia.org/wiki/Number	A+
Fractions	http://it.wikipedia.org/wiki/Frazione_(matematica)	A+	http://en.wikipedia.org/wiki/Fraction_(mathematics)	A+

Arithmetic	http://it.wikipedia.org/wiki/Aritmetica	B	http://en.wikipedia.org/wiki/Arithmetic	A
Set theory	http://it.wikipedia.org/wiki/Teoria_degli_insiemi	A-	http://en.wikipedia.org/wiki/Set_theory	A+
Measurements	http://it.wikipedia.org/wiki/Misurazione	B	http://en.wikipedia.org/wiki/Measurement	A
Money	http://it.wikipedia.org/wiki/Denaro	A-	http://en.wikipedia.org/wiki/Money	A
Statistics	http://it.wikipedia.org/wiki/Statistica	A-	http://en.wikipedia.org/wiki/Statistics	A+
Mode	http://it.wikipedia.org/wiki/Moda_(statistica)	A+	http://en.wikipedia.org/wiki/Mode_(statistics)	A+
Median	http://it.wikipedia.org/wiki/Mediana_(statistica)	A+	http://en.wikipedia.org/wiki/Median	A+
Mean	http://it.wikipedia.org/wiki/Media_(statistica)	A+	http://en.wikipedia.org/wiki/Mean	A+
Percentage	http://it.wikipedia.org/wiki/Percentuale	B	http://en.wikipedia.org/wiki/Percentage	A+
Probability	http://it.wikipedia.org/wiki/Probabilit%C3%A0	A+	http://en.wikipedia.org/wiki/Probability	A+
Geometry	http://it.wikipedia.org/wiki/Geometria	A+	http://en.wikipedia.org/wiki/Geometry	A+
Shapes	http://it.wikipedia.org/wiki/Figura_(geometria)	A+	http://en.wikipedia.org/wiki/Shape	A+
Area	http://it.wikipedia.org/wiki/Area	B	http://it.wikipedia.org/wiki/Area	A+

Volume	http://it.wikipedia.org/wiki/Volume	A+	http://en.wikipedia.org/wiki/Volume	A+

Table n. 8: Mathematics related contents

Natural Sciences

Learning goals at the end of the first three-years period:

Exploring and describing with objects and materials

- Identifying, through direct interaction, the structure of simple objects; analyzing their qualities and properties; describing in their parts; disassembling and reassembling them; recognizing their functionalities.
- Ordering and classifying objects according to their properties
- Identifying tools and units appropriate to the problematic situations at stake; making measurements and using known mathematics to manipulate the data.
- Describing and modeling simple phenomena of everyday life related to liquids, food, forces and movement, heat, etc..

Observing and experiencing on the field

- Observing relevant moments in the life of plants and animals, making farming of small animals, planting gardens and so on. Identifying similarities and differences in the development of plant and animal organisms.
- Observing, going out, the characteristics of soil and water.
- Observing and interpreting environmental changes (by the sun, by weather, by water, etc.) and those due to human intervention (urbanization, farming, industrialization, etc.).
- Being familiar with weather phenomena (winds, clouds, rain, etc..) And the cycle of astronomic phenomena (day/night, sun, seasons).

Human beings and the environment

- Recognizing and describing the characteristics of familiar environment.
- Observing and paying attention to how the body works (hunger, thirst, pain, movement, cold and heat, etc.) in order to recognize it as a complex organism, guessing elementary models of its functions.
- Recognizing similar needs in other living organisms in relation to their environments.

Learning goals at the end of the last two-years period:

Objects, materials and transformations

- Identifying from concrete experiences some scientific concepts such as: size space, weight, force, movement, pressure, temperature, heat, etc.
- Starting to recognize regularity in phenomena and to build an elementary concept of energy.
- Observing, using (and where possible, building) simple

measuring tools (containers measuring volume, weighing scales, etc.), learning to use conventional units.

- Locating the properties of some materials such as, for example: hardness, weight, elasticity, transparency, density, etc.; realizing simple experiments with water (water and sugar, water and ink, etc.)
- Observing and sketching some state transitions; building simple interpretative models and trying to express in graphical form the relationships between identified variables (as a function of temperature, time, etc.).

Observing and experiencing on the field

- Doing frequent and regular observations, also with appropriate tools, together and alone; identifying the elements which characterizes the nearby environment and its changes over time.
- Exploring the structure of soil with rocks, stones and potting soils; observing the characteristics water and its role in the environment.
- Reworking and interpreting the movement of stars, also through games.

Human beings, living beings and the environment

- Describing and interpreting the functioning of the body as a complex system situated in the environment; building plausible models on the functioning of different organisms; Elaborating first intuitive models of cellular structure.
- Taking care of health in terms of food and movement. Achieve the first information on reproduction and sexuality.
- Recognizing, through the experience of farming and breeding, that the life of every organism is in relation to other forms of life.
- Developing the basic classifications of animalia and plants based on personal observations.
- Continuing with observation and interpretation of environmental change, including the global ones, in particular those consequent to the human intervention.

Related contents on Natural Sciences subject and respective Wikipedia articles in Italian and English

CONTENTS	Italian WIKIPEDIA ARTICLE	RATE (IT)	ENGLISH WIKIPEDIA ARTICLE	RATE (EN)
Animals	http://it.wikipedia.org/wiki/Animalia	A	http://en.wikipedia.org/wiki/Animal	A
Materials (wood, plastic...)	http://it.wikipedia.org/wiki/Materiale	D	http://en.wikipedia.org/wiki/Materials	B
Plants	http://it.wikipedia.org/wiki/Plantæ	A	http://en.wikipedia.org/wiki/Plant	A

Seasons	http://it.wikipedia.org/wiki/Stagione	A	http://en.wikipedia.org/wiki/Season	A
Rotation period	http://it.wikipedia.org/wiki/Periodo_di_rotazione	A	http://en.wikipedia.org/wiki/Rotation_period	A
Life cycle	http://it.wikipedia.org/wiki/Ciclo_vitale_biologico	A	http://en.wikipedia.org/wiki/Biological_life_cycle	A
Sensory system	http://it.wikipedia.org/wiki/Organi_di_senso	A	http://en.wikipedia.org/wiki/Sensory_system	A
Garden and seeds	http://it.wikipedia.org/wiki/Giardino	B	http://en.wikipedia.org/wiki/Garden	B
Leaves	http://it.wikipedia.org/wiki/Foglia	A	http://en.wikipedia.org/wiki/Leaf	A
Scientific research	http://it.wikipedia.org/wiki/Ricerca_scientifica	B	http://en.wikipedia.org/wiki/Research	A
Scientific method	http://it.wikipedia.org/wiki/Metodo_scientifico	A+	http://en.wikipedia.org/wiki/Scientific_method	A+
Four elements	http://it.wikipedia.org/wiki/Elementi_%28filosofia%29	A	http://en.wikipedia.org/wiki/Classical_element	A
Matter	http://it.wikipedia.org/wiki/Materia_%28fisica%29	A-	http://en.wikipedia.org/wiki/Matter	A+
Water cycle	http://it.wikipedia.org/wiki/Ciclo_dell%27acqua	A	http://en.wikipedia.org/wiki/Water_cycle	A+
Natural environments (sea, earth, underground, etc.)	http://it.wikipedia.org/wiki/Ambiente_naturale	C	http://en.wikipedia.org/wiki/Natural_environment	A

Built environment	*http:// it.wikipedia.org/ wiki/ Antropizzazione*	*A*	*http:// en.wikipedia.org /wiki/ Built_environme nt*	*A*
Life on earth	*http:// it.wikipedia.org/ wiki/ Organismo_vive nte*	*A-*	*http:// en.wikipedia.org /wiki/ Life_on_earth*	*A+*
Inorganic compounds	*http:// it.wikipedia.org/ wiki/ Composto_inor ganico*	*A-*	*http:// en.wikipedia.org /wiki/Inorganic*	*A+*
Climate	*http:// it.wikipedia.org/ wiki/Clima*	*B*	*http:// en.wikipedia.org /wiki/Climate*	*A*
Zone climatiche (zone fitoclimatiche)	*http:// it.wikipedia.org/ wiki/ Zone_fitoclimati che*	*A*	*-*	*-*
Volcanos	*http:// it.wikipedia.org/ wiki/Vulcano*	*A*	*http:// en.wikipedia.org /wiki/Volcano*	*A*
Air and pollution	*http:// it.wikipedia.org/ wiki/ Inquinamento_a tmosferico*	*A*	*http:// en.wikipedia.org /wiki/ Air_pollution*	*A+*
Water and pollution	*http:// it.wikipedia.org/ wiki/ Inquinamento_i drico*	*A*	*http:// en.wikipedia.org /wiki/ Water_pollution*	*A+*
Fire	*http:// it.wikipedia.org/ wiki/Fuoco*	*B*	*http:// en.wikipedia.org /wiki/Fire*	*A*
Meteorology	*http:// it.wikipedia.org/ wiki/ Fenomeni_atmo sferici*	*A*	*http:// en.wikipedia.org /wiki/ Meteorology*	*A*
Energy	*http:// it.wikipedia.org/ wiki/Energia*	*A-*	*http:// en.wikipedia.org /wiki/Energy*	*A+*
Earth and pollution	*http:// it.wikipedia.org/ wiki/ Inquinamento*	*A-*	*http:// en.wikipedia.org /wiki/Pollution*	*A+*
Invertebrates	*http:// it.wikipedia.org/ wiki/ Invertebrata*	*A-*	*http:// en.wikipedia.org /wiki/ Invertebrate*	*A+*

Vertebrates	http:// it.wikipedia.org/ wiki/Vertebrata	A-	http:// en.wikipedia.org /wiki/Vertebrate	A+
Ecosystems	http:// it.wikipedia.org/ wiki/Ecosistema	B	http:// en.wikipedia.org /wiki/Ecosystem	A+
Daytime	-	-	http:// en.wikipedia.org /wiki/ Daytime_(astro nomy)	A
Human body	http:// it.wikipedia.org/ wiki/ Corpo_umano	B	http:// en.wikipedia.org /wiki/ Human_body	A
Sun, earth and planets	http:// it.wikipedia.org/ wiki/ Sistema_solare	A+	http:// en.wikipedia.org /wiki/ Solar_System	A+

Table n. 9: Natural Sciences related contents

Music

Learning goals at the end of the whole five-years period:

- Gradually using voice, musical instrument and sound technology with creativity and awareness, expanding music skills.
- Performing collectively and individually vocal/instrumental songs, including polyphonic ones, taking care of intonation, expression and interpretation.
- Evaluating functional and aesthetic aspects various music genres and styles, being aware of cultures in different times and places.
- Recognizing and classifying basic elements of musical language in aesthetically relevant songs of various types and origins.
- Representing the basic music syntax through conventional and unconventional notation.
- Practicing uses, functions and contexts of music and sound in different media (film, television, computer).

Related contents on Music subject and respective Wikipedia articles in Italian and English

CONTENTS	Italian WIKIPEDIA ARTICLE	RATE (IT)	ENGLISH WIKIPEDIA ARTICLE	RATE (EN)
Sound	http:// it.wikipedia.org/ wiki/Suono	A	http:// en.wikipedia.org /wiki/Sound	A
Noise	http:// it.wikipedia.org/ wiki/ Rumore_(acusti ca)	A-	http:// en.wikipedia.org /wiki/Noise	A

Silence	http://it.wikipedia.org/wiki/Silenzio	D	http://en.wikipedia.org/wiki/Silence	A
Songs	http://it.wikipedia.org/wiki/Canzone_(musica)	A	http://en.wikipedia.org/wiki/Song	A
Fairy tale	http://it.wikipedia.org/wiki/Fiaba	B	http://en.wikipedia.org/wiki/Fairy_tale	B
Nursery Rhyme	http://it.wikipedia.org/wiki/Filastrocca	A-	http://en.wikipedia.org/wiki/Nursery_rhyme	A-
Rhythm	http://it.wikipedia.org/wiki/Ritmo	A	http://en.wikipedia.org/wiki/Rhythm	A
Timbro	http://it.wikipedia.org/wiki/Timbro_(musica)	A-	http://en.wikipedia.org/wiki/Timbre	A
Intensità	http://it.wikipedia.org/wiki/Intensit%C3%A0_(musica)	A-	-	-
Melodia	http://it.wikipedia.org/wiki/Melodia	D	http://en.wikipedia.org/wiki/Melody	A-
Strumenti musicali	http://it.wikipedia.org/wiki/Strumenti_musicali	C	http://en.wikipedia.org/wiki/Musical_instrument	A
Danza	http://it.wikipedia.org/wiki/Danza	A-	http://en.wikipedia.org/wiki/Dance	A-
Canti popolari	http://it.wikipedia.org/wiki/Musica_popolare	B	http://en.wikipedia.org/wiki/Folk_music	A+
Inni Nazionali	http://it.wikipedia.org/wiki/Inno_nazionale	B	http://en.wikipedia.org/wiki/National_anthem	B
Basic musical notation	http://it.wikipedia.org/wiki/Semiografia_musicale	D	http://en.wikipedia.org/wiki/Musical_notation	A

Arts

Learning goals at the end of the whole five-years period:

Expressing and communicating

- Producing creatively personal and authentic productions to express feelings and emotions; representing and communicating the perceived reality.
- Transforming images and materials trying original figurative solutions.
- Explore different tools and techniques to realize graphical, material and multimedia products.
- Place linguistic and stylistic elements in creative productions observing works of art.

Observing and reading images

- Observing carefully images and objects in the environment, describing the formal elements and using the rules of visual perception and orientation in the space.
- Recognizing in a figurative text elements of visual grammar and techniques (lines, colors, shapes, volume, space) identifying their expressive meaning.
- Identifying different types of codes in comics, film and audiovisual languages and narrative sequences; decoding the different meanings.

Understanding and appreciating the works of art

- Identifying a work of art, both ancient and modern, the essential elements of form, language, technique and style of the artist, understanding its sense and function.
- Familiarizing with some forms of art and craftsmanship and their relations to other cultures.
- Recognizing and appreciating the most significant aspects of natural, cultural and artistic heritage in local territory.

Related contents on Arts subject and respective Wikipedia articles in Italian and English

CONTENTS	Italian WIKIPEDIA ARTICLE	RATE (IT)	ENGLISH WIKIPEDIA ARTICLE	RATE (EN)
Colors	http://it.wikipedia.org/wiki/Colore	B	http://en.wikipedia.org/wiki/Color	A
Hue	http://it.wikipedia.org/wiki/Tonalit%C3%A0_(colore)	A-	http://en.wikipedia.org/wiki/Hue	A
Contrast	http://it.wikipedia.org/wiki/Contrasto	D	http://en.wikipedia.org/wiki/Contrast_(vision)	B

Brightness	http://it.wikipedia.org/wiki/Luminosit%C3%A0_(teoria_dei_colori)	A	http://en.wikipedia.org/wiki/Brightness	A
Painting	http://it.wikipedia.org/wiki/Pittura	A+	http://en.wikipedia.org/wiki/Painting	A+
Collage	http://it.wikipedia.org/wiki/Collage	B	http://en.wikipedia.org/wiki/Collage	A
Frottage	http://it.wikipedia.org/wiki/Frottage_(arte)	B	http://it.wikipedia.org/wiki/Frottage_(arte)	C
Origami	http://it.wikipedia.org/wiki/Origami	A	http://en.wikipedia.org/wiki/Origami	A
Decoration	http://it.wikipedia.org/wiki/Decorazione	D	http://en.wikipedia.org/wiki/Decorative_arts	B
Comics language	http://it.wikipedia.org/wiki/Fumetto	A	http://en.wikipedia.org/wiki/Comics	A
Graffiti	http://it.wikipedia.org/wiki/Graffiti_(archeologia) http://it.wikipedia.org/wiki/Graffitismo	A B	http://en.wikipedia.org/wiki/Graffito_(archaeology) http://en.wikipedia.org/wiki/Graffiti	A A+
Decoupage	http://it.wikipedia.org/wiki/Découpage_(arte)	B	http://en.wikipedia.org/wiki/Decoupage	B
Mosaic	http://it.wikipedia.org/wiki/Mosaico	A	http://en.wikipedia.org/wiki/Mosaic	A+
Friezes	http://it.wikipedia.org/wiki/Fregio	D	http://en.wikipedia.org/wiki/Frieze	C

Table n. 11: Arts related contents

Sports

Learning goals at the end of the whole five-years period:

The body and its relation to space and time

- Synchronizing and using different movement patterns combined together in a sequntial and then simultaneous way (run/jump, grab/throw, etc.).
- Recognizing and evaluating trajectories, distances,

rhythms, being able to organize movement in space in relation to the self, to objects, to others.

Body language as a mode of communication–expression

- Using the body to create original and creative modes of expression through forms of dramatization, knowing at the same time hot to communicate emotional contents.
- Performing simple movement sequences or simple choreographies individually and collectively

The game, the sport, the rules and fair play

- Understanding and correctly applying modes of execution of different sports/games.
- Performing various games from the folk tradition by applying rules.
- Actively participating in various forms of game in cooperation with others..
- Being able to accept defeat in competitions, and live the victory with respect for losers, complying with the rules, accepting diversity, showing sense of responsibility.

Safety and prevention, health and wellness

- Being able to prevent physical harm and to be safe in the various environments of life.
- Recognizing the relationship between diet and exercise in healthy lifestyles; being aware of physiological functions (cardiorespiratory and muscular) and their changes in relation to exercise.

Related contents on Sport and respective Wikipedia articles in Italian and English

CONTENTS	Italian WIKIPEDIA ARTICLE	RATE (IT)	ENGLISH WIKIPEDIA ARTICLE	RATE (EN)
Human body	http://it.wikipedia.org/wiki/Corpo_umano	B	http://en.wikipedia.org/wiki/Human_body	A
Health	http://it.wikipedia.org/wiki/Salute	A-	http://en.wikipedia.org/wiki/Health	A
Sports	http://it.wikipedia.org/wiki/Sport	A	http://en.wikipedia.org/wiki/Sport	A+
Physical excercise	-	-	http://en.wikipedia.org/wiki/Physical_exercise	A
Stretching	http://it.wikipedia.org/wiki/Stretching	A	http://en.wikipedia.org/wiki/Stretching	A

Table n. 12: Sports related contents

Technology

Learning goals at the end of the whole five-years period:

Seeing and observing

- Performing simple measurements and photographic surveys about the school and/or about home.
- Reading and retrieving useful information manuals and "how–tos".
- Using rules of technical drawing to represent simple objects.
- Performing tests and experiments on the properties of most common materials.
- Recognizing and documenting the main features of a new software application.

Predicting and imaging

- Making rough estimates of weights and measures of objects in school environment.
- Anticipating the consequences of decisions or personal behaviours related to the classroom.
- Recognizing the faults of an object and imagine possible improvements.
- Planning the production of a simple object, listing the necessary tools and materials.
- Organizing a trip or a visit to a museum using the Internet for news and information.

Intervening and transforming

- Removing simple objects and mechanisms, obsolete equipment or other common devices.
- Using simple procedures for the selection, preparation and presentation of food.
- Performing decorations, repair and maintenance on school equipment.
- Making a cardboard object describing and documenting the sequence of operations.
- Searching, selecting, downloading and installing common software in the PC.

Related contents on Technology and respective Wikipedia articles in Italian and English

CONTENTS	Italian WIKIPEDIA ARTICLE	RATE (IT)	ENGLISH WIKIPEDIA ARTICLE	RATE (EN)
Computer	http://it.wikipedia.org/wiki/Computer	A	http://en.wikipedia.org/wiki/Computer	A
Word processor	-	-	http://en.wikipedia.org/wiki/Word_processor	A
Spreadsheet	-	-	http://en.wikipedia.org/wiki/Spreadsheet	A-
Technology	http://it.wikipedia.org/wiki/Tecnologia	A-	http://en.wikipedia.org/wiki/Technology	A
Computer (keyboard, word processors, save and close)	http://it.wikipedia.org/wiki/Personal_computer	B	http://en.wikipedia.org/wiki/Personal_computer	A+
World Wide Web	http://it.wikipedia.org/wiki/World_Wide_Web	A-	http://en.wikipedia.org/wiki/World_Wide_Web	A

Table n. 13: Technology related contents

Citizenship and Constitution

- Understanding the meaning of Citizen and Citizenship, right and duty.
- Understanding the link between wellness and personal choices.
- Being able to control the self.
- Expressing their own point of view; improving communicative skills.
- Understanding difference between rage, violence and aggressiveness.
- Improving cooperation skills.
- Respecting the basic rules to behave in public/private places (eg the street, at school, in the library, in parks and in natural environments, in social gathering places and at home).

Related contents on Citizenship and Constitution and respective Wikipedia articles in Italian and English

CONTENTS	Italian WIKIPEDIA ARTICLE	RATE (IT)	ENGLISH WIKIPEDIA ARTICLE	RATE (EN)
Citizenship	h t t p : / / it.wikipedia.org / w i k i / Cittadinanza_(diritto)	A	h t t p : / / en.wikipedia.org / w i k i / Citizenship	A
Constitution	h t t p : / / it.wikipedia.org / w i k i / Costituzione_della_Repubblica_Italiana	A+	h t t p : / / en.wikipedia.org / w i k i / Constitution_(political)	A
Public space	h t t p : / / it.wikipedia.org / w i k i / Spazio_pubbli	A+	h t t p : / / en.wikipedia.org / w i k i / Public_space	B

Table n. 14: Citizenship and Constitution related contents

Religion
Related contents on Religion and respective Wikipedia articles in Italian and English

CONTENTS	Italian WIKIPEDIA ARTICLE	RATE (IT)	ENGLISH WIKIPEDIA ARTICLE	RATE (EN)
Religion	h t t p : / / it.wikipedia.org / w i k i /	A+	http:// en.wikipedia.org/ wiki/Religion	A+

Table n. 15: Religion related contents

8. Best Practices

Cl@ssi 2.0166

Cl@ssi 2.0 aims to modify learning environments at school by the pervasive and continuous use of technology supported teaching: students and teachers can take advantage of technological and multimedia devices and classrooms are progressively equipped with internet connection. The project involved in 2009/2010 lower secondary school and in 2010/2011 primary and high schools: Cl@ssi 2.0 constitutes, with A.N.S.A.S collaboration plus a network of associated university, a learning project for the experimentation of enhanced learning methodologies. Institutes are selected through public calls regionally distributed. Basically, provides schools with funds to buy hardware related to the project proposed by selected classrooms (LIM, Personal Computer, video cameras, etc.). Where the devices were already available (i.e. Trentino region), funds have been dedicated for training teachers to use new devices (see project Didapat described below).

Didaduezero[167]

Didaduezero is an action-research project managed by IPRASE and the University of Padova in 2008-2010. Itinvestigates into formal and non-formal processes mediated by new media and web 2.0 and on their integration with learning processes in all school grades. The research involves the creation and development, through social software, of learning environment where students and teachers try to cope with each other creating digital artefacts. These artefacts are also strongly connected with the local community, in order to build an effective integration between school and territory.

Didapat[168]

Didapat (2005-2008) is a project funded by the European Social Fund and realized by the Autonomous Province of Trento. It aims to implement and enhance competencies in school system, as well as to promote best practices of technological innovation in education. The project intends to exploit the potential of ICT in learning activity, in order to integrate them effectively in schools. Action planned have the purpose to provide teachers with competences on how and why use new learning technologies, and follow different path according to the level of teachers involved.

SLOOP - Sharing Learning Objects in an Open

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166   [http://www.istruzione.it/web/istruzione/piano_scuola_digitale/classi_2_0]

167   [http://try.iprase.tn.it/didaduezero/index.php/il-progetto-didaduezero/]

168   [http://didapat.it/j/]

Perspective[169]

The SLOOP Project (2007–2011) has been funded with support from the European Commission and aims at promoting and facilitating the integration of e-Learning, work-based learning and face to face education. It consists in a LOms based online platform (Learning Object Management System) designed for schools, colleges, universities, training centres, teachers/trainers and, generally speaking, everybody who is involved in planning and running pedagogical paths. The project acts both as repository of OER providing contents for teachers' and students' training and as discussion forum for communities engaged in education. Users can share and produce learning resources collaboratively following the philosophy of the Open and Free Source Movement.

Share.Tec - Sharing Digital Resources in the Teaching Education Community[170]

Share.TEC (2008 to 2011) is a project co-funded by the European Community's eContentPlus programme. Share.TEC is devoted to fostering digital culture in the teaching education field and to supporting the development of a Europe-wide perspective among those working in and with the teaching education community. Share.TEC is developing an online platform which will help practitioners across Europe search for, learn about and exchange resources of various kinds, and will support the sharing of experience about the use of those resources. The system is primarily designed for teacher educators and for teachers engaged in pre-service education and continuous professional development; it will also cater for developers and publishers of digital resources for teaching education.

Innovascuola[171]

InnovaScuola is a web portal that aims to promote and widen the use of new media supporting learning process. The project intends to involve a wide number of schools, to cover the subjects and disciplines of all school grades and to allow to realize learning units by school themselves. The portal offers digital contents on all subjects and multimedia training for teachers, as well as the possibility to have a profile for user generated contents in education. Part of digital contents published on the web portal is produced by experts, so as ensuring their quality and accuracy, part of them is produced by schools and other institution involved, that are responsible of their quality and accuracy. Contents are published either under proprietary license or under copyleft (General Public License and Creative Commons Public License).

POERUP[172]

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169   [http://www.sloopproject.eu/sloop/]
170   [http://www.share-tec.eu/]
171   [http://www.innovascuola.gov.it/opencms/opencms/innovascuola]
172   [http://www.poerup.info/index.html]

POERUP is carrying out research to understand how governments can stimulate the uptake of Open Educational Resources (OER) by policy means. It aims to convince decision-makers that in order to be successful with OER, they will have to formulate evidence-based policies based on looking beyond one's own country, region or continent, beyond the educational sector they look after. The project aims to study the end-user-producer communities behind OER initiatives. By comparing in-depth European case-studies to selected non-European ones, the project will refine and elaborate recommendations to formulate a set of action points that can be applied to ensuring the realisation of successful, lively and sustainable OER communities.

Oilproject[173]

Oilproject is conceived as a free online school managed by students. Its archive contain several videos, texts and exercises on many subjects. Oilproject contents are published under Creative Commons license BY-NC-ND 2.5, and are organized in lectures and courses, mostly for higher education (Literature, Sciences, Internet & Informatics, Economics and Business, Philosophy, Foreign Languages, Arts, History). The quality of contents is evaluated by users with vote and peer-review mechanisms: everybody can produce and use them, in learning and teaching modes.

Insegnalo[174]

Insegnalo is a web portal offering online courses and support for personalized learning needs, mostly designed for lifelong learning and not related to school grades. Insegnalo courses are non-free and integrate different modes of online teaching (live, learning object, learning path, etc.), with spaces of interaction between participants and teachers. There is also the possibility to require customized courses, whose articulation will be developed by project staff.

Bookinprogress[175]

Book in progress is a project created by Istituto Majorana (Brindisi) and joined by several Italian high schools. Textbooks are written by teachers and printed in schools, in order to improve and personalize learning for student, as well as reduce textbook costs for families. The publishing plan aims to deliver textbooks to high schools for different subjects, such as Italian Literature, History, Geography, Chemistry, English Language and Literature, Physics, Law and Economics, Mathematics, Technology and Drawing. So conceived, the project structure allows to change groups of contents on the basis of specific learning needs of students, so as emphasizing the role of teachers and the personalization of learning actions. The contents and services produced, that includes also video lectures and online support for students, are not under creative common

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173   [http://www.oilproject.org/]
174   [http://www.insegnalo.it/]
175   [http://www.bookinprogress.it/]

license.

Ricerche Maestre[176]

"Ricerche Maestre" is a search engine dedicated to children, parents and teachers that includes websites selected by experts and primary school teachers. It contains about 3000 educational resources for primary school and educational and entertaining web contents for children.

Wikiversity[177]

Wikiversity is a Wikimedia Foundation project devoted to learning resources, learning projects, and research for use in all levels, types, and styles of education from pre-school to university, including professional training and informal learning. Wikiversity is articulated in protals realted to the different education grades (Pre-school Education Portal, Primary Education Portal, Secondary Education Portal, Tertiary Education Portal, Non-formal Education Portal, The Research Portal). Wikiversity invites teachers, students, and researchers to join the project in creating open educational resources and collaborative learning communities.

Adotta una parola[178] & Adotta una parola va a scuola[179]

"Adotta una parola" (adopt a word) is a project created in 2010 by the touristic agency of Emilia Romagna to collaboratively collect and improve Wikipedia entries on tourism and culture of that territory. Participants are responsible of taking care of "adopted" entries, contributing to the improvement of knowledge open for all: basically, they look at the status of the adopted entry, review its quality and integrate and correct contents where needed. "Adotta una parola va a scuola" ("Adotta una parola" goes to school) is a follow up to the project dedicated to Italian lower and upper secondary schools, started in 2011. Classrooms joining the project must adopt one Wikipedia entry relevant for their curriculum in order to enhance it through research. With this purpose, students learn the proper use of sources, the use of digital languages and a research method, with an active role in using web contents.

Autori in Wikipedia[180]

"Autori in Wikipedia" (Authors in Wikipedia) is a contest organized by ANSAS with Wikimedia Italia in 2011/2012 to award the best Wikipedia entries written by students. The project is open for upper secondary school students and involves preliminary meetings with teachers and students.

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176   [http://www.ricerchemaestre.it/]
177   [http://www.wikiversity.org/]
178   [http://adottaunaparola.it/adotta-una-parola/]
179   [http://wiki.wikimedia.it/wiki/Adotta_una_parola_va_a_scuola]
180   [http://wiki.wikimedia.it/wiki/Autori_in_Wikipedia]

Dschola

Dschola is a non-profit organization based in Piedmont that has the purpose to promote and improve the technological dimension of culture, the innovation in teaching and the sharing of knowledge through ICT. Dschola created a public office that act as a point of reference for innovation in the the Piedmont school system. Dschola is also a communication portal (providing advice and support in communication services), offers technical advice in using technological resources and promotes ICT in schools with conferences and seminars (such as the recent [Mashup](#)).

Snaefellsnes case

Snaefellsnes is a peninsula situated to the west of Borgarfjörður, in western Iceland where high schools spread in the territory have been unified and coordinated by a project inspired to the principles of participatory design. The project aims to the creation of an unconventional learning environment, based on technologically infrastructured open space, in order to fulfil the needs of users being distant from schools. An extended and distributed educational space has been built, that includes one central school, peripheral schools, as well as students' and teachers' houses. The project engaged learning communities that switch from live to virtual presence, with students, teachers and locals. School schedule have been redefined, introducing working hours in the afternoon, supported by tutors. Absence due to extreme climatic conditions are made up with virtual presence on LCMS (Learning Management System). There has also been a drastic reduction of frontal lectures with an increase of groupworks led by teachers.

Italian blogs with educational purposes

- http://www.robertosconocchini.it
- http://spicchidilimone.blogspot.it/
- http://www.lanostra-matematica.org/
- http://www.giuseppina.org/
- http://podcast.brofferio.net
- http://www.maestrasandra.it/
- http://maestraleila.wordpress.com/
- http://unpostovicinoalfinestrino.blogspot.it/
- http://ascuolasulweb2.blogspot.it/ -
- http://www.ciaomaestra.com/
- http://utenti.quipo.it/base5/index.htm

Project for the Study of Alternative Education in South Africa

The Project for the Study of Alternative Education in South Africa (PRAESA)'s focus of work includes language planning and policy formulation at national and provincial government levels, in-service teacher education, developmental research into multilingual classrooms. PRAESA's research shows that

students learn best in their mother tongue, under the right conditions and using a parallel language learning outcome to best support the students. PRAESA believes that children learn to read by creating stories and meaningful connections. PRAESA recently launched the National Reading for Enjoyment Program, Nal'ibali. In addition to reading clubs, Nal'ibali publishes a bilingual story once a month in the national newspaper, The Times. PRAESA focuses on; Research and development programmes about bilingualism and biliteracy in early childhood education; Raising the status of the (official) African languages for oral and written language functions in society Mentoring adults to deepen understandings   and appreciation of the value of becoming reading and writing role models for children of all ages and supporting their growing understandings and strategies for achieving this; Initiating the development of materials for use with babies and children in multilingual situations, through original writing and translation.

University of Cape Town: School of Education

The School of Education, which celebrated its centenary in 2011, is a largely post-graduate interdisciplinary department in the Faculty of Humanities with research activity across a number of important fields. These include studies in knowledge development and transfer (curriculum development, learning and acquisition, scientific literacy, maths, science and technology education, primary education), policy evaluation and support (evaluation studies, networks and partnerships, support services policy), studies in race, culture, identity and language, and adult education. A significant number of staff act as consultants to local and national government, to national commissions as well as to important education NGOs.

University of Witswatersrand: School of Education

The School of Education at WITs has initial teacher education, postgraduate education, research and public engagement. The School offers a wide range of programmes which contribute to cutting-edge research and development of

all stages of schooling and the higher education sector. The Wits School of Education prides itself on exceptional research, which focuses on: Curriculum; Teaching and Learning in Schools and Higher Education; Educational   Technology; Educational Policy and Leadership, Educational Economics,

Language Education and Mathematics Education, Science Education, Deaf Education, Post School Education, Vocational Education, Labour Market Research.

The Alliance for Children's Entitlement to Social Security

The Alliance for Children's Entitlement to Social Security (ACESS) is a grouping of more than 1,223 children's sector organisations that are committed to working together to achieve a comprehensive social security package that respects the dignity of all and gives practical substance to children's rights. The members are drawn from all of South Africa's nine provinces.

Equal Education

Equal Education is a movement of learners, parents, teachers and community
members working for quality and equality in South African education, through analysis and activism.EE is a community and membership-based organisation. It advocates for quality and equality in the
South African education system and engages in evidence-based activism for improving the nation's schools. It is a leader in youth leadership development. EE's campaigns, based on detailed research and policy analysis, are aimed at achieving quality education for all.

Symphonia

Symphonia is an Organisational Change practice that works with leaders to engage their stakeholders so that talent, human energy and creativity is maximized. Our mission is to ignite a sense of possibility everywhere we work. Companies that share the Symphonia brand work together to develop the leadership skills and capacity of leaders in South Africa, thereby strengthening the fabric of South African society

Siyavula

Siyavula" is a Nguni word which means "we are opening". Formerly seeded by the Shuttleworth Foundation, Siyavula supports and encourages communities of teachers to work together, openly share their teaching resources and benefit from the use of technology.Siyavula focuses on

Openness in education; Communities of educators working together: Technology for collaboration.

Education without Borders (EwB)

Eduation without Boarder is a Canadian non-profit foundation created in 2002. Their mandate is to foster educational opportunities and provide educational facilities in disadvantaged regions of the world. Currently, EwB's efforts are focused on Fezeka Secondary and the surrounding community in the township of Gugulethu, South Africa.

e-Government for Citizens, Western Cape Government

e-Government for Citizens (E-G4C) forms part of the Department of the Premier. E-G4C manages the Western Cape Government website, which is a single point of access to government information and services for citizens of the Western Cape.The directorate also maintains and manages the Western Cape Government intranet, the Western Cape Government Contact Centre (which includes the Call Centre, Presidential Hotline, Walk-in Centre and E-mail Channel) and the Cape Access programme.

LEAP Science and Math Schools

LEAP is a learning model that aims for excellence – particularly in mathematics, science and English – and so transforms disadvantaged young people's lives and the communities where they live. LEAP provides a high quality education to students from grades 9 to 12 with the potential to learn and a willingness to work hard towards success in education, future employment and life.

Ikamvayouth

IkamvaYouth equips learners from disadvantaged communities with the knowledge, skills, networks and resources to access tertiary education and/or employment opportunities once they matriculate. IkamvaYouth aims to increase the collective skill level of the population, to grow the national knowledge base, and to replicate success in more communities. A non-profit organisation (established in 2003 and formally registered in 2004) with branches in three provinces in South Africa, IkamvaYouth currently operates from Khayelitsha, Nyanga and Masiphumelele in the Western Cape, Ivory Park in Gauteng, the greater Cato Manor area and Molweni in KwaZulu-Natal.

Shuttleworth Foundation

Shuttleworth Foundation provides funding for dynamic leaders who are at the forefront of social change. They identify people, give them a fellowship grant, and multiply the money they put into their projects by a factor of ten or more.The Foundation is

at its core an experiment in open philanthropy and uses alternative funding methodologies, new technologies and collaborative ways of working to ensure that every initiative receives the best exposure and resources to succeed.

Mindset

Mindset Network is a non-profit, South African organisation aimed at personal, social and economic development of all people in Africa. Mindset creates, sources and delivers on a mass scale quality educational resources through appropriate mediums to the; primary and secondary school community; health community, vocation and enterprise community, and under-developed and under-resourced communities where upliftment can be achieved through education.

University of Stellenbosch Department of Economics

The Department of Economics at Stellenbosch University is one of the oldest Economics departments on the continent and one of the largest in the university.The department is dedicated to quality research and teaching, with a focus on economic issues pertaining to South Africa and Africa.

South African Institute for Distance Learning (SAIDE)

http://www.saide.org.za

SAIDE's task is to contribute to the development of new models of open and distance education practice, that accord with and take forward the values, principles, and goals of the evolving education systems in the Southern African region. It has also paid particular attention to the appropriate use of technology in education and most recently established a Kenya-based initiative, OER Africa, to promote the development and sharing of OER on the African continent.

OER AFRICA

http://www.oerafrica.org/

OER Africa provides anyone with access to information they need to learn about and benefit from Open Educational Resources (OER). OER Africa currently focuses on the supporting and developing OER in these thematic areas of agriculture, health education, foundation courses and teacher education. It is a project of SAIDE.

9. Interviews

Italian Teacher (anonimous)
(Primary school vide-director, in charge of the project "Cl@ssi 2.0")

The teacher interviewed teaches mathematics, natural sciences, informatics, sports at the primary school in Marostica (VI). She is in charge for the realization of the project Cl@ssi 2.0 with the last grades of the institute. The project, selected and funded by Ministry of Education, aims to realize a hypertext based on the metaphor of Marostica square, well-known for the human chess game. It involves a study of cultural, environmental and historical aspects of Marostica supported with digital technologies (interactive whiteboard, digital cameras, netbooks used by students with the mediation of the teacher).

Learning activity is articulated on the whiteboard with work sheets that show the learning plan. followed by a lecture integrated by students and an exercise. The interplay between content produced by students, teacher, new media and textbooks makes the learning unit as a collective outcome of activities carried out in classroom. Students are organized in groups of two people with a netbook and integrate the lecture with content suggested by the teacher drawing on Youtube, Wikipedia, educational websites). These content are then articulated and mounted on the interactive whiteboard, as happened for instance with the path of the cherries (an important local product).

Contents are of paramount importance for teachers, that draw also on textbooks digital expansions, teaching manual, and selected websites (i.e. "Rino lo scienziato"). As far as Wikipedia is concerned, the teacher insists on the way entries are produced, focusing on the collaborative way of publishing also to create critical awareness on the quality and reliability of materials available on the web. Wikipedia language is sometimes difficult respect to primary school level but – whit the help of the teacher – is used also as a trigger to foster curiosity and extend lecture topics (as happened for instance with eukaryote cells, photosynthesis, linnaean taxonomy, the human body, Solar System, etc.).

The role of the teacher is at the core of this process, especially since school is still the main environment to achieve digital literacy, more than families and home environments. The teacher provides explanation and "translation" from the language of the web; build the structure of the lecture selecting and organizing thoughtfully the countless contents of the web, using also generated digital contents by other teachers; controls and supervises students use of new media; finally, maintains the necessary bond with traditional learning methods. The sum of these activities requires heavy workload for teachers, that are moreover forced to take care of procedures (i.e. the purchase of digital devices) whose they are not

supposed to be responsible.

New technologies advantages are connected with the hardware dimension. Within Cl@ssi 2.0 project, materials collected and produced are stored in USB keys and hard disks not connected with the Internet: there is thus the risk to lose them in processes of software/hardware updates. In order to benefit of potentialities offered by digital contents, school need to be funded and to be technically supported in using digital devices: digital competencies need machines at school in order to be developed.

Roberta Bonetti
(Antropologist, University of Bologna)

The Project Wikiafrica for Primary School seems to respond to different needs according to the contexts. In African countries primary school faces issues related to the lack of infrastructures, resources and institutional articulation, and wikipedia can be a powerful tool, especially oriented to teachers and educators. in Italy we have a different situation where the educational process is strictly regulated by policies and where moreover there are often prejudices about the introduction of digital media in learning process. Then, if we are talking about a tool that allows to achieve primary license, Wikipedia does not fulfil this requirement since it is a tool that contribute to enrich and enhance competencies and knowledge, and does not make much sense within Italian schools. What could make sense is to made this tool available for who in Italy is out of the school system, namely areas of illiteracy and drop out. Wikipedia contents can thus be used by teachers and educators to reach marginalized people and engage them to build communities. Who does not attain school? Why? Where are they? How many are? Maybe we are coping with a new profile of professionals that act as tutors for those people "out of the box" leveraging on new media and digital contents. Or Maybe, we are talking about a tool that allow parents that have difficulties in balancing work and family to understand school system in order to effectively orient their children. The guidelines of Ministry of Education and the achievement of primary license, however, can be considered minor issues respect to the serious problem of literacy of adult population, non−Italian citizens living in Italy included. We need to understand thus how these people can use this tool to support to learn basic competences.

Final users can be thus immigrants populations settled down in Italy, who have problems of linguistic integration: here Wikipedia can become a tool to support e−learning from home. This action can be planned in collaboration with non profit organizations that deal with migration phenomena, in order to verify that there is the need. Then you have to decide what is interesting for this project, whether the primary education or lifelong learning. In this sense, further action could involve free Internet access for people engaged in this learning process, that would make the difference. You could start pilot projects in different geographical areas.

As far as Wikipedia considered as a support to primary education, and to school system in general, you have to fight also strong prejudices on the idea that a student using Wikipedia is doing just "copy and paste", that Wikipedia has unreliable contents, etc. It could be sometimes, but Wikipedia is much more than that, is a tool that improve learning processes and achievement of competencies.

Another important issues on Wikipedia and primary school can involve the relation between competences and contents. The switch towards a situation where learning happens online makes the achievement of competences more difficult without the relational, physical and affective sphere that is necessary for education. Where the relational contact is mediated by the teacher, as it happens in

schools, Wikipedia contents can work and support the activity, where there is not a physical mediation, Wikipedia has strong limits. We have to say, though, that school practice, especially for content related to geography, history, mathematics is based on the same contents and curricula of 1970 (so are textbooks contents). In this sense, Wikipedia can be a sort of driver for innovation.

Donata Columbro
(Journalist and blogger on human rights, Africa and web 2.0 for non-profit organizations)

VSP (Volunteers for Development) is a web portal and magazine published by a network of NGOs and by FOCSIV, many NGOs people being engaged with project related to African countries. As for me, because of my studies I became more and more specialized in African issues and for my personal interest I'm following everythings related to Africa. This came well together with the project "Fondazioni4Africa": 4 bank foundation and the publisher De Agostini proposed to CISV (headed by Piera Gioda) project that involved communication and media in Senegal and Uganda, where other projects of cooperation and development were already ongoing. Stimulated by De Agostini, we considered the idea to realize a student exchange through a blog on food sovereignity shared by 4 school from Italy, 4 from Senegal and 4 from Uganda. In particular, each country chose a school as media-center and a group of students to involve in training on the use of digital devices (smartphones, PC etc). In Uganda, for instance, there was a media center built within the project "photographers without frontiers", and students from Calongo school were selected to participate, since they had a preliminary journalistic training. I was in charge of training on web tool for journalism (googlegroups, dropbox, wordpress, etc.). Despite Calongo was a very isolated location, where students involved were about 18-years old, they learned very quickly hot to use digital devices. In Senegal the situation was very different: students attained lower and upper secondary school, living in a big city, Dakar, and having familiarity with digital tools (most of them used to web interactions, with an email account and a facebook profile). Teachers took part to the project, as well, after specific training. In Uganda we focused on Web 2.0, many of them did not know Wikipedia, that was both an incredible discovery and a source of frustration since it could not be used in their schools. Here we started learning how to make video interviews with smartphones in a web suitable format (2'). Teachers from Senegal already owned "quasi" smartphones and folllowed training with students, in a school equipped with internet and wi-fi.

Workshops have been organized as following: the first 2 days have been dedicated to theoretical issues about Internet, social networks, blog, and citizen journalism. The next days we went out to look for stories about food sovereignty, interviewing locals. Finally, we went back to the school canteen, trying to understand the topics to communicate to students in Senegal and in Italy and how to organize materials on the website. With this purpose, we created two "blog palestra" (training blogs) to get familiar with the interaction via wordpress. Edited contents were then published on the official blog of the project.

There is a leading thread in these actions, linking both the use of the tool and the need to tell their own territory: a need to speak rather than "to be spoke". The creation of contents involving their own territory, the wish to tell their own story to the others enacted a sort of process.

Then, expectation need to cope with actual situations: in rural areas for example electricity is missing and mobile network does not cover some zones. It limited some possibilities. Maybe you can use more printed works in order to circulate them around the whole community. You may also try to involve local communities of bloggers and active citizens on the Internet, in order to let them speak about their experience.

References

Blog palestra:
- Uganda http://kalongoreporting.wordpress.com/
- Senegal http://cemdakar.wordpress.com

Reportage from uganda:
- http://www.volontariperlosviluppo.it/index.php?option=com_content&view=article&id=2201:uganda-digitale&catid=161:ong20-cambiare-il-mondo-con-il-web&Itemid=200145

Columbro's blog posts on the project:
- http://mediapatica.com/2012/05/04/kalongodays-1-come-luganda-uganda-is-green/
- http://mediapatica.com/2012/05/06/ogni-giorno-alle-17-un-temporale-kalongodays/
- http://mediapatica.com/2012/05/09/cambiare-kalongo-con-il-web-kalongodays/
- http://mediapatica.com/2012/07/12/perche-mobile-journalism-in-senegal-e-uganda/

Eleonora Pantò
(Digital Contents and Media Manager CSP, Dschola)

In my experience with projects on Internet and education, I realized how important is for school that contents, rather than software, are openly distributed. My efforts have been thus devoted to build communities and disseminate the opportunities of Open Educational Resources at School and University. The pathway for this kind of innovation in Italian secondary and primary schools is however hard: in fact, the university has at least the common practice lecture notes (professors build their own teaching materials for students), whereas school teachers were not used to preparing and re-use materials for their own lectures since the introduction of digital devices in classroom. For instance, "Federica" at the university of Naples is the first and still unique project in Italy where a university makes all courses online (despite realted materials can be only accessed, without modifying nor downloading them). In schools this process is very slow, despite the ongoing projects on digitalization of school by Ministry of Education, because the cultural problem is still there and is a complex work: in fact, very few materials are uploaded on the Internet with a license describing the terms of use, and this makes them scarcely adopted. In other words, most teachers does not connect publishing and license ("I put my content on the Internet, what should I do more?"). The other problem is that re-use rates by users are very low. For instance, the project named "Connection" carried out in 2000 made available a platform for

sharing teaching materials: statistics showed that materials were uploaded by users, but very few people used them to be re-adapted for their lectures. Moreover, these materials were untagged, and not indexable. Basically, there are two kind of problems: the first one involves the ignorance of creative commons licenses; the second one is that teachers are often afraid aither to do a poor figure in publishing their own contents or to make somebody else become richer with their own ideas. As a consequence, when they use CC license, it is so strict that you cannot produce derivative contents from their materials. We need a cultural shift on this.

There is, though, some grass root initiative, such as "bookinprogress" by Majorana Institute where high school teachers write and sell their own textbooks at an affordable price. Yet, these textbooks are not easily accessible since you need to join a circle to get them. This could be comprehensible because they want to be protected themselves by big publisher since they may draw on their textbooks. In addition, we need to understand how teacher who write textbooks can be paid and whether this practice is economically sustainable. Finally, there is a problem of quality of contents: we certainly live in the age of disintermediation, but professionals that work in publishing companies have strong expertise that may be missing in these grass root practices.

As far as primary school is concerned, we have very good teachers in using digital media in teaching activity, but there are few project for sharing materials such as learning units. Paola Limone and I worked in a project ("metti un pc nello zainetto"), finalized to fin a model for the use of netbooks in classroom. There is also the search engine for children ("bambini siete pronti a navigare") where Paola collected several resources and links. Other important initiatives are "InnovaScuola" and and "GOLD - Le buone pratiche della scuola Italiana", that built an archive of learning units for each school grade, with a quality label. Everybody is invited to share educational materials, that can be published with creative commons license (we have to say that teachers rarely grasp the importance of this). Finally, the last reform by Ministry of Education plans to introduce e-textbooks in school by 2013: educational departments of regions are setting standards for each subject and evaluates proposals by publishers. Probably there will not be guidelines for adopting creative commons license. It would be interesting to know whether there are data on the utilization of such archives.

Within this context, the contribution of Wikipedia could be to offer a sort of "wikischool" describing the organization and subject of each school grade and providing reliable contents as well as links to reliable contents. We need in fact to structure and order the countless materials available in the Internet. Teachers, thus, need to know how to use digital resources and to give students media literacy and critical thinking on the use of such resources, making them able to recognize reliable contents. This, however, is more related with learning culture than with technologies.

Francesco Pisanu
(Researcher, IPRASE - Istituto provinciale di ricerca e

sperimentazione educativa)

In most cases, when introducing new technologies at school, content is a consequence of developing a certain kind of technology: it depends on them. For example, when the interactive whiteboard has been introduced in schools, teachers – mostly lower secondary school teachers – had a sort of fascination for videos and Youtube. There are several hybrid possibilities merging different devices. However, web-based learning and other technologies taken alone seems to not affect learning in a relevant way, as showed by scholars. My impression is that contents achieved a secondary role respect to the enacted technological infrastructure: I have never seen so much attention to the quality of the contents. Given that traditional contents do not have appeal in terms of communication, it can be applied a fortiori to digital contents. Often contents are not connected with other contents during teaching activity, since this attitude not-connected and not-expanded is already present in traditional practice and replicate in technologically augmented settings. To summarize, teachers tackle a subject, complete the explanation and step to the next one following a sequential approach. The impression is that they replicate teaching models already activated and used without technologies. As a result, teachers do not embody an active approach to digital contents they find on the Internet, taking for granted that these content are somehow stabilized and do not need to be extended or verified. Digital contents are something static, produced by others. Then we clearly have situations more evolved, where the teachers and the students are already used to connecting different content and to interdisciplinarity. Mainly, in the first case technology can not help but amplify and confirm traditional teaching styles; in the second case, instead, we already are in contexts where teachers is familiar in involving students in activities of content production. When the teacher organizes students in groups and leverages on cooperative learning, this practice will likely benefit of digital devices. To conclude, technologies confirm and empower modes of managing learning that are active in non-technological settings: as IARD points out, teaching approaches follow mainly transmission models rather than cooperative models, adding some part of open conversation and discussion.

This is the reason why we need to develop and support the adoption of a cooperative mode of learning. This can work better when teachers have compliance in using digital devices. On the contrary, if somebody never used interactive whiteboards s/he will not act as a model for students and they will learn how to use these devices in other manners, that will not necessarily be effective. In this sense, tools like Wikipedia can be a sort of double-edged weapon: on one hand, it is a huge archive of contents built and re-built by users, on the other hand is the way you draw on that archive that determines the relevance and effectiveness of these contents, although this will be more effective with some mediation (i.e. tutors, educators). In addition, contents are rarely shared among teachers, since the organization of teaching is extremely individualized, and the preparation of learning units takes place at home and/or in the spare time at school (this happens mostly in secondary schools). In

primary school, the program committees meet once a year to define common guidelines on contents and curricula, as well as to welcome and introduce new teachers. But this does not lead to create communities and cooperation among techers, because of a misleading interpretation of the idea of the autonomy of teachers: if you consider it as a generic freedom of doing things alone, you miss all the possibilities to improve your expertise. Sometimes, teachers have even a sort of obsessive ownership of ideas that preclude the sharing. The classroom is managed individually by the teacher without connection with other teachers, and this is a strong limit that involve the use of digital devices, as well.

To conclude, in my opinion quality of contents can be useful to those that have cognitive and cultural skills to evaluate and use it: for this reason, the innovation for school should start from actual needs rather than from the envisioning of specific technological devices.

Rossella Zanelli
(lettera27 Foundation and mother of two children)

I have two daughters, the one in the fourth grade of primary school and the other in the first grade of lower secondary school. Their education has been based on a learning process along the whole day. Within this context, the role of teachers is the most important: if you find the competent and open-minded everything is good, otherwise, if you find an old fashioned environment, everything is complicated. Unfortunately, during last years things went worse for school due to the cut of funds and of training teachers: everything is up the the goodwill of individuals. I consider myself lucky, since Martina had the same teachers for all the five years, so they could carry out their learning project. Giulia instead had a change, and looking at the new entries this year the cut on the number of teachers could not guarantee the full time to students. As for the subject, we usually had the teacher for Italian language and literature, the teacher for mathematics, the one for music, the one for religion, the one for sports and the one for English language. Since this year, the teacher of mathematics teaches also English language.

As for technologies, in primary school they have an informatics lab with computers (that are neither updated nor maintained) and only one room with an interactive whiteboard. In lower secondary school, instead, all classrooms have interactive whiteboards and teacher must be trained to use them. There are ongoing project in primary school to develop digital competences, but they are single "spot" initiatives. Learning activities related to digital competences involved only Italian literature and language for people who did not option for catholic religion slot.

During the first three years of primary school, there are not homeworks, except for the week-end. Starting from the fourth year they have homeworks for weekdays. Whereas the first and second year of primary school act as connection ring with the pre-primary, the third year is critical and very engaging for students, since subjects start to be more definite and students must be able to pay

attention to lectures. Now Martina, who started attaining the lower secondary school, has to produce some text with the PC, and they suggested us to buy a PC at home in order to use digital contents provided with textbooks (DVD, etc.). Giulia, who is in the primaries, attended just some introductory class on informatics.

At home, my daughters are used to browsing on the Internet, they have selected website where they can go (basically youtube for cartoons), then they play a little with computer games for children. It seems to me that they use internet as a sort of television set. They know that following links they can see something, but do not have a clear idea how things work in the Internet. Maybe Martina, the older one, is starting to explore the potential, but not Giulia. They live the browsing as an everyday experience, like turning on the tv. Compared to male classmates, the latter are much more interested in Internet and their parents put filters to browsing (I do not know whether this difference is gendered or not, also because we did not buy other consoles like Nintendo that male classmates already had). Finally, my daughters does not have mobile phones, even they basically know how to use it. I truly hope that school will update soon, and I would optimistically think that an enlighten politician will make the difference. I hope that in the future there will be more attention to adequately train teachers, whose role is fundamental. Then there is the challenge of multietnicity and interculturality. I think that the school need to be more open to the "outside" world: it must give students tool for learning to learn and to be autonomous and be able to organize their own time. I see them still strongly dependent from parents. This is a double work, by teachers and by parents. Then the introduction of digital devices need to be smarter and not improvised.

Assessment of the Italian Wikipedia Article "Leaf" by a primary school teacher
November 2012

Italian Wikipedia article related to "Leaves"[181] identifies the feature from the perspective of natural sciences. It shows contents in a hypertextual and non-sequential style, because every aspect can be deepened following the several links proposed, that connect to concept and images. The article is rich of essential contents that address the structure and morphology of leaves, and I think that it can offer the potential for an autonomous and interactive study by fifth-year students with high learning level and excellent reading skills. They can thus benefit of the scientific language, especially referring to the anatomic feature and to the photosynthesis. In regard to lower grades and to students with lower skills, the study needs the guidance of the teacher for making concepts simpler.

In this sense, the images showing the types of blade, venation and edge clarify their classifications and stimulate the curiosity and interest in verifying what is showed through fieldwork experience and laboratory activity.

In my opinion, the article allow to observe, describe and confront the various types of leaves, in order to recognise differences and transformations, as well as to improve memory and language skills.

I would suggest a simplified organization of contents for primary school, built with concepts and images that form a learning unit with the following contents:

- the parts of leaf and their main functions;
- the chlorophylls and photosynthesis;
- deciduous trees and shrubs and their character.

Such contents stimulate curiosity and practical knowledge (why leaves change their color? How do they breath?). In fact, leaves can be considered as a very laboratory, since they host the main vital functions (breathing, transpiration, etc.) that need to be explained with essential words and images in order to be achieved.

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181   http://it.wikipedia.org/wiki/Foglia

Interviews in South Africa

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Eastern Cape	Educator:1 Headmaster: 1				Educator: 1 Headmaster : 1
Free State					
Gauteng	Educator: 1		Educator: 2 Headmaster:1		Educator: 3 Headmaster: 1
KwaZulu-Natal		Headmaster:1			
Limpopo			Headmaster:1	Headmaster :1	
Mpumalanga					
Northern Cape					
Western Cape	Educator:1 Headmaster: 1	Educator:3 Headmaster: 1		Educator:1 Headmaster: 1	Educator:6 Headmaster:2

10. Colophon

Authors	Content
Iolanda Pensa	1. Introduction
Luca Martinelli	2. Wikipedia
Claudio Coletta	3. Primary School
Claudio Coletta	4. Case study Italy
Isla Haddow–Flood Kelsey Wiens	5. Case study South Africa
Luca Martinelli	6. Case study Cameroon
Claudio Coletta Luca Martinelli	7. Content and skills in the Italian primary schools and Wikipedia
Claudio Coletta Kelsey Wiens Isla Haddow–Flood	8. Best practices
Claudio Coletta Kelsey Wiens Isla Haddow–Flood	9. Interviews
Iolanda Pensa	10. Colophon
Iolanda Pensa	Proofreading, editing and page setting of the draft