

Guiding Literacy Practice: Context Matters

Africa Language and Literacy

A Landscape Review of Language and Literacy Research in African Contexts

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Report commissioned by CODE
July 2017



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Acknowledgements

This report was prepared by Espen Stranger-Johannessen under the supervision of Dr. Bonny Norton and Dr. Marlene Asselin from the Department of Language and Literacy Education at the University of British Columbia, Canada. The African advisory committee for the report includes:

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This report complements the *Girls' empowerment through language and literacy (GELL)*, prepared by Jennifer Thompson and Dr. Claudia Mitchell from the Department of Integrated Studies in Education at McGill University, Canada.

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This report is also grateful for the support of Mumuni Thompson and Yvonne Capehart, who have generously taken time to respond to a questionnaire on teacher education, and in the case of Thompson, also responded to interview questions regarding this questionnaire.



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Executive Summary

This report addresses key issues based on recent research on language and literacy education in the African context, including teacher education, and outlines key findings and recommendations for research and practice based on the review of the literature. The dramatic increase in enrolment of students in the last few decades has led to greater demand for teachers and attention to quality of education, as expressed in the United Nations' Millennium Development Goals (MDGs) in 2000 and later in the Sustainable Development Goals (SDGs, number 4) in 2015. Quality education is also a priority in the Global Affairs Canada's new policy on international assistance. Twenty-first century skills, such as active learning, problem solving, critical thinking, independent thinking, and information and communication technology (ICT) skills, are key to quality education. Although these skills are often mentioned in the policy documents, there is need for more research on how these can be implemented in practice.

The report is divided into Part I and Part II. Part I reviews focal areas of research and is based on academic articles and reports. Part II presents case studies of policies and teacher education, with a focus on 21st century skills, from six countries associated with CODE's work in Africa: Ethiopia, Ghana, Kenya, Liberia, Sierra Leone, and Tanzania. These case studies provide insight into the key issues discussed in Part I of the report.

Part I: Focal Areas of Research

1. Stages of Education: The increase in primary school enrolment leads to greater demand for secondary education, and retention and quality are increasingly important issues for educators and policy makers. Vulnerable children are in particular need of support, both through regular schooling and targeted programs that ensure that all children have equal access to a caring learning environment. The recommendations for research are:

- **Research how early childhood education (ECE) can be based on African realities and practices.** In developing ECE research and practice, care should be taken to consider the differences between Western ECE and childrearing practices, which may not always be relevant or suitable in an African context. Research should uncover how African realities, practices, and local knowledge can be taken into account as this field develops
- **Research how to increase support for vulnerable children.** Children with disabilities, HIV/AIDS, orphans, and other vulnerable children are in need of particular attention within a school setting. Research should inquire into how literacy and other interventions can be as inclusive as possible and support vulnerable children, such as by integrating counselling, community involvement, and classroom practices into literacy development initiatives.

2. Language of Instruction: Language is a contentious issue education in Africa, where the colonial languages of English, French, and Portuguese are often seen as competing with African languages. Research clearly supports teaching in local African languages, but this is only partly the policy in most countries. The recommendations for research are:

- **Research how to implement language planning and literacy instruction in tandem.** Many teachers struggle to teach in a language in which they have little reading and



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writing experience. Teaching in these languages, then, requires concerted efforts of both language planning and language-specific literacy instruction, and research is needed to explore how to develop languages and teach literacy in these languages at the same time. This includes researching how to teach features specific to a language, such as tones, digraphs, and blends, and how to develop specialized vocabulary used in textbooks.

- **Research how to promote mother tongue-based multilingual education.** Research should investigate and document how to expand the use of local languages to upper primary, which currently only takes place in a few countries. There is need for a much better understanding of what is required to do this on a larger scale, including what corpus planning efforts are required. Focus should be on practical, structural, and administrative aspects, not just learning outcomes.

3. Literacy Materials and Publishing: Print literacy materials, such as textbooks and storybooks, are key to helping students develop high levels of literacy. Yet there are often few textbooks and storybooks in African schools, particularly in African languages. Increasing the number of books available to students is important, but teachers' use of textbooks and storybooks in the classroom is also key, as making books available does not necessarily mean they will be utilized effectively. The publishing industry faces challenges from low demand and import of books from abroad. The recommendations for research are:

- **Research how to support teachers in using textbooks and storybooks.** Providing storybooks or textbooks does not always mean that these are read or used in effective ways. Research should explore and guide effective use of literacy materials in ways that are conducive to learning. Building on existing practices, such as shared choral reading, and retelling stories, are starting points that research should investigate further.
- **Research how textbooks and storybooks can promote gender equality.** The recent literature on African textbooks describes a tendency for textbooks to promote gender equality, but sometimes at odds with traditional gender norms. More research is required to learn how gender equality can be promoted while reflecting contemporary African societies, such as through the development or adaption of textbooks and storybooks, and reception studies of these new materials.

4. ICT and Digital Resources: ICT is often seen as a promising contribution to education in Africa and elsewhere, but there are high costs and technical and implementation challenges associated with introducing digital devices to schools. ICT is more than devices for end-users, however. Open educational resources are important for sharing and creating materials, particularly in African languages. The recommendations for research are:

- **Research the development and use of openly licenced books and other resources.** Although openly licenced children's stories are increasingly available online, there is little knowledge about how these stories can best be made accessible to students. Research is needed to shed light on digital and print modes of delivery, and how this can be implemented. Teachers' use of stories could be explored through action research, where teachers and researchers work together to learn how Open Educational Resources (OERs) can best be used in the particular context teachers are working in.

5. Teaching and Teacher Education: Teacher education programs are expanding rapidly across Africa to meet the demand for teachers caused by the growth in enrolment. The quality of teacher education is often raised as a concern, and newly qualified teachers require more support. Learner-centred teaching is frequently promoted, although there is a lack of clarity regarding what this entails in the African context. The use of scripted lessons is often introduced through development programs, but research on their effectiveness compared to other interventions is needed. The recommendations for research are:

- **Research how to improve early literacy instruction, particularly in the mother tongue, in teacher education programs.** How to teach early literacy in teacher colleges is in need of greater attention, as this was identified as one of the key issues in the literature. Research on improving early literacy instruction in teacher education programs would help strengthen this crucial and foundational aspect of education. There is particular need to pay attention to teaching literacy in the mother tongue, which is relatively new in some countries. Research can contribute to our understanding of how the use of literacy materials can be integrated into early literacy instruction.
- **Research how literacy initiatives can take existing teaching practices into consideration.** Learner-centred teaching is one of the most pervasive pedagogical ideas and promoted in many African curricula, but also hotly contested. Research should examine how learner-centred literacy initiatives can be best implemented in an African context. Such research can help clarify how principles of learner-centred education can contribute to higher levels of student engagement within African school settings.

Part II: Case Studies

Part II of this report includes case studies of six focal countries, particularly with respect to language and literacy policies and teacher education. This part is based on policy documents and curricula from the Anglophone countries in which CODE operates – Ethiopia, Ghana, Kenya, Liberia, Sierra Leone, and Tanzania, with particular attention to 21st century skills, such as critical thinking, problem solving, independent thinking, and ICT. The recommendations for research based on the findings from the case studies are:

- **Research how to strengthen connections between theory and practice in teacher education programs.** Research should investigate how teacher candidates can develop pedagogical content knowledge and bridge theory, policy, and practice. Possible avenues for this include action research where tutors and student candidates model principles and elements of teaching, such as word recognition or anticipating story development. Video might be used in documenting and disseminating such enhanced practices that have been developed and tried out through research.
- **Research the implementation of policies on teacher education.** Research is needed to investigate how policies on teacher education are translated into practice, and how the realization of the goals put forth in policies can best be fulfilled. Many policies mention 21st century skills, but very few outline how these can be integrated into teacher education programs. Research that specifically addresses this issue would contribute to making these policies more relevant and help achieve their aim of higher quality education.



Preamble

This report was commissioned by CODE for the research initiative entitled *Guiding Literacy Practice: Context Matters*. It is informed by Canada’s feminist international assistance policy¹ and the United Nations’ Sustainable Development Goal 4: *Ensure inclusive and quality education for all and promote lifelong learning*.² This goal is divided into ten targets.

Early childhood education	By 2030, ensure that all girls and boys have access to quality early childhood development, care and preprimary education so that they are ready for primary education
Primary education Secondary education	By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and Goal-4 effective learning outcomes
Adult education	By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university
Adult education	By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
Adult education	By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries
Teacher education	By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing states
Education of the most vulnerable children	By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations
Education of the most vulnerable children	Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, nonviolent, inclusive and effective learning environments for all
All themes	By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy
All themes	By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development

¹ http://international.gc.ca/world-monde/issues_development-enjeux_developpement/priorities-priorites/index.aspx?lang=eng&menu_id=263

² www.un.org/sustainabledevelopment/education



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The literature on language and literacy education is not evenly addressed across the different stages of education – early childhood, primary, secondary, and adult education. Primary education receives much more funding and scholarly attention than does adult education, for instance. At the same time, most topics cut across stages, as issues of language, materials, and pedagogy are relevant to all stages of education. Thus this review includes attention to a range of research topics, including language, literacy materials, ICT, teaching and learning, and teacher education.

In addition to this more general overview of language and literacy education in Africa, this report includes case studies of six focal countries, particularly with respect to policies and teacher education. The focal countries included in this report are Ethiopia, Ghana, Kenya, Liberia, Sierra Leone, and Tanzania. These six countries include all anglophone³ countries in which CODE operates.⁴ Such a focus on all anglophone countries provides an opportunity to focus on the unique, context-dependent aspects of policies and teacher education in these countries, while also keeping in mind the bigger picture – how policies and teacher education are similar and different across regions and countries. Policies are foundational for what teaching and learning takes place, and they offer an account of how governments envision education in their respective countries. Teacher education similarly provides a foundation for all learning, and changes to what students should learn must also include changes to how teachers are taught.

The case studies pay particular attention to the role of 21st century skills in available educational policy documents, including curricula, with the purpose of getting a better understanding of how these six countries are following up on the call for quality education set forth by the Millennium Development Goals and later the Sustainable Development Goals. While quality education is very broad and cannot be limited to 21st century skills, these skills are central for preparing students for the ever-changing requirements brought about by changing technology, demographics, and societal developments in general. This focus on 21st century skills allows for a more in-depth analysis of policy trends with regards to educational content that cuts across subjects and grades.

It is also important to note that the field of teacher education in all the six countries is undergoing change, and new policies and interventions can make descriptions that are only a few years old, seem dated. In particular, the civil war-affected countries Liberia and Sierra Leone had to rebuild their education systems almost from scratch, as the war ruined schools, forced teachers to flee, and brought teacher education programs to a standstill. However, in the writing of this review, an attempt has been made to reflect the most recent policies and practices as much as possible.

Writing about six different educational systems with different histories and organizational structures quickly runs into the problem of inconsistent terminologies. The institution that trains (primary) school teachers are given different names in most countries, including college of teacher education (CTE) in Ethiopia, college of education (CoE) in Ghana, public teacher training college (PTTC) in Kenya, (rural) teacher training institute (RTTI/TTI) in Liberia, and teacher training college (TTC) in Sierra Leone and Tanzania. These terms have been kept in the description of each country, not least since these institutions are somewhat different. The students who attend these colleges and institutes are referred to as student teachers or teacher

³ Ethiopia is included as an anglophone country since English is widely used in the education system and beyond, even though English is not an official language in Ethiopia

⁴ <https://www.codecan.org/where-we-work>



candidates, and sometimes the two terms are used interchangeably in the same publication. For the purpose of consistency, “student teachers” has been used in this report, while “students” is reserved for the children and teenagers who attend primary and secondary school.



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Acronyms

API	application programming interface
AR	annual report
BECF	Basic Education Curriculum Framework
CIA	Central Intelligence Agency
CoE	college of education
CPD	continuous professional development
CPE	Certificate of Primary Education
CTE	college of teacher education
DBE	Diploma in Basic Education
DFID	Department for International Development
DTM	Diagnostic Teaching Model
ECD	early childhood development
ECE	early childhood education
EFA	Education for All
EGE	Education in a Global Era
EGRA	Early Grade Reading Assessment
ELIP	English Language Improvement Programme
ESDP	Education Sector Development Program
ESP	Education Strategic Plan
ESPoL	Education Sector Plan of Liberia
ESR	Education Sector Report
ESRAM	Education Sector Review Aide Memoire
ETPI	Education and Training Policy and its Implementation
FY	fiscal year
GDP	gross domestic product
GEQIP I	General Education Quality Improvement Program
GES	Ghana Education Service
GeSCI	Global e-Schools and Communities Initiative
HALI	Health and Literacy Intervention
HIV/AIDS	human immunodeficiency virus infection/acquired immune deficiency syndrome
HTC	Higher Teachers Certificate
ICT	information and communications technology
ICTESA	ICT in Education: Situational Analysis
ICTPBE	ICT Policy for Basic Education
IMF	International Monetary Fund
INSET	in-service education and training
JESR	Joint Education Sector Annual review
JSS	junior secondary school
KICD	Kenya Institute for Curriculum Development
LAMP	Leadership and Management Programme
LTTP	Liberia Teacher Training Program
MDGs	Millennium Development Goals
MoEVT	Ministry of Education and Vocational Training
MOOC	massive open online courses



MTB-MLE	mother tongue-based multilingual education
MTBE	mother tongue-based bilingual education
NALAP	National Literacy Acceleration Programme
NCP	National Curriculum Policy
NESP	National Education Sector Plan
NGO	non-governmental organization
NQT	newly qualified teachers
OERs	open educational resources
PFETR	Policy Framework for Education, Training and Research
PTE	primary teacher education
PTTC	public teacher training college
RTTI	rural teacher training institute
SDGs	Sustainable Development Goals
SHS	senior high school
Sida	Swedish International Development Cooperation Agency
SSS	senior secondary school
SWOT	strengths, weaknesses, opportunities, threats
T-TEL	Transforming Teacher Education and Learning
TC	Teacher's Certificate
TDMS	Teacher Development and Management Strategy
TDP	Teacher Development Program
TESO	Teacher Education System Overhaul
TESSA	Teacher Education in Sub-Saharan Africa
TTC	Teacher Training College
TTI	Teacher Training Institute
TVET	technical vocational education and training
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USD	United States dollar
WAEC	West African Examination Council

Definition of Key Terms*

21st century skills	A set of core competencies that advocates believe schools need to teach to help students thrive in today's world, particularly collaboration, digital literacy, critical thinking, and problem-solving, but can also include other skills.
Active learning	Any instructional method that engages students in the learning process, particularly reading, writing, discussion, or problem solving that promote analysis, synthesis, and evaluation of class content.
Critical thinking	Critical thinking is the intellectual process of objectively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating an issue in order to form a judgment, and the skills underpinning this process.
Entrepreneurship	The capacity and willingness to design, launch, and run a new business and accept the risks involved in order to make a profit.
Higher order skills	Thinking processes that are cognitively demanding that are activated when individuals encounter unfamiliar problems, and include critical, logical, reflective, metacognitive, and creative thinking.
ICT	Information and communications technology that combined allow people and organizations to interact in the digital world.
Independent learning	The ability to make informed choices and to take responsibility for one's own learning activities while receiving support and guidance from teachers.
Learner-centred/ child-centred	An approach to teaching that sees learning as process-driven, with emphasis on engaging the students in the learning process based on constructivist learning theory.
Life skills	The ability to adapt to and effectively accomplish our ambitions and deal with the demands and challenges of everyday life by drawing on cognitive, personal, and interpersonal skills.
Problem solving	Problem solving is the act of defining a problem, then identifying and implementing a solution in situations for which no routine solutions exist.

* These definitions have been adapted from www.p21.org, www.crlt.umich.edu/tstrategies/tsal, and www.criticalthinking.org/pages/defining-critical-thinking/766

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Overview and Methodology

Across the globe, Africa is the continent with the highest levels of both illiteracy and poverty, and the two are closely related. However, several African countries are seeing considerable economic growth, and progress in education has been made across the continent. The last two decades have seen a boost in primary education across sub-Saharan Africa, starting with higher enrolment rates in many countries, which paved the way for a shift in focus towards quality education (Gove & Wetterberg, 2011). This shift also increased the attention towards other aspects of quality education, such as gender equality, class size, teacher training, textbooks, and other literacy materials. While considerable efforts went towards building more schools in the mid-2000s to meet the goal of universal primary education, the focus is now on educational quality, as well as school leadership and other features of education (Lucas, McEwan, Ngware, & Oketch, 2014).

The call for universal primary education, announced at the Education for All conference in in Jomtien, Thailand, in 1990, brought together representatives from 155 countries to commit to education as a basic human right. The conference is often seen as the launch of universal primary education in Africa. Although some countries, like Tanzania, had almost achieved this goal, it was later necessary to introduce school fees that in effect caused a sharp decline in student enrolment. Other countries, such as Ghana, only improved enrolment rates much later, which went from 60 percent in 2004 to just over 90 per cent in 2015. Among the six focal countries in this report, Sierra Leone has the highest enrolment rates, with more than 99 per cent of net enrolment in primary schools, while neighbouring Liberia is below 40 per cent. Ethiopia, Ghana, Kenya, and Tanzania are somewhere in between (World Bank, 2016a).

Much of this progress can be attributed to the concerted efforts of African governments, civil societies, and the international donor and NGO community, who have emphasized increased enrolment and gender parity – core parts of the Education for All movement and the Millennium Development Goals (MDGs), as expressed at the World Education Forum in Dakar in 2000. Education is also a priority in the Global Affairs Canada’s new policy on international assistance. The policy, entitled *Canada’s feminist international assistance policy*, considers inclusive quality education for girls in particular a high priority (Government of Canada, n.d.-a). A review of the policy suggested “prioritizing education to reflect Canada’s considerable expertise in education and its critical role in achieving human rights and the 2030 Agenda for Sustainable Development” (Government of Canada, n.d.-b, ¶ 1).

The MDGs have been critiqued for their narrow focus on primary education and enrolment (Fehling, Nelson, & Venkatapuram, 2013; Johnston, 2011). With great improvements in enrolment in Africa and elsewhere, the Sustainable Development Goals (SDGs) stress the need for quality education throughout the lifespan, with special attention to girls and vulnerable groups (UNDP, n.d.). The SDG for education references “relevant skills” (UNDP, n.d., ¶ 4), and “knowledge and skills needed to promote sustainable development” (UNDP, n.d., ¶ 7).

While this attention to quality is welcome, it runs the risk of being translated into developing basic literacy and numeracy skills in primary schools, with less attention to 21st century skills, such as problem solving, independent thinking, critical thinking, and active learning. This focus on high quality education entails preparing students not just to read and write – but to become independent and capable of developing their full potential, including the skills required to build their own future as well as that of their societies in the 21st century and beyond.

The notion of 21st century skills captures the need for students to be prepared for the many challenges they will face in the new century – including those brought about by innovations in digital technology and media. To meet to these challenges they will also need to develop the ability to innovate and critically respond to changing circumstances. There are several books on 21st century skills (e.g., Trilling & Fadel, 2009; Bellanca & Brant, 2010) as well as academic articles. The Partnership for 21st Century Learning (www.p21.org) was established by the business community, education leaders, and policymakers, and is a central reference for 21st century skills (see Appendix A).

Some of the 21st century skills overlap with formulations of higher order thinking skills, which are usually traced back to Bloom's (1956) taxonomy of learning, where analysis, synthesis, and evaluation are seen as being of a higher order than the more fundamental skills of knowledge, comprehension, and application (see Appendix B). Although *critical thinking* and *problem solving* were not included in Bloom's original work, these terms have later been more generally associated with Bloom's taxonomy (Athanasios, McNett, & Harvey, 2003; Krathwohl, 2002; Paul, 1985). As key 21st century skills, they are at the centre of attention in this review. Other key terms include *independent thinking*, *active learning*, and *entrepreneurship*, which are important for the ability to take up ideas and use them independently and in new contexts.

The Partnership for 21st Century Learning lists other skills, including *creativity*, *communication*, *collaboration*, *flexibility* and *adaptability*, all of which are important, but have been given less attention in this review since they are – or can be – more general skills, and not necessarily higher order thinking skills. *Information literacy*, *media literacy*, and *ICT literacy* could be subsumed under ICT more broadly, but none of the documents in this review refer to these three literacies, except one reference to ICT literacy. However, ICT more generally, and to some extent the use of ICT more specifically for teaching and learning, is described in most of the documents. Several curricula and policy documents mention *life skills*, which is also a subject in some countries, and this term has been included.

This report consists of two main parts: Part I addresses focal areas of research and Part II addresses case studies of six countries. Part I covers five key topics in education in five sections: (1) stages of education, (2) language of instruction, (3) literacy materials and publishing, (4) ICT and digital resources, and (5) teaching and teacher education.

Section 1 begins with a brief overview of the key stages of education in the African context: early childhood education, primary education, secondary education, and adult education. Education of the most vulnerable children is also an important area that is included here, even though it spans all ages. The other sections cover aspects of education that are pertinent to all these stages of education. All five sections conclude with key findings and recommendations for practice.

Section 2 addresses the question of language of instruction. While the language of instruction in most of Africa since the end of colonialism has predominantly been English, French, or Portuguese, this has started to change in favour of local languages in the first years of schooling. Teaching, and in particular making textbooks and supplementary readers available in the languages that children speak can be challenging. But the question of language is crucial to achieving quality education where students are given the opportunity to learn and actively participate in class and engage with the learning materials.

Section 3 turns to literacy materials – a crucial part of ensuring high levels of literacy. In order to learn how to read and write, children need print materials, which have often been



lacking in African schools and communities. Textbooks and storybooks are increasingly provided through government initiatives and NGOs, contributing to the availability of reading materials.

ICT and digital resources are the topic of Chapter 4, which discusses ICT in education and the increasing interest in open educational resources. This area intersects with both literacy materials and language, given that print and digital materials are often closely related, since publishing relies on digital formats, and educational programs have the choice of using either printed materials or digital devices. Increasingly, technology is being incorporated into education, partly to support materials development and distribution as well as teacher training.

The fifth and final section of Part I, presents teaching and teacher education. The quest for quality includes substantial attention to teaching and teacher education. Achieving quality teaching is no small matter, and although there are some reports of successful interventions, the matter is still debated. The same applies to coaching and scripted lessons, which are increasingly popular, and learner-centred teaching is widely embraced.

Part II contains case studies of policies and teacher education with a focus on 21st century skills from six focal countries: Ethiopia, Ghana, Kenya, Liberia, Sierra Leone, and Tanzania. These are the anglophone countries in Africa supported by CODE, which was the criterion for their inclusion. Each of these countries is analysed in separate sections. Each section begins with a country description followed by an outline of teacher education and the policy and curricular documents available online or elsewhere. Each document is then described under a separate subheading, with particular emphasis on the mention of any of the 21st century skills, although this term itself is only rarely used. The case study review ends with key findings that briefly summarize and comment on the main findings. After the review of the individual countries, the report ends with concluding remarks based on the review of the six focal countries.

The methodology used in this report is based on a review of peer-reviewed articles, books, project reports, websites, United Nations reports, newspaper articles, World Bank data, policy documents, curricula from sub-Saharan Africa in general, and the six focal countries in particular: Ethiopia, Ghana, Kenya, Liberia, Sierra Leone, and Tanzania. The articles, reports, and other written information were located through extensive Internet searches – for each of the six countries as well as teacher education in Africa in general. It is beyond the scope of this review to cover everything that has been written on literacy education, particularly the general literature, but with a wide range of sources and input from national experts, the report aims to provide a broad overview of key issues and put forth recommendations for future research, policy, and practice in this area.

An important source of information on the focal countries was input from four educational experts: Haregewoin Fantahun Eshete (Ethiopia), Mumuni Thompson (Ghana), Yvonne Capehart (Liberia), and Sam Andema (Tanzania), who responded to a questionnaire designed to elicit more information on teacher education in their respective countries, particularly with regards to 21st century literacy skills (see Appendices C–F). The responses obtained through the questionnaire were then supplemented by interviews with Thompson and Andema, which were recorded, and the two sources of data contributed background knowledge as well as information provided in this report. Mumuni Thompson has shared his insights on teacher education in Ghana. He is in the final stages of his PhD at the University of British Columbia and will soon return to his job at the Ministry of Education in Ghana. *Context Matters* advisor Sam Andema provided information on teacher education in Tanzania. Andema is an assistant professor and

teacher educator at the Institute for Educational Development, East Africa, Aga Khan University, and involved in several educational projects, including teacher education.

The reviewed policy documents were located through thoroughly browsing key governmental websites of each of the six countries, such as the main government portal, the Ministry of Education, Ministry of Information, and ministerial departments or institutions under the ministries of education, such as Kenya Institute for Curriculum Development (KICD, kicd.ac.ke). This yielded a considerable number of documents, including those written by other entities, such as non-governmental organizations (NGOs), and extraneous documents, such as scholarships and job descriptions. A few documents were drafts, and these have been excluded from this review. In the case of Ethiopia, a few documents were also in Amharic, which made them difficult to include. But judging by their layout and context, these did not appear to be key policy documents, but information sheets and in one case a syllabus.

Another Internet search for policy documents on other websites yielded some new policy documents for Liberia, Ghana, and Ethiopia. A Liberian church had re-hosted the national syllabi, while UNESCO's website held a copy of the two volumes of the *Education Strategic Plan of Ghana*. Finally, Global Partnership for Education is an NGO that supports governments in developing countries with producing their Education Sector Plan. It was the only source of this document for Liberia and Ethiopia. One of the African advisors, Haregewoin Fantahun Eshete, also provided documents from Ethiopia on EGRA, supply and demand of teachers, and two policy documents that were listed on Ethiopia's Ministry of Education's website, but not available for download.

The set of documents were then read, skimmed, and searched, particularly for references to 21st century skills. Many documents referred to these in other words, using phrases such as "think critically" instead of the more common "critical thinking", which necessitated a more careful reading than simple searches. The tables with 21st century skills were developed by searching each cited document on teacher education (most, but not all publications cited in this report). Since expressions like "critical thinking" can also be expressed as "think critically" and in longer phrases, the search took such variations into consideration.

Part I: Focal Areas of Research

1: Stages of Education

Key findings and recommendations for research and practice

- Research how ECE can be based

Education in general, and literacy in particular, is foundational for children to reach their fullest potential and to become active, critical, and informed citizens in their societies.

Learning how to read and write enables personal growth, confers crucial practical skills, and opens doors to higher education and professional jobs for girls and boys. But education is also important for other foundational development goals, such as better health, fewer children, and later pregnancies. Literacy is therefore both a goal in itself and a means to achieve other goals, including gender parity and economic growth.

The last few decades have seen great improvements in education and literacy levels in Africa. Enrolment rates more than doubled between 1990 and 2012, while 15 countries have put an end to school fees – a major obstacle for students from poor households (Africa-America Institute, 2015). In spite of this, 38 million African primary school-age-children were out of school in 2014 – more than half of the global total. This is a problem across the continent, as no African country has reached the goal of universal primary education (Africa-America Institute, 2015). Pre-primary education, on the other hand, is nowhere near the levels of enrolment seen in primary schools. However, institutionalized education and care for the youngest children varies greatly between countries, and overall is rapidly growing and is attracting increasing interest from researchers.

This chapter provides an overview of the stages of education – early childhood education, primary and secondary education, and adult education. It also reviews education of the most vulnerable children, including children affected by humanitarian crises such as those caused by armed conflicts and diseases, like HIV/AIDS. The chapter concludes with key findings and recommendations specific to these topics.

1.1. Early Childhood Education

Early childhood is a critical phase of education, since the social, emotional, physical, and nutritional foundations laid in this stage are crucial for all future learning and development. The importance of the first years of children's lives are increasingly given attention by educational policymakers, as early childhood education (ECE) has received renewed attention by policymakers in the developed world in the last two decades. In the same period, efforts have put ECE on national development agendas in Africa – for a good reason.

Children who attend pre-primary education experience a better transition to primary school and are more likely to complete. With rapidly changing household structures and urbanization, including increasing number of working mothers, the need for nonparental child care is growing. The HIV/AIDS crisis exacerbates this need. Children under 5 are increasingly malnourished, which adversely affects their physical and mental development, and hence their school performance (Garcia, Pence, & Evans, 2008). These factors contribute to the need to develop quality early childhood education and care.



The transition to primary school is a critical period for children. In Africa much of the interest in early childhood education revolves around what services can be offered to children immediately before they enter primary school (Biersteker, Ngaruiya, Sebatane, & Gudyanga, 2008). There are several practical benefits of adding a pre-primary class in primary schools, since the existing administration and infrastructure can be drawn upon for the pre-primary class. However, locating a pre-primary class in a primary school signals that the two are similar in nature, an assumption that is often strong in Africa. Pre-primary programs, especially in the private sector, often emulate primary school instruction, which is popular among parents, despite the focus on a child-centered and interactive play environment that is central in the early childhood education literature. A UNESCO policy brief expresses this concern candidly: “when PPE [pre-primary education] is concentrated on 5-year-olds, it is likely to become a crash course for children who are about to enter formal schooling, rather than a gradual process of building a foundation for lifelong learning, focusing on children’s holistic development” (UNESCO, 2004, cited in Biersteker et al., 2008).

ECE is a relatively new field of professional practice and research in Africa, which means that the available scholarly literature is limited. ECE, like all contemporary education in Africa, is heavily influenced by Western ideologies and realities. Nsamenang (2009) argues that ECE in Africa should be built on African needs and realities, rather than imported and adapted from the West. Pence and Marfo (2008) express similar thoughts, warning against relying on knowledge based on foreign research to develop an ECE for Africa, as the realities in Africa are quite different. For instance, they point out the common practice of children taking care of children in Africa, which goes against Western notions of childrearing. Pence and Marfo stress the need to develop contextualized, local research from Africa.

[P]olyphonic activity and appreciation of diverse knowledge allows not only new understandings and possibilities to emerge, but also helps to address critical Majority World issues such as reducing brain drain, building local capacity, addressing program and service relevance, promoting local pride and commitment, and achieving higher levels of sustainability. The way forward, then, is not “more of the same” or to “try harder”—but to try differently. (Pence & Marfo, 2008, p. 86)

1.2. Primary and Secondary Education

Primary education across Africa has expanded rapidly over the last couple of decades. The average net enrolment rate in sub-Saharan Africa is 78 per cent, and Ghana and Sierra Leone are both above 90 per cent (World Bank, n.d.). This achievement is due to concerted efforts by governments and donors to aim for universal primary education, and also increasing demands among parents who value education for their children. In Uganda, primary education almost tripled from 2.6 million in 1996 to 7.5 million in 2008, as more schools were built and school fees were dropped (Altinyelken, 2010). Similar developments have taken place in other countries (e.g., Tilson, Kamlongera, Pucilowski, & Nampota, 2013), suggesting that demand for primary education is very high, but infrastructure has often been lacking. School fees are an important factor in keeping children from entering school, particularly the poorest students (Oketch, Rolleston, 2007). Indirect or hidden fees in the form of examination fees, school uniforms, after-school coaching, and “voluntary” parent-teacher association dues sometimes turn “free” primary

education into a significant expense for poor parents, who may be forced to keep their children at home (Williams, Abbott, & Mupenzi, 2015).

Despite advances made in terms of enrolment, student retention remains a problem. This is a complex issue, and partly a reflection of poverty and parents' need for children to work at home or for money (Abuya, Oketch, & Musyoka, 2013). Student drop-out rates are also symptomatic of a school system that fails its students: those who see little or no point in staying in school are likely to drop out. This realization is not new, but has been at the heart of the question of primary education in Africa since enrolment rates started rapidly increasing, if not before. Achieving quality education is widely seen as the major challenge today, and represents a shift away from the rather limited focus on enrolment rates of the 1970s and 1980s.

Quality education is not just about student retention, but encapsulates efforts of improving education more generally. Challenges such as large class sizes, lack of materials, underqualified teachers, language barriers, and high-stakes exams all contribute to low retention rates and quality of learning (Rea-Dickins, Yu, & Afitska, 2009; Williams et al., 2015). These are some of the issues that efforts to improve education in Africa address, alongside broader issues, such as school facilities and leadership, and parental engagement. African governments also develop policies and curricula intended to guide and support efforts at the district and school levels.

The increase in primary and – in many countries – the establishment of universal primary education, has increased the number of students eligible for secondary education. This has put pressure on secondary schools, which are often not able to meet the surge of new students (Oketch, Rolleston, 2007). Uganda is the only country in sub-Saharan Africa with a policy on universal secondary education, but it is still far from achieving this (Chapman, Burton, Werner, 2010). The increased attention to secondary education raises question of the quality of education in secondary schools – an aspect of education that has heretofore largely be raised in the context of primary education.

1.3. Adult Education

Adult education covers several areas, including adult basic education, technical and vocational training, higher education, and lifelong learning more broadly. Adult education is a valuable in its own right as a matter of equity – everyone should have the literacy skills required to fully function and benefit from services and opportunities. Apart from self-realization and personal benefits, adult education is seen as a vehicle of poverty reduction, gender equality, and a more powerful labour force. Programs for adults are more likely to reach women, which add to their value to increasing equity (Lauglo, 2001). Parents, and mothers in particular, who receive literacy training, are more likely to support their children's education (Lauglo, 2001).

The predominant focus on literacy programs has been critiqued for the lack of attention to other skills. However, literacy skills alone are not sufficient to reduce poverty, one of the main goals of adult education. Van der Veen and Preece (2005) argue that agricultural extension, vocational education, community development and training for active citizenship are also central important in adult education, particularly for achieving poverty reduction.

1.4. Education of the Most Vulnerable Children

The children in highest need of education and care are too often the ones who receive the most inadequate attention. Children with disabilities find that schools and materials are not made for them, and that their teachers lack knowledge, training, and resources to give them appropriate education. The HIV/AIDS pandemic has particularly affected Africa, rendering a large number of children orphans and/or living with HIV/AIDS. Civil wars and conflicts have also disrupted education in many African countries, which has created a challenge for students and teachers trying to resume teaching and learning in a post-conflict context. While these groups are minorities and sometimes numerically small, half of all children – girls – are also disadvantaged in today’s educational system. Girls’ enrolment rates vary across Africa, with some countries having achieved equal enrolment for girls and boys, other countries are far from achieving that goal. Girls are also particularly at risk for sexual violence, including rape. In his area also there are considerable variations between countries (Concern Worldwide, Catholic Relief Services Sierra Leone Program, IBIS, & Plan Sierra Leone, 2010).

There is no single agreed-upon list of criteria for what vulnerability means. Lekule and Beckford (2013) operate with criteria for vulnerability that include children who are abandoned or orphaned, live on the streets, work (esp. doing hard labour), and children living with abusive or critically sick caregivers. Precise definitions aside, vulnerable children are both under-supported in the educational system and under-documented in the scholarly literature on education. Nevertheless, schools can serve as a “home away from home” where vulnerable children feel safe (Lekule & Beckford, 2013). At the same time, out-of-school children, a group in which vulnerable children are overrepresented, are often not in position to attend school, and the syllabi, learning materials, and age-based division of classes make schools less relevant for this group of children.

There is a growing body of research discussing the need for schools that are more inclusive and “caring” with regards to vulnerable children, particularly those living with HIV/AIDS. Although there are many obstacles to this, the school as a notion of “caring schools” is being explored in southern Africa, where the prevalence of HIV/AIDS is the highest. Williams (2010) discusses this issue in her research paper from South Africa. She finds that the constraints the schools are facing, including lack of resources and teacher burdens, makes the additional caring responsibility challenging. Teachers in the study also pointed out the abuse and violence their students experienced, including sexual, physical, and emotional abuse by family and caregivers. The teachers, in particular primary school teachers, expressed a desire to help their children where others fail them, but stated that proper training and pay would be required.

Jere (2014) reports on a project that developed a school-based intervention to implement support for orphaned and vulnerable children in 20 schools in Malawi. The intervention included several efforts to support vulnerable children, including a buddy system, counselling, community involvement, keeping track and following up with absent students, and school- and classroom-level policies to prevent exclusion and discrimination.

1.5. Key Findings and Recommendations for Research and Practice

On the basis of the review of the research, the following is a list of key findings and recommendations regarding ECE, primary, secondary, and adult education, as well as education of the most vulnerable children.



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1.5.1. Research how ECE can be based on African realities and practices

ECE is a relatively new area of interest in Africa, but it is increasingly the subject of government policies, parents' attention, and researchers' agendas. In developing ECE research and practice, care should be taken to consider the differences between Western ECE and childrearing practices, which may not always be relevant or suitable in an African context. Research should uncover how African realities, practices, and local knowledge can be taken into account as this field develops further. Differences in childrearing practices and financial means might have very different implications for ECE in Africa. At the same time it is important to be cognizant of differences within Africa, not least financial differences, but also cultural differences caused by the rural–urban divide, as well as other cultural differences. There is no single way of educating pre-primary age children, and local circumstances are arguably even more important to take into consideration when it comes to the youngest children. Research in this area could help build a stronger ECE that is based on African realities and practices.

1.5.2. Research how to increase support for vulnerable children

Children with disabilities, HIV/AIDS, orphans, and other vulnerable children are in need of particular attention within a school setting. While increasing the enrolment and quality of education generally is likely to benefit this group of students, special efforts should be taken to protect and support vulnerable children. Developing schools that are more inclusive and caring is important, such as through special programs. Developing programs targeting vulnerable children might be pertinent in certain situations, such as post-conflict areas, but more research is needed on how this can be done. Research should also investigate how literacy and other interventions can be as inclusive as possible and support vulnerable children, such as by integrating counselling, community involvement, and classroom policies into literacy development initiatives.

1.5.3. Avoid turning ECE into an extension of primary school

Young children benefit greatly from playing and exploring, but traditional classroom teaching of letters and words may not be developmentally appropriate for pre-primary school age children. Care should be taken to avoid making ECE a downward extension of primary school, where five-year-olds cram to prepare for grade 1. Parents' expectations and understanding of what education means might put pressure on ECE educators and others in the field to make ECE look more like primary school, and since ECE is voluntary and parents pay, they might have stronger influence in this stage than they do in compulsory schooling.

1.5.4. Strengthen the trend towards universal primary education

Although the goal of universal primary education has not been reached, many countries have come far in approaching this goal. However, the children who still do not benefit from this are disproportionately poor, and in some countries girls are also greatly disadvantaged in this regard. As efforts to increase universal primary education grow, attention should be paid to how disadvantaged children in particular, are not allowed an education, and what can be done to address this. This may include addressing hidden fees, child labour, home chores, distances to school, and other factors. Some of these factors will also affect dropout rates, which are further



exacerbated by poor quality of education, including difficulties or learning in a language the students do not speak well. Enrolment and retention are related aspects of education that need careful attention in order to achieve the goal of universal primary education.

1.5.5. Improve quality through all stages of education

Increased enrolment in primary school has led to growing attention to secondary school, particularly with regards to enrolment. Quality secondary and adult education are also crucial for educating people with the skills required for the 21st century. Learning new information and skills is largely based on prior knowledge, understanding, and practices. This means that efforts to address quality secondary school education should not be seen in isolation, but build on best or enhanced practices in primary school. Efforts to address issues of quality education, including teaching methods, textbooks, and assessment practices, are important in their own right, but should be developed in relation to the primary school practices that secondary school students have been socialized into.

2: Language of Instruction

Key findings and recommendations for research and practice

- Research how to implement

The question of language of instruction is a highly contentious issue in Africa; hotly debated in the media and frequently addressed in the academic literature (Bamgbose, 2014; Brock-Utne, 2000; Kamwangamalu, 2016; Romaine,

2013). There are some 2110 languages spoken in Africa (Lewis, 2009), and only a few, mostly small countries (Botswana, Burundi, Lesotho, Madagascar, Rwanda, Somalia, and Swaziland, and some small island states) in sub-Saharan Africa have one language spoken by the vast majority of its population. This abundance of languages, coupled with a colonial history that for the most part promoted the use of colonial languages, has led to the use of a colonial language as the medium of instruction – French, Portuguese, and English. The chapter examines this issues, as well as language planning and teaching in local languages and challenges and resistance towards the use of African languages for education.

2.1. Colonial Languages vs. African Languages

There are several theoretical approaches to understanding the role of English in Africa and other post-colonial contexts. Pennycook (2001) provides a useful overview by listing six frameworks to analyze contemporary debates on English that together make up a continuum. These include *colonial celebratory*, a view that sees the spread and use of English as a useful tool, and *laissez-faire liberalism*, which highlights the question of individual people’s choice in learning and using English. Viewing English principally as a means of facilitating global communication (Crystal, 2012) and focusing on individual learner’s choice are expressions of this line of thinking (McKay, 2002). McKay (2002) claims that the spread of English and the concomitant inequities come from “those who consciously choose to learn it” (McKay, 2002, p. 24).

A more critical stance is represented by Phillipson (1992, 2009), who coined the phrase *linguistic imperialism* to express how English perpetuates colonialism and benefits Great Britain and other English-speaking countries in the “inner circle” (Kachru, 1985), at the expense of linguistic and cultural diversity. Brock-Utne (2000) holds a similar view, arguing that English, French, and Portuguese are colonial languages imposed on students and impede their education, as most of them do not speak these languages well enough. Along the same lines, Skutnabb-Kangas (2000, 2008) considers learning and speaking one’s mother tongue a linguistic human right – what Pennycook (2001) calls *language ecology and language rights*. Writing about a language in Zanzibar, Babaci-Wilhite (2015) argues that a reform to introduce English in upper primary schools violates the students’ educational rights since they do not adequately speak English.

Other scholars (Canagarajah, 1999, 2004; McKay, 2010; Pennycook, 1994, 2007a, 2007b) stress the fluid and changing nature of languages and emphasise the agency of language users, arguing that “English” is no longer a uniform construct. Instead, these and other scholars point to the plurality English around the world – *World Englishes*. In this research paradigm, scholars argue that language users appropriate and adapt English for their own purposes, and that multiple varieties of English do and should exist alongside one another, much like British and American English do today. Key to the notion of World Englishes is the shift to a “pluricentric view of



English” (McKay, 2010, p. 91), where varieties such as Nigerian English and Ugandan English are on a par with British English.

The question of English (and French and Portuguese) in Africa are not primarily about the nature of these languages – but their relationship with African languages, particularly the matter of which language to use as the language of instruction. Educated elites are said to favour colonial languages, as they and their children benefit from the use of a language that few people speak (Opoku-Amankwa, 2009; Prah, 2003). This tendency notwithstanding, many African countries have a policy of mother tongue instruction in the early years, followed transition to the colonial language (English, French, or Portuguese). This support for mother tongue instruction in the early years seems to be growing with policy makers, with curricula mandating the use of students’ mother tongue, or a language familiar to students, in many countries. This is in line with the research on language of instruction, which strongly advocates mother tongue instruction for several years of schooling, as students benefit from studying in a language familiar to them (e.g., Laguarda & Woodward, 2013; Ouane & Glanz, 2010; Piper, Zuilkowski, & Ong’ele 2016; Sailors, Hoffman, Pearson, Beretvas, & Matthee, 2010; Trudell, 2013).

Some African countries do not use local languages for instruction at all, while others have a policy of using local languages for three years, before a transition to English in grade 4. Ethiopia, Eritrea, and Tanzania appear to be exceptions, as African languages are taught in primary school, but in in these countries this does not always apply in upper secondary school (Brock-Utne, 2012; Heugh, Benson, Bogale, & Yohannes, 2007). Somalia is the only country that has used a late-exit model for a long time, which means that the transition to a colonial or regional language does not happen until grade 5 or 6 (Heugh, 2011).

While research from Western countries is often favourable of “immersion” – where students study in a foreign language from grade one, the same is not true for African students, who typically do not enjoy the resource-rich environment that make this form of language learning possible for their Western peers. Although there is no consensus on when the medium should change from mother tongue to international language of wider communication, research suggests that the longer students are taught in their first language, the more they benefit (Heugh, 2011). Some researchers argue that students’ mother tongue should be used as the medium of instruction for at least six to eight years of schooling, but this is a low estimate, and Heugh (2011) recommends the use of African languages as the primary medium of instruction until the end of secondary school.

2.2. Language Planning and Harmonization

Languages need a stable written form in order to be printed and used for educational purposes. The fact that the majority of the over 2000 languages do not have a well-established writing system raises concerns for the feasibility of providing adequate literacy materials in all languages. By the same token, many African languages exist along a dialect continuum, making it both difficult and problematic to draw boundaries between them, which a standardization process would require. Weber (2016) presents three different ways in dealing with different dialects in an educational setting. All models have shortcomings, and ultimately it is the community that should decide what works best for them, she argues. A prestige dialect can be used, such as one that is already established as dominant through trade or otherwise. This can be controversial, however, since it tends to favour one group over another and re-draws social boundaries. Merging two smaller dialects is an option that worked in Peru, where there are five



dialects of Quechua. However, in a project that merged two languages, only the first book was fully unified, while the higher level books were not. Over time, community leaders increasingly wanted separation, and developing two sets of materials became necessary. However, in the initial phase this approach was cost-effective and promoted unity. Another possibility is to create a pan-dialect that brings together elements of different dialects. The formalized creation of such a pan-dialect is called harmonization.

The multiplicity of languages and concomitant challenges has led to the question of whether related languages should be harmonized – unified through a common written form. Although harmonization has some advocates (e.g., Prah, 2002), it is controversial, as it is accused of redefining ethnolinguistic affiliations and favouring some dialects over others (Hadebe, 2009). The fact that many languages straddle national borders and have been given an orthography by different groups of missionaries, contributes to this controversy.

There have been several efforts to harmonize African languages, but it is not clear how successful these attempts have been. Hadebe (2009) describes the efforts to harmonize the Nguni languages of southern Africa, dating back to 1944, when it was first suggested. The Centre for Advanced Studies of African Society has been working on harmonizing Nguni and other languages. However, “The current approach to harmonization is half-hearted and piecemeal, focussing mainly on orthography, which is considered safe” (Hadebe, 2009, p. 281). Perhaps the best-known example of harmonization is Runyakitara, in which four related languages of Western Uganda – Runyoro, Rukiga, Runyankole, and Rutooro – were unified in the 1980s (Bernsten, 1998). Runyakitara is still under development, but it is actively supported by the government, with textbooks, theatre groups, and university courses in this language. It is not clear if attempts by the elite in the capital Kampala, particularly Makerere University, will translate into acceptance of the people of Western Uganda who speak Runyoro, Rukiga, Runyankole, and Rutooro – for whom this artificial language primarily has been created.

Implementing a language policy, often referred to as language planning – requires efforts at different levels, including political, linguistic, and social areas of a society:

- status planning – decision, about which language to use in institutional settings, like national, regional, and local governments, courts of law, and education;
- corpus planning – the development of a standardized written language through an orthography, dictionaries, and terminology;
- acquisition planning – the development of materials, learning programs, and translation (Heugh et al., 2007).

Successful language planning further requires the acceptance and active participation of civil society in the decision-making process, advocacy and awareness-raising, including about educational benefits, a realistic timeframe and funding, and monitoring and evaluation of the policy implementation in order to address challenges or modify the policy (Heugh et al., 2007). Kaplan (2011) points to some of these in explaining why language planning often fails, including insufficient time, training, educational materials, but also issues of language norms and community objectives. Jones (2012) points to the need to foster favourable attitudes to the use of local languages, such as through micro-language planning activities, for the use of minority languages in education to be effective. Writing about Uganda, Heugh and Mulumba (2014) recommend a national conference on orthography development to “guide agreements on consistency of theoretical and practical trajectories of orthographic development over the

medium to long term” (p. xi). They further recommend the transfer of the development of materials to the language boards and National Curriculum Development Centre.

2.3. Teaching in Local Languages

Although research is clear on the benefits of mother tongue instruction, this is not always consistently practiced, and often only for the first years of primary school. In Kenya, English and Kiswahili are often taught from grade one despite the policy of mother tongue instruction (Dubeck, Jukes, Matthew, & Okello, 2012). Piper and Miksic (2011) found that the mother tongue was used in only 14 per cent of grade 1–3 classrooms, compared to 71 per cent in Uganda. The authors point to the ethnic tensions associated with political elections as part of the reason, as teaching in the mother tongue is seen as reinforcing ethnic boundaries at the expense of national cohesion. Nyaga and Anthonissen’s (2012) research from Kenya suggest that the policy of mother tongue instruction is interpreted in different ways, and many teachers code-switch between English and Kiswahili, and sometimes the local language. The fact that exams are in English and teachers can be placed anywhere in the country in effect challenge the policy of mother tongue instruction in practice.

There are few long-term mother tongue-based multilingual education (MTB-MLE) programs for ethnic minorities in Africa. This makes it hard to point to specific empirical evidence to guide recommendations, even though existing research from Africa and elsewhere strongly supports late-exit bilingual education generally (Malone, 2016). Most programs are early-exit – they transition to a dominant language within three years. Ethiopia is currently the only example of a system-wide fully functioning late-exit or additive programmes (Heugh, 2011).

Heugh and colleagues (2007) analyzed the use of local languages as the medium of instruction in Ethiopia, where students learn Amharic, the official working language, and English, as additional languages. The use of local languages for eight years of schooling is described as a great success, and “one of the best on the continent and promotes sound educational practice” (Heugh et al., 2007, p. 7). Teachers’ knowledge of English was very low, however, so training of teachers in English would be required since students transition to English medium after eight years of schooling.

Walter and associates (Walter & Chuo, 2012; Walter & Trammell, 2010) report on a project in Cameroon where most students spoke Kom, while a minority spoke Fulfulde. The findings suggest that these pupils performed better in English, language arts, and maths than the students in the English-medium control group. The Fulfulde-speaking pupils also performed better in the experimental schools than in the control schools, which suggests that they picked up some Kom, and were not at a disadvantage. Abiria (2011) similarly found that many students speaking other mother tongues had learnt the local language better than English, although she did not test their proficiency.

Benson (2016, p. 8–9) provides a list of what is required for the successful implementation of a MTB-MLE program:

- A pool of teachers with proficiency in multiple languages, and their deployment to schools according to learners’ language needs;
- Training programs that provide teachers with strategies for identifying the languages spoken in their classrooms and addressing learning needs accordingly;
- Linguistically and culturally relevant teaching and learning materials that promote learner identity formation and build self-esteem;



- Assessment methods and instruments that use multiple languages to capture learners' abilities and capabilities while diagnosing individual needs;
- School curricula that facilitate development of learners' L1 competencies to high levels, giving them strong foundations for literacy and learning.

Heugh and colleagues (2007) make a number of recommendations regarding improving teaching and learning, most notably the establishment of a National Centre for Development of Ethiopian Languages in Education. This centre should develop Ethiopian languages, particularly regional languages like Oromifa, Tigrinya, and Somali, in collaboration with regional education bureaus and regional universities. Language planning, such as corpus planning, terminology, and lexicography would be important to further develop Ethiopian languages for educational purposes. They also recommend including languages other than English for assessment in grades 10 and 12.

2.4. Challenges and Resistance Against Using Local Languages in Education

In spite of this research and policy changes in favour of using local languages for instruction, there is considerable resistance, notably from parents, but also from teachers and policy-makers. English is seen often as a language of science and technology, a means of social advancement. Some parents favour English since it leads to work opportunities (Babaci-Wilhite, 2010). Tembe and Norton (2011) studied Ugandan parents' and other stakeholders' knowledge of the new curriculum that introduced the mother tongue as the medium of instruction in lower primary. They found that parents suspected policies on mother tongue to be politically, rather than socio-linguistically, motivated. The local language was important for their and their children's identity, and tied to home culture, while English was strategically important and tied to school and professional and academic success in life. The participants also raised concerns of a potential conflict between the language of exams (English, at the end of primary school) and the language of instruction (the local language, in lower primary). Many parents prefer English from day one, based on the assumption that English as the medium of instruction equates optimal acquisition of the English language (Banda, 2000; Obondo, 2007; Opoku-Amankwa, 2009; Tembe & Norton, 2008).

The changing demographic landscape, particularly urbanization, begs the question of how mother tongue instruction can be carried out in classrooms that are increasingly multilingual. Nevertheless, there is little research available on mother tongue literacy instruction in multilingual classrooms. Mother tongue instruction sometimes face practical challenges of teachers not speaking the same language as their students, especially when teachers are sent by the government to teach in other districts (Piper, Zuilkowski, & Ong'ele 2016). Another problem arises in multilingual communities, where not all students speak the same mother tongue. This is increasingly common, since urbanization and migration has radically changed the demographic and linguistic landscape in many African countries, including the spread of regional lingua francas such as Kiswahili and Hausa. Benson (2000, 2016) calls for closer attention to assumptions about linguistically mixed areas. She cites experiences from the capitals of Mozambique and Guinea-Bissau as examples of linguistically homogeneous areas. In urban and other areas experiencing migration, it is pertinent to investigate to what extent students speak and understand the dominant regional language, even if they speak a different mother tongue.

2.5. Key Findings and Recommendations for Research and Practice

Based on the review of literature on language of instruction, and drawing on the wider literature and personal research, the following outlines key findings and recommendations with regards to language of instruction.

2.5.1. Research how to implement language planning and literacy instruction in tandem

Developing quality education and ensuring student retention is predicated on a number of factors, including instruction in a language students understand. Teaching in a language students understand is a well-established and research-supported principle. One of the key obstacles to implementing mother tongue-based multilingual education is that the languages that students speak are not adequately developed and adopted. Many teachers struggle to teach in a language they are not experienced with reading and writing. Teaching in these languages, then, requires concerted efforts of both language planning and language-specific literacy instruction, and research is needed to explore how to develop languages and teach literacy in these languages at the same time. This includes researching how to teach features specific to a language, such as tones, digraphs, and blends, and how to develop specialized vocabulary used in textbooks.

2.5.2. Research how to promote mother tongue-based multilingual education

Many countries now have policies in place to teach in students' mother tongue for the first years of primary school. Although this is a good start, three or four years is not enough to build a foundation for learning in a foreign language, such as English or French. Teaching in a language familiar to students until to the end of primary, as some countries are already doing, is a model to follow. Achieving this aim is not simply a matter of policy, however, since such an expansion would require extensive planning and an overhaul of the education system. This should be the long-term goal, and in the short and medium term, steps should be taken to prepare for this expansion. Teacher training is one step, and training teachers in the lower grades is important both for the implementation of current policies as well as in preparation for an expansion. Not all teachers are fully literate in the local language, and some do not fully appreciate the value of such policies. Teacher placement practices, where teachers are sent to teach in areas where they don't speak the language, should be thoroughly revised, and possibly replaced, to ensure that teachers speak the local language, as far as possible.

Another key area is to gain experience with using local languages in upper primary. While research is supportive of this when it comes to student learning, there is need for a much better understanding of what is required to do this on a larger scale, including what corpus development efforts are required. Some countries, such as Tanzania and Ethiopia, have experience with this, but mostly using well-established languages such as Swahili and Amharic. Some of these experiences might be valuable for other countries, but using less established languages is likely to require additional efforts, including convincing various stakeholders. Research should investigate and document how this can be done, with a focus on practical, structural, and administrative aspects, not just learning outcomes.

2.5.3. Build capacity for language planning

Language planning should consider both the national context as a whole as well as individual languages. A national agency that oversees the development of local languages is in place in many countries, and such efforts of national coordination should be strengthened. Local and regional efforts are arguably even more important, as most languages are spoken in relatively small areas. Language boards exist for many languages, but their support appears to be limited, even though these boards are crucial for language planning and serve as a bridge between the local community and the government. Language boards, in consultation with community and government stakeholders, should also be supported in establishing language boundaries and orthographies, and making decisions about terminologies and harmonization, where these are not in place. This kind of status and corpus planning is a crucial foundation for enabling the use of local languages as the language of instruction; in many places a policy that is difficult to implement in the current situation.

2.5.4. Support and develop African languages broadly

Preparing and developing African languages for their use as languages of instruction requires much greater efforts than what is being done today. Hasty orthography revisions for the purposes of implementing a new intervention (as was the case of Lugbarati, see Stranger-Johannessen, forthcoming), may be based on good intentions, but reflects lack of long-term language planning. Funding models that are centred on short-term projects favour such approaches. What is really needed to properly implement and further develop mother tongue instruction policies, is long-term capacity building of African languages that are not limited to single projects. This includes basic corpus planning, such as terminologies, dictionaries, storybooks, and textbooks. However, a genuine support for mother tongue literacy instruction requires more holistic efforts, including supporting the place of African languages in society as a whole. Supporting and developing local language newspapers is one way doing this, with a relatively long history in parts of Africa, such as Tanzania and Uganda. Some larger languages currently have newspapers, and an NGO in West Africa prints newspapers in national languages (Diallo, 2011). Supporting newspapers to print feature articles or supplements in African languages, as is common in Namibia (Reiner, 2011), or subsidizing newspapers in mid-sized languages, are some possibilities. Broader support for African languages is also likely to help parents and other stakeholders accept language policies, which is not always the case. Parents might also reject a (new) orthography if they are not familiar with it. Conversely, literate parents are in a much better position to support their children's literacy development.

2.5.5. Consider how exams can accommodate mother tongue-based education

Exams often influence what is taught – the so-called washback effect. This is particularly the case in high-stakes exams that determine who can continue to the next educational stage, such as the primary leaving exam. Any consideration of language issues in education must therefore take exams into consideration. Changing the language of the exam is a big step, but it's possible to break this up, and use two different languages for different parts of the exam. With the long-term goal of mother tongue instruction throughout primary school in mind, dual-language exams could be an important step. Another possibility is to experiment with a mock exam in local languages – on that is marked but not counted towards secondary school admission.



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3: Literacy Materials and Publishing

Key findings and recommendations for research and practice

- Research how to support teachers in using textbooks and storybooks
- Research how textbooks and storybooks can promote gender equality
- Develop storybooks and textbooks, particularly in local languages
- Support African publishing

There is little doubt that literacy materials such as storybooks are important for literacy development; research has repeatedly demonstrated the importance of reading (Clark & Rumbold, 2006; Garan & DeVoogd, 2008; Krashen, 2004). Not only are such texts important for the development of literacy in the mother tongue, but they also serve as the foundation for the development of literacy in other languages, such as English, French, and Portuguese (Cummins, 2007).

Since the introduction of schooling, teachers have relied heavily on chalk and talk as their main resource for teaching literacy (and other subjects), and thus have had little opportunity to develop teaching methodologies for using storybooks in their teaching. This is slowly changing, as education, particularly primary education, is receiving increasing support and attention from governments and donors (Altinyelken, 2010).

Literacy materials encompass a number of different kinds of materials, including charts, posters, flashcards, games, and textbooks, notebooks, newspaper clippings, storybooks, and other books and materials. In addition to these, non-print materials, such as pictures and objects, are important part of a rich learning environment and enable and encourage multimodal learning. Teachers often make charts, flashcards, and other materials that can aid literacy learning. More linguistically complex and comprehensive materials such as textbooks and storybooks are much harder to make, but nevertheless crucial for exposing students to a print-rich environment that can help them develop fluency and speed in reading. Textbooks are often provided by the government, if at all, but typically get outdated each time the curriculum is changed, and their development require subject matter and curricular expertise, and must often be approved by the government. Storybooks, or supplementary readers, have fewer restrictions, and often the only books in which smaller languages are written, making them crucial for mother tongue literacy development.

3.1. Storybooks

There is a substantial shortage of children's storybooks in Africa, particularly in African languages (RTI, 2016; Results for Development, 2016). Books found in African schools and libraries have often been from Western countries, and reflect foreign curricula, themes, and imagery (Dent & Yannotta, 2005; Rubagumya, 2009; Waruingi, 2009). The market for children's storybooks in Africa, particularly in African languages, is small, in part because many languages have few speakers, but also for economic and political reasons (Opoku-Amankwa, Edu-Buandoh, & Brew-Hammond, 2014). This makes local publishing of storybooks challenging, and makes importing books an attractive alternative. Although some donors are more sensitive and selective in their donations and program operations than others, donating foreign books remains controversial.



A number of interventions in Africa have combined the provision of supplementary readers with an element of teacher training. These have had mixed results, however. In 2000 and 2002 the Minds Across African Schools Club in Uganda gave 150 poorly resourced schools in and around Kampala a library-in-a-box, containing 300 non-textbook reading materials. The researchers in the study found that the books were often left in the box unused (Muwanga et al., 2007). Research from Kenya on the provision of textbooks to rural primary schools similarly point to a lack of desired outcome. The authors attributed this to the students' low proficiency in English (Glewwe, Kremer & Moulin, 1998, 2009). These and other experiences of limited use or poor outcome has made several scholars to point out that some teacher training or support may be necessary, or at least beneficial to increase the use and potential of storybooks, as research from the United States indicates (McGill-Franzen, Allington, Yokoi, & Brooks, 1999).

In South Africa, a project provided 60 schools with 300 storybooks each. An evaluation of 20 of the schools showed that books were not used much. The researchers attributed this to lack of training (Nassimbeni & Desmond, 2011). In response to this, the teachers received training, which gave some positive effects. However, one quarter of the schools did still not display the books in a classroom collection or library.

These and other studies report on the provision of print materials such as storybooks without any other support or follow-up suggest that providing storybooks alone may not be enough. Even with some kind of training, providing storybooks does not always lead to desired outcomes. In an intervention in rural South Africa that included teacher training, three preschools were given 120 children's books. This intervention improved children's performance on several measures, but the teachers did not use the storybooks as often as they were asked to, and one school hardly used them at all (Pretorius & Machet, 2008).

Other studies also report that supplying schools and teachers with books and training does not always lead to notable improvements. An impact evaluation of an early literacy and numeracy intervention in Kenya and Uganda carried out by the Aga Khan Foundation from 2009 to 2011 showed that there was no indication of improvement of numeracy in any of the countries, and a small increase in literacy levels in Uganda only (Ngware, Abuya, Oketch, Admassu, Mutisya, & Musyoka, 2014). Ngware and colleagues suggest that prior experience with interventions that have not shown results might create lack of expectations with the schools that took part in the study.

In a project in Malawi, where United States Agency for International Development (USAID) collaborated with local researchers, schools were equipped with about 4000 books in English and Chichewa (Sailors et al., 2014). The teachers were coached in instructional methods such as read-alouds, guided reading, word, and comprehension strategy. The researchers concluded that although the coaching model was successful in changing teachers' beliefs, it had less effect on their actual teaching practice. Nevertheless, they argue that the coaching method they used and the local connections were central to the relative success of the project. This and other studies (Hardman, Abd-Kadir, Agg, Migwi, Ndambuku, & Smith, 2009; Piper & Korda, 2010; Pouezevara, Costello, & Banda, 2012) have equipped teachers with textbooks, storybooks, and other materials and used coaching as a way of training the teachers. However, it can be hard to identify and isolate the benefits of certain interventional features, such as coaching, from other aspects of the intervention (Kim, Boyle, Zuilkowski, & Nakamura, 2016).

While these studies point out some shortcomings and challenges, a few studies offer more positive results. The READ Educational Trust in South Africa provided many books and trained teachers in how to use these books in local languages, and the schools were compared for

reading results. The schools with books, especially the high-implementing schools, performed best in reading in the local language and English (Sailors et al., 2010).

Plonski (2009, n.d.) writes about the donations of millions of American books to secondary school libraries in Tanzania through the NGO *Books for Africa*, and found that students increased their level of English fluency when they had access to the donated books. Plonski also raises the issue of relevance of the donated books in terms of content and language, but concludes that for financial reasons and the current role of English, the books are a valuable contribution.

Together, these studies point to different outcomes of initiatives where teachers have been given books and trained in how to use them. This suggests that storybooks and other literacy materials may be an integral part of literacy development, but materials alone are unlikely to be sufficient to engender change, and large interventions may not always meet expectations or planned outcomes. Context matters, as local differences, and perhaps differences between interventions, play a central role in their success, as do other factors. These studies on the benefits of using stories and other print materials have been an important contribution to the field, but they have not adequately addressed the question of *how* teachers use stories in their teaching, and why they sometimes choose not to teach stories even when they are made available. Answers to these questions might help explain why some interventions are more successful than others, and how literacy can be improved.

3.2. Textbooks

Educational materials such as textbooks and readers are considered key to delivering quality education. The World Bank has been a particularly strong voice in advocating textbook provision (World Bank, 2002, 2008), but this emphasis on textbooks has been critiqued for downplaying the importance of teachers (Brock-Utne, 2000). A number of studies have shown the benefits of textbook provision (e.g., Michaelowa, 2001; Frölich, 2005; World Bank 2008), which is typically also cost-effective compared to teacher training and lower class sizes. Other scholars have not found the same effects. Glewwe and colleagues (1998, 2009) found that overall, students who were given textbooks did not benefit. However, the top-performing students seemed to benefit from the textbooks. The authors attribute this to language – most students could not read and comprehend the textbooks they were reading.

These findings points to the interrelatedness of factors such as materials, language, and teachers' practice, since the contribution of textbooks and other materials also depend on what teachers do with them, although this is often lost in quantitative studies, which dominate research on textbook provision.

As noted above, research on the provision of storybooks similarly shows how success is contingent on other factors. However, textbooks, storybooks, and other material support are often part of comprehensive large-scale programs. Such integration of materials into a larger pedagogical frame is sound, but it also means it's hard to point to the contribution of print materials in isolation. Rather than focusing on the numerical effects of materials on educational outcomes, research should see educational materials as part of the classroom and school ecology (Guerrettaz & Johnston, 2013).

Research on the content of textbooks, and to some extent the use of textbooks in the classroom, has a long tradition, although there is limited research from Africa. Aspects of representation such as nationalism, history, and culture are common in the international literature



(e.g., Çayir, 2009; Gulliver, 2011), while research on content in African textbooks is somewhat limited, with one study on intercultural communicative competence (Stranger-Johannessen, 2015) and several on gender (e.g., Barton & Sakwa, 2012; Foulds, 2013; Mustapha, 2014) – one of the most researched topics internationally. There are also some studies on teachers' use of textbooks and students' reception (e.g., Lubben, Campbell, Kasanda, Kapenda, Gaoseb, & Kandjeo-Marenga, 2003; Opoku-Amankwa, 2010).

Textbooks are influential on students' notions of gender, and gender bias in textbooks can influence students subconsciously (Barton & Sakwa, 2012). Gender bias in textbooks appear as overrepresentation of men and by presenting stereotypical roles, as well as silencing women. In a study on a Ugandan secondary school English textbook, Barton and Sakwa (2012) found that men were overrepresented in text (64%) and images (79%), suggesting that the textbook was not very inclusive of gender. Specifically, they conclude:

The current study demonstrates that a commonly used English-language textbook in Uganda is overtly gender biased. This is because it largely maintains a traditional representation of gender roles characterised by women's invisibility and silence, their employment in domestic roles and lower rank occupations, and a negative portrayal of their emotional state. (Barton & Sakwa, 2012, p. 186)

They further state that textbooks have the potential to influence students' in developing countries and that inclusive content could counter prejudices that the students already have. Other scholars are more reserved in their faith in the ability of textbooks to challenge prejudices, and point to the problems associated with reversing traditional gender roles (Foulds, 2013). Providing a non-sexist textbook is also no guarantee that teachers will follow. Rather, they run the risk of exposing the teacher's gender bias (Sunderland, Cowley, Rahim, Leontzakou, & Shattuck, 2000).

According to Foulds (2013), the international aid community, particularly through the MDGs, exert pressure on the national government to develop a curriculum that reflects values of gender equity. However, the often reversal of traditional gender roles do not facilitate a discussion or problematization of gender roles. Based on a reception analysis of a Kenyan textbook, Foulds found that the students see their own lives reflected in the images of the textbooks. The images don't reflect the students' realities, such as using images of a pilot. There is also a mismatch between the text, which shies away from traditionally gendered roles, and the images, which to some extent reflect them. The students see their own lives reflected in the images of the textbooks. Their home chores are gendered, and they interpret the images in that way. Foulds concludes:

The ease of identification indicates that students are able to digest information that relates to their daily life, rather than information that is incongruent with their environment. Such findings suggest that textbooks, and possibly even school curriculum as a whole, cannot initiate an imported ideal of gender equality. Rather, improved women's representation in income-generating activities must first begin in their community with change they can see and identity and should be complemented by the curriculum. (Foulds, 2013, p. 172)

Another study with a reception-oriented approach to textbooks investigated how textbooks were used in a primary school in Ghana (Opoku-Amankwa, 2010). In spite of the government



policy of one textbook per pupil and that pupils should bring books home, the books were only used in some lessons, and usually one textbook per desk seating three children. Because of this not all children could or did read. Teachers also expressed fear that books could be torn, especially if the children got one book each. Opoku-Amankwa concludes that textbooks alone may not necessarily engender the increased learning outcomes often associated with textbooks, and their use is associated with factors such as class size and seating arrangement.

Lubben and colleagues (2003) also investigated the use of textbooks – in secondary schools in Namibia. They found that textbooks were underused and for a restricted range of functions, mostly by the teacher. Proper use of textbooks in ways that are conducive to learning would require helping or training teachers on how to more effectively use them.

3.3. Publishing in African Languages

Publishing in Africa, particularly in African languages, is often portrayed as challenging, as the market for books is small and many languages are small or do not have stable, agreed-upon orthographies. National borders created in colonial times have split languages, sometimes resulting in different orthographies of the same language and separate markets for books (Reiner, 2011). There is considerable variation across the continent, however. Namibia is noted as one of the strongest countries in publishing in African languages, with more than 1000 published titles – one third of the total volume (Reiner, 2011). The Namibian private-sector publishing industry is vibrant and profitable, but is something of an exception.

In the 1960s and 1970s, the period after decolonization, Multinational publishing houses dominated the scene of publishing in Africa. But while the 1970s can be described as a decade of expansion and boom, the 1980s was characterized by economic crises that severely affected the African publishing industry (Zell, 1993).

Opoku-Amankwa (2015) describes the development of the local language publishing industry in Ghana, and notes that mother tongue-based bilingual education (MTBE) relies on materials in local languages in order to be successful. The colonial government in Ghana supported local languages as the language of instruction, while the post-colonial government has vacillated between English only and early-exit MTBE policies. Opoku-Amankwa attributes many of the problems of the weak publishing industry and MTBE programs to this lack of strong and consistent policies, and the lack of support for developing materials and design, despite the recognition of the need for MTBE in most educational reforms. The major reasons for this include political and economic reasons as well as misconceptions. The Bureau of Ghana Languages has been in charge of making local language materials, but has had little independence to do this.

Publishing in Africa is heavily dependent on the school market. Textbooks and supplementary readers are procured by governments and NGOs for distribution to schools, but in African schools textbooks are the main type of books which has shifted focus away from supplementary readers, which are also important for literacy development. The demand for textbooks is sometimes used to cross-subsidize the production of other books (Edwards & Ngwaru, 2010). Publishing in African languages is only financially viable if there is a market for those books, either in the form of government guarantees or incentives, or other ways in which publishers can be confident that there is a market for their books.

A major debate within African publishing is the question of whether to use original work or translate, usually from English (Edwards & Ngwaru, 2011, 2014). Translation is hailed as a



cheap way of producing materials in short time, and allows for standardization across languages, such as the 11 official languages in South Africa. This pragmatic approach was espoused by Neville Alexander, a key figure promoting South African languages, and a cornerstone of the African Storybook (see below). Translation can also be seen as a form of reciprocal sharing with a long and rich history. Developing original materials in African languages, on the other hand, represent a commitment not just to the short-term goal of developing materials, but to building a vibrant language community and literary culture in disadvantaged languages. In the words of a publisher:

We realised that, more often than not, translations don't really reflect the aspirations and the concerns of the very target groups that we try to develop these materials for. So we would rather now go for original texts than translations. (publisher, cited in Edwards & Ngwaru, 2011, p. 592)

African translators face several challenges, and the work they do is often regarded as being of insufficient quality (Edwards & Ngwaru, 2011). Apart from the challenges involved in translation more generally, such as paying attention to both text and illustration in children's books, the issue of language standardization is of particular concern in the African context. Speakers of the same language from different areas might disagree on what the correct spelling or grammar is, and technical terminology might have to be explained in other words or new words have to be coined.

3.4. Key Findings and Recommendations for Research and Practice

Literacy materials, particularly textbooks and storybooks, are important for developing highly literate citizen who are not simply able to decode text, but can read critically for meaning and develop their own thoughts through writing. Extensive reading is key to fluency and interest in reading, both of which greatly facilitate further studies. The following recommendations focus on increasing the amount of reading materials available, but an equally important, but sometimes overlooked aspect, is the need to support teachers in using literacy materials when they are available.

3.4.1. Research how to support teachers in using textbooks and storybooks

As this review of the literature has shown, providing storybooks or textbooks does not always mean that these are read or used in effective ways. Teacher support in using storybooks and textbooks should not be taken for granted, as their use is closely tied to pedagogical practices, which in many cases could be improved (see below). This area requires further research, as the increased provision of books makes this a growing area of importance. A focus on the use of literacy materials in pre-service and in-service teacher education programs is one possible area for research. Training teachers in using textbooks generally, rather than specific textbooks, is probably more challenging. Although there are a number of studies that have investigated teachers' use of textbooks, there is need for a better understanding to know how effective textbook practices can be promoted. Similarly, getting teachers to increase the use storybooks and in ways that are more conducive to learning seems to require some form of support. This is also an under-researched area in need of attention. However, building on existing



practices, such as shared, choral, reading, and retelling stories, are starting points that research should explore further. Scheduling regular story reading might also be a way to increase the amount of reading, but more research is needed to shed light on these possibilities.

3.4.2. Research how textbooks and storybooks can promote gender equality

Worldwide, textbooks have often been biased towards men, such as through overrepresentation and the roles and adjectives used to describe them. The recent literature on African textbooks, however, describes a tendency for textbooks to promote gender equality, which is clearly laudable. In practice this often means that traditional gender roles are reversed, at least for women (men are usually not portrayed in female roles). Such overt messages might confuse students and result in a lack of ability to identify with the characters. The teacher is also a key interpreter and conveyor of textbook content, and if the textbook clearly challenges the teacher's beliefs, the textbook authors' intention of countering gender stereotypes might be in vain. Textbooks, and by extension storybooks, should continue to represent women and girls in equitable ways, gender equality is not limited to representing women in male jobs. A careful representation of girls and boys, men and women, as well as other groups, such as people with disabilities and albinos, should promote equality without defying local norms. Attention to adjectives, settings, historical and contemporary characters, and agency can show independent and powerful women, including those performing traditional roles. Representing boys and men in traditionally female roles should be cautiously explored. More research is required to learn how this can be done, such as through the development or adaption of textbooks and storybooks, and reception studies of these new materials.

3.4.3. Develop storybooks and textbooks, particularly in local languages

There is a great need for more print materials in African classrooms, particularly textbooks and storybooks. Developing and printing more materials is crucial for sustainable literacy efforts and to meet the literacy goals that are still far from being reached. Providing textbooks and storybooks should be seen in a long-term perspective, as there is need for a continuous supply as storybooks get torn and lost and textbooks get outdated. An integral part of the question of literacy materials development is the issue of which language these materials are written in. Planning for materials development should go hand in hand with concerns for language planning.

3.4.4. Support African publishing

The challenges of publishing in Africa, in particular in African languages, are related to other difficulties, notably insufficient public and private funds to purchase books and lack of technical and specialized terminologies in many African languages. Imported and donated books put further pressure on local production, which also affects publishing in African languages, already a small segment. Whenever possible, publishing *for* Africa should take place *in* Africa, as building local publishing industries is important for creating a vibrant industry that can support high quality production of textbooks, storybooks, and other print materials. The extent to which content should be developed originally in African languages as opposed to translated, has no simple answer. This, like many other matters, depends on a number of factors. Translation has many advantages, particularly in early stages of the development of materials in languages with a



newly established written form. However, it is important to also develop the capacity to write original work, which would better reflect local cultures and help to firmly establish underserved languages.

4: ICT and Digital Resources

Key findings and recommendations for research and practice

- Research the development and use of openly licenced books and other resources
- Make digital repositories more accessible
- Support localization efforts and bring language planning online
- Keep a long-term perspective on ICT
- Promote the use of ICT in an intermediary position

ICT has been met with considerable optimism worldwide for its potential in improving education, not least in Africa. In the past, TV and radio transmissions have been used for distance education purposes, while these days the use of ICT usually refers to the use of devices such as computers, tablets, e-readers, and cell phones, and sometimes also an Internet connection. However, ICT is just as much about the content and use, including software, formats, and licences, as it is about the devices that are often associated with new technology.

Despite enthusiasm and optimism, reports on educational programs using digital devices are by and large not very promising. Infrastructure, such as electricity and Internet connectivity, is frequently erratic or altogether absent, and teachers often lack the foundational skills required to learn the specific skills required by any given program. There are also challenges of localization – adaptation to African languages and scripts. Add to this the high cost and fragility of ICT equipment, and it should be clear that ICT is far from being a panacea of quality education. While ICT is being taken up for educational purposes in countries that can readily afford it, in most poorer countries, the introduction of ICT also begs the question of which educational resources should be prioritized and how they should be implemented (Zell, 2013). It is important to keep in mind that it is the teachers' integration of such technology, and the structural framework and conditions they work in, that ultimately determine the benefits and contributions of any technology, not the technology itself.

4.1. Problematizing ICT in Education

A major critique of the use of ICT and technology more generally is the often implicit assumption that the technology itself will lead to change, and that the technical – rather than social aspects – are given more attention, even though the latter ultimately determine its use (Fajebe, Best, & Smyth, 2013). Another concern for the relevance and appropriateness of technology in education has been raised with regards to the constructivist pedagogy that frequently accompanies ICT interventions. These have been critiqued for underlying assumptions and the risk of imposing Western pedagogical traditions on Africa (Hollow, 2010; see Section 5.6).

In Africa, digital technology is often described in terms of the digital divide – the acute discrepancy between the Global North and the Global South in when it comes to access to ICT (Fuchs & Horak, 2008). However, this narrow focus on technology and connectivity has been critiqued for disregarding the fact that

access to ICT is embedded in a complex array of factors encompassing physical, digital, human, and social resources and relationships. Content and language, literacy and



copyright laws, legal licences were developed for the purpose of enabling and promoting sharing, collaboration, and furthering the development of creative – mainly digital – work. The best-known such licences today are the series of Creative Commons licences, which offer creators to use licences with or without some restrictions, such as commercial use. In the field of education, materials with such licences are known as open educational resources (OERs), and span from curricula and textbooks to courses and software.

There are a number of online OER databases. *OER Africa*⁵ caters specifically to African users in higher education, while *Teacher Education in Sub-Saharan Africa* (TESSA)⁶ targets primary and secondary school teachers. Databases of OERs can contain thousands of discrete resources, but without packaging, such as explicit connections to a curriculum, it can be hard to find what is relevant for a particular lesson. The low number of materials written in African languages and reflecting African culture is also a concern, as OERs tend to be written in English (Oates, 2009). This limitation goes against the philosophy of access to information and openness that is part of the OER movement. However, there are some indications that African materials and African languages are increasingly present online, including in the form of OERs.

Digital technology, and open licences in particular, offer new possibilities for publishing. Research on publishing has mostly focused on traditional publishing and supply chains, while not fully recognizing the potential of how digital technology and open licences have changed this field (Butcher, Hoosen, Levey, & Moore, 2016). Digital publishing and other technical innovations have disrupted the conventional value chain and publishing industry.

Most important, though, is the key point that digital disruption in publishing value and supply chains enables a disaggregation of those supply chains, so that each aspect of the early literacy reader ecosystem can function independently of the others, introducing opportunities for working differently and more efficiently. (Butcher et al., 2016, p. 17)

These changes offer great opportunities, but also potential risks to publishing in Africa, particularly in African languages. Both specific program goals and the long-term sustainability of the local publishing capacity should be taken into consideration. If the capacity that is developed through projects are not further supported and developed, this capacity will be lost and will have to be re-created for other projects.

For all the benefits of digital stories, most children still depend on the print format to read them. This means that although digital stories represent a great potential for development, translation, and distribution, printing remains essential to providing access to stories.

4.3. Openly Licenced Multilingual Storybooks

Apart from OER Africa and TESSA, there are several contributors to OERs in Africa, particularly openly licenced children's stories. One of these is Bloom Library, which was developed by SIL International and offers stories in 83 languages from across the world. Unlike other online-oriented services, Bloom is based on an application that must be downloaded (Windows only) and run to create books. It also serves as a library for reading downloaded

⁵ <http://oerafrica.org>

⁶ <http://www.tessafrica.net>



books. Bloom Library enables the creation of multilingual books and offers support for the creation of leveled readers.

In South Africa there are several organizations that publish and promote openly licenced children's books, including Fundza⁷, Nal'ibali⁸, and Book Dash⁹. Fundza is oriented towards mobile phone users, and offers fiction and non-fiction for teenagers. Nal'ibali is a reading-for-enjoyment campaign with stories in all 11 official South African languages, as well as audio recordings in 10 languages. Book Dash offers children's stories in English, and translations of some of their stories from other initiatives.

The biggest of these, and the only one that caters to all of Africa, is the African Storybook (ASb)¹⁰ (except Bloom Library, which is international, and three quarters of their African stories come from the ASb). The ASb is one of the major contributors to OERs in Africa, with more than 700 different story titles, and stories in more than 100 languages. The ASb was launched in 2013 by the South African organization Saide to provide Creative Commons-licenced children's stories in African languages, which have been in low supply, in part because the market for these stories is small and the number of languages is very large (Welch & Glennie, 2016). An important feature of the ASb is that users are invited to write and translate stories, which is how the list of stories and languages grows.

In order to bring the stories out to schools and get feedback from teachers and other practitioners on the website and use of the stories, the ASb established 14 pilot sites in South Africa, Lesotho, Kenya, and Uganda (African Storybook, n.d.). These pilot sites include primary schools, libraries, early childhood development centres, and a primary teachers' college, which were given the required electronic equipment to access and teach the stories, such as a laptop, a battery-driven projector. Since the start of the pilot site projects in 2014, ASb has expanded to Ethiopia, Ghana, Zambia, and Rwanda, where it has commissioned translations and followed up with story development work and use of stories together with local partners. Reports on the use of stories are promising:

Active engagement with the stories is mentioned in all reports, as is children's excitement with having the stories digitally available. An unexpected outcome of pilot site engagement was an increase in planning and collaboration among the African Storybook educators at a particular site. (Welch & Glennie, 2016, p. 5)

Research on the African Storybook in Uganda shows that the use of the stories increased the amount of reading that took place and expanded the repertoire of teaching methods and topics. Teachers' use of stories was influenced, and sometimes circumscribed, by their social capital, financial capital, and policies (Stranger-Johannessen, 2017). The teachers' enhanced social and cultural capital was also reflected in shifting identity positions as they engaged with the ASb. Through the teaching of the ASb stories, the teachers began to imagine themselves as writers, readers, and teachers of stories, reframing what it means to be a reading teacher (Stranger-Johannessen & Norton, 2017). Stranger-Johannessen (2017) concludes that this exploration of teachers' resourcefulness, needs, and realities provides a foundation for enhancing existing practices by building on how teachers use stories.

⁷ <https://live.fundza.mobi>

⁸ <http://nalibali.org>

⁹ <http://bookdash.org>

¹⁰ <http://www.africanstorybook.org>



The Global Book Alliance¹¹ (formerly Global Book Fund) is an initiative that attempts to bring these and other initiatives together by strengthening the development, procurement, distribution, and use of books in developing countries. Results for Development (2016) produced a feasibility study to prepare for this initiative, which is still under development. A new website¹² appears to be under preparation to offer openly licenced books, but at the time of writing it is still under development.

Butcher and colleagues (2016) welcome the sharing of text and pictures – the assets that are needed to re-create or publish the stories, or import them into other platforms. This is currently possible with courses between learning management systems that use common data standards and data-sharing protocols, but not any of the above-mentioned story platforms. Butcher and colleagues (2016) further recommend that organizations share documentation and materials, such as training manuals for authors and illustrators, as the ASb has done in one case (see African Storybook, 2015).

4.4. Localization of Digital Resources

NGOs, commercial publishers, and government programs have published and printed thousands of children’s stories for African schools over the years, and some of these are available for purchase online through African Books Collective¹³ and other websites. But many of these titles are not available at all, and even fewer are available online. This situation means that when a project ends, often after a two- to five-year funding cycle, the stories developed through the project become hard to obtain, if not entirely unavailable. Subsequent initiatives involving the same languages will have to spend large amounts of time and money on recreating similar materials.

Closely related to issues of language is what Osborn (2010) calls *localization ecology*, which stands in the tradition of language ecology (van Lier, 2004, 2010). The notion of localization ecology refers to the need to make software and content appropriate and relevant to a given location. This includes broader efforts to create a system where software, content, and technology serve a community. Language is an integral part of this, including standardization processes and the development of terminologies and dictionaries, but also text/encoding features, such as Unicode, fonts, and keyboard input methods.

Several African languages use non-Latin or extended Latin scripts, which can pose a challenge when typing on a computer. But Unicode encoding is now widely supported and several free fonts are available. Most recently, Google’s Noto font¹⁴ covers a large number of languages, while SIL International’s¹⁵ Andika font (extended Latin script) and Abyssinica (Ethiopic script) and keyboard input software cover many African languages. On the content side, development of relevant web and software content and interfaces should be part of localization efforts. Osborn (2010, pp. 22–23) lists five factors that are key to localization:

- Political: policies, decision-making processes and the interplay of interests leading to those, the legal and licensing environment;

¹¹ <http://globalbookalliance.org>

¹² <http://digitallibrary.io>

¹³ <http://www.africanbookscollective.com>

¹⁴ <https://www.google.com/get/noto>

¹⁵ http://scripts.sil.org/cms/scripts/page.php?site_id=nrsi&id=fontdownloads



- Linguistic: the linguistic situation in the country or region and aspects of each language, the number of languages spoken, their distribution and body of speakers, whether there is a standardised orthography for each language, and whether the languages are characterised by diverse dialects;
- Economic: standards of living, resources available for various kinds of business, public, social and philanthropic investment, individual and family income levels;
- Technological: electricity and communications infrastructures, availability of computers (and types and kinds of operating systems), internet connectivity, and the ways in which these factors differ across the territory of a country;
- Educational: systems of education (whether formal or informal), school infrastructure;
- Sociocultural: demographics, social structure, ethnic groups, culture(s), popular and individual attitudes.

4.5. ICT for Teaching and Learning

In spite of these concerns for supporting African languages and localizing technology, there is little research supporting the effects of information and communication technologies in education on the continent (Piper, Jepkemei, Kwayumba, & Kibukho, 2015). Hollow (2010) raises the question of how appropriate monitoring and evaluation methods of ICT interventions have been. Despite these cautions, the potential of ICT for education is widely embraced by African policy makers (Piper et al., 2015), and a number of NGOs are carrying out programs that focus on the use of digital devices in schools in particular, and the educational system more generally. Even though research on e-readers and other devices has found some benefits to literacy (e.g., Jere-Folotiya et al., 2014; Piper et al., 2015), some question the legitimacy of such claims (JBS International, 2014a; Wagner, Castillo, Murphy, Crofton, & Zahra, 2014).

Among the best-known providers of digital devices and content in Education in Africa is World Reader,¹⁶ an NGO that provides e-readers e-books to developing countries, was funded by the former head of Amazon's Kindle division (Zell, 2013). But e-readers are fragile and easily break, although they are much cheaper than computers and have a long battery life. Cell phones have the advantage of being widely used already, although more often by adults than young children.

The One Laptop Per Child (OLPC) program, which is present in 11 African countries (One Laptop Per Child, n.d.), is arguably the best-known educational intervention providing computers in the hands of children. Unlike most e-readers and cell phones, OLPC computers are robust, and designed to work in adverse conditions of strong sunlight and limited electricity supply, and wireless network allows computers in proximity to one another to form a network (Zell, 2013). However, in Rwanda and more generally OLPC has been critiqued for being used by teachers rather than pupils (Fajebe et al., 2013; Warschauer, 2003), and the cost is still prohibitive for most users.

Another device that offers access to large amounts of information is the eGranary,¹⁷ a searchable hard drive database nicknamed "Internet in a box". The eGranary can provide a

¹⁶ <https://www.worldreader.org>

¹⁷ <http://www.widernet.org/egranary>



computer or a network of computers with large amounts of information otherwise only available on the Internet.

Research on the use of ICT is still limited, but rapidly growing. Piper and colleagues (2015) compared the use of tablets for teachers, tablets for instructional supervisors, and e-readers for students, with the paper-based treatment group and the control group. The use of tablets and e-readers was comparable to the print-based intervention, but not as cost-effective, particularly for teachers and students. Piper and colleagues recommend the use of tablets at the higher levels – in this case for instructional supervisors, since this is more cost-effective and easier to manage from a training and implementation perspective.

Piper and colleagues (2015) report on a comparison between two interventions found that learning outcomes were not significantly higher in the study that included ICT. They suggest that digital devices might be more appropriate for teachers and teacher educators, not least since these devices are expensive. Hollow (2010) poses the question of whether ICT efforts should be directed towards secondary and tertiary education for similar reasons: there are fewer and more advanced students, and the pedagogical benefits might be higher.

Kendrick, Chemjor, & Early (2012; see also Kendrick, Early, & Chemjor, 2013) discuss how ICT resources are “taken up” by secondary girls in an after-school journalism club in Kenya. In this study, 32 teenage girls were equipped with a digital audio recorder and camera, and an Internet connection was provided to the school’s computer lab. The findings suggested that the technology imparted status and facilitated shifts in power relations, but there were also challenges, including misuse of technology, such as the access that Internet connectivity gave to exams available online. Since these activities took place after school, it is not clear whether this initiative would have been possible within the formalized structures of the traditional classroom.

Studies on the eGranary in Uganda have similarly found benefits to secondary school students from the use of technology. Norton and colleagues (Norton, Early, & Tembe, 2010; Norton, Jones, & Ahimbisibwe, 2011; Norton & Williams, 2012) studied the use of an eGranary in a rural Ugandan community library, pseudonymously called Kyato Community Library. These studies have shown how access to an eGranary gave students access to knowledge previously controlled by teachers, provided valued computer skills, and enhanced student expectations for the future. But like the study by Kendrick and colleagues, the students used the devices outside the classroom, and were thus not constrained by large class sizes or the need to adhere to the curriculum.

In another study from Uganda, Oates (2012) studied how primary teachers in Gulu, Uganda, used ICT for planning and carrying out lessons, in English and the local language. Oates reported that the teachers appreciated the use of technology and used it in planning and carrying out lessons and formed peer networks to help each other. There were a number of challenges, however, including excessive focus on the equipment at the expense of developing human resources, and problems with the equipment and Internet access. This sometimes lead to limited learning since was time was not spent efficiently.

4.6. Key Findings and Recommendations for Research and Practice

ICT is an area in rapid development, and it has received great interest among governments and NGOs. Although considerable efforts are taking place to introduce ICT in various forms through interventions and research, there are few definite key findings regarding ICT. New developments continue to bring the cost of devices down and teachers and others are increasingly



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accustomed to cell phones, including smart phones, both of which are likely to tip the scales in favour of ICT in the near future. Using ICT to improve education goes far beyond putting tablets instead of booklets in the hands of children, however.

The African Storybook and other sources of openly licenced children's stories are important initiatives in their own right, but also as promoters of open licences and sharing of content. Currently very few of the thousands of books, stories, manuals, and other materials that are developed every year are made available for sharing online. The novelty of this phenomenon means that the uptake and use of these stories is still an area there is little knowledge about. The following presents some key findings and recommendations for research and practice based on the review of the literature.

4.6.1. Research the development and use of openly licenced books and other resources

OERs hold a great potential for education in Africa, even if this potential is not fully realized. Packaging OERs – presenting them in a format and context that is useful for users, is a challenge with OERs in general. Just like giving a teacher access to all the resources on the Internet can be overwhelming, giving teachers access to a database of OERs does not mean they know how to use it or make the resources fit with the curriculum. Children's stories are more straight-forward in this respect, as they are usually not tied to a curricular content. Although openly licenced children's stories are increasingly available online, there is little knowledge about how these stories can best be made accessible to students. Digital display of stories, which the African Storybook has used, is one possibility. Printing is another option, but how this can be organized and implemented should be investigated through research. It is important to keep in mind that this is not just a question of cost or impact on learning, but also the long-term viability and interest and capacity of the teachers and other stakeholders, which research should take into consideration. Teachers' use of OERs, whether in digital or print form, should be explored through research, such as action research where teachers and researchers work together to learn how OERs can best be used in the particular context teachers are working in.

4.6.2. Make digital repositories more accessible

There is a large amount of grey literature, particularly from development programs, that are rarely shared, even though many of these manuals, textbooks, and other materials are likely to be of use for others. Similarly, while nicely formatted stories online or in PDFs are very useful for end users, they do not facilitate sharing across platforms or publishing, which would benefit more from access to images and text, particularly through open application programming interfaces (APIs). More open standards and attention to facilitating sharing is needed to make OERs as available and useful as possible.

4.6.3. Support localization efforts and bring language planning online

Support for a wide range of scripts and fonts is rapidly growing, which greatly benefits the many African languages that use extended Latin or non-Latin script. This is only a small part of localization, however, and Africa, and African languages in particular, are underrepresented in the online world and in software and other ICT contexts. Efforts to use ICT in educational projects should consider not just the implementation of language-related matters such as scripts



and fonts, but also how ICT play a part in contributing to global knowledge by sharing African knowledge and perspectives. Developing African languages online is an increasingly important part of language planning, and should be considered every time materials are developed in African languages. Although Internet access is mostly available to adult urban and affluent users, who are less often targets of educational initiatives, these users can play an important part in language planning, and having online resources are important in a long-term perspective.

4.6.4. Keep a long-term perspective on ICT

Long-term sustainability of programs is always challenging, but more so with ICT. Successful use of ICT is highly dependent on a number of factors, such as ICT skills, electricity, and access to functional devices. Ensuring that these factors are in place during the implementation of a program might be challenging, but is still relatively manageable. After the end of a program it is much more likely that one of these key pillars will fail, leading to the collapse of the support that ICT initially provided. The use of ICT should therefore include a long-term perspective. Building strong capacity of teachers and other implementers can help offset problems, but only to a certain extent. Using ICT for creative, collaborative purposes, rather than just an extension of conventional teaching methods, is likely to make ICT more meaningful and valued. Although this is challenging to implement, it should be considered a long-term goal.

4.6.5. Promote the use of ICT in an intermediary position

Whether, and more importantly *how* teaching and learning of literacy can be supported through the use of ICT, remains a key question in a time when educational quality is at the centre of the research and policy agenda for Africa. Given the high costs, specialized skills, fragility, and other challenges associated with ICT, it is important to consider how education can benefit from ICT in ways other than giving each child a laptop or tablet, which is a common view of what ICT for education means. But ICT's biggest potential for contributing to literacy and education in Africa lies in its ability to connect, share, and create. Digital files are almost always precursors to printed materials these days, and the Internet makes their creation and sharing much easier, such as through new ways of publishing, online databases, websites, and applications, such as African Storybook and Bloom Library. Using text messages for teacher training, or for sharing content, are other possibilities that have been used and should be explored further.

5: Teaching and Teacher Education

Key findings and recommendations for research and practice

- Research how to improve early literacy instruction, particularly in the mother tongue, in teacher education programs
- Research how literacy initiatives can take existing teaching practices into consideration
- Provide more support for newly qualified teachers
- Increase teachers' salaries to support teacher recruitment, performance, and retention
- Review teacher placement practices
- Evaluate the use of scripted lessons in light of alternative methods

The rapid increase in primary school enrolment has had ripple effects for enrolments in secondary school and higher learning institutions, but also teacher education. This growth in enrolment may lead to larger class sizes in the short term, and increasing enrolment and population growth places great demands on teacher education institutions to train more teachers. Much like the discussion on primary education, which has shifted from a focus on enrolment, or quantity, to the quality of the education students receive, the teacher education literature is primarily concerned with the quality of teacher education, including reforms of the teacher education system. Although there is still a need to expand teacher education, the state of teacher education is such that attention to quality is a key issue, since achieving high quality primary and secondary education presupposes well-qualified teachers who are able to meet the needs for the literacy and other skills required in the 21st century.

In this way teacher education is a key part of the solution for achieving educational demands, but by the same token it is also part of the problem, since literacy rates, retention, and other measures of students' performance remain low, as early grade reading assessment (EGRA) reports show (Piper, 2010a, 2010b). Studies on teacher education suggest that focusing on improving teacher education is crucial, as it has many shortcomings in need of revision.

What evidence there is suggests that there is widespread dissatisfaction with the efficacy of training, and that teaching methods in schools are slow to change in ways that reflect aspirations for improved pedagogy which training is intended to promote. (Lewin & Stuart, 2003, p. 692)

5.1. Pre-Service Education and Training

Teacher education in Africa is usually divided into two categories – pre-service and in-service education. The length of pre-service teacher training (PRESET) varies, some as low as 12 weeks, but usually lasts two to four years, resulting in either a diploma or a degree. Teacher training may begin after lower or upper secondary, and it is often seen as a less desirable option for people who are not admitted to other programs (Mulkeen, 2010).

The training at teacher training colleges is meant to prepare teachers for working independently at schools after their graduation, while during their training the student teachers get some of their training at placement schools. However, the learning at the teacher training colleges is often quite theoretical and not well connected to the actual classroom practices



student teachers will face, making it hard for them to apply their learning at the placement schools. The colleges and placements schools do also not always work well together to create the best learning experience for the prospective teachers (Hardman, Abd-Kadir, & Tibuhinda, 2012).

Teaching at the colleges is described as institution-focused and lecture-based, while the lecturers normally lack experience and expertise in primary education. There is little supervised practical teaching, which creates a disconnect between theory and practice (Bunyi, Wangia, Magoma, Limboro, & Akyeampong, 2011).

5.2. In-Service Education and Training

In-service teacher training (INSET) is offered to working teachers, either at the schools where they are working, online, or at another institution. Several governments and NGOs have developed programs for INSET, such as EGRA-Plus in Liberia (Davidson & Hobbs, 2013) and the Health and Literacy Intervention (HALI) project in Kenya (Dubeck, Jukes, Brooker, Drake, & Inyega, 2015). Such programs may be seen as a way of complementing PRESET, but are also valuable in cases of changes in curriculum, instructional materials, and pedagogy.

According to Hardman, Ackers, Abrishamian, and O’Sullivan (2011), however, in-service education and training is of poor quality and the content does not readily transfer to the classroom. It is often ad hoc with little follow-up, and mainly in urban areas. INSET is sometimes conceptualized as upgrading of formal skills through academic qualifications, rather than pedagogical skills that will be useful for everyday teaching. This focus on upgrading has roots in the history of underqualified teachers, who have been a large part of the teaching force in several countries.

5.3. Newly Qualified Teachers

Of particular importance is the group of newly qualified teachers (NQTs), who can be seen as in a transition phase from student teachers to full members of the teaching profession. Some countries, like Ghana and Ethiopia, have an induction system in place that is supposed to support NQTs in their first two years, but in practice they rarely get systematic support or continuing professional development programmes (Lewin & Stuart, 2003). Initial teacher education is at the core of the challenges of providing quality education and retention (Akyeampong, Lussier, Pryor, & Westbrook, 2013).

A study on NQTs in six African countries, including Ghana, Kenya, and Tanzania, found that NQTs see teacher training as the main source of their understanding, but is not adequately preparing them. The pre-service teachers teach their own pupils the way they are taught, through whole class lectures, but fail to provide quality education with a focus on meaning and understanding. The study found that the teaching of reading and mathematics focused on subject content, and not the pedagogy of how to teach those subjects.

Akyeampong and colleagues (2013) also expressed concern that the teacher preparation gives the teacher candidates a false confidence, since they are led to think that they master the “correct” way of teaching. However, many school students go through school without actually reading, but by moving their lips or hiding behind other students, and copying text down from the blackboard without understanding the meaning of what is written.



What is especially disturbing about this false confidence is that by focusing teachers' attention on the success of their delivery of teaching procedures, it directs them away from seeing the lessons from the perspective of pupils, their common misconceptions, and on how they might improve their learning. (Akyeampong et al., 2013, p. 277)

Akyeampong and colleagues (2013) also draw attention to using the students' mother tongue as the language of instruction, which is the case in many African countries. The teachers are not prepared for this, they argue. The shortage of literacy materials such as short stories and rhymes contributes to shifting the focus from whole sentences and stories to individual words. However, even when materials were present, they were often limited to being read aloud in chorus.

5.4. Teacher Supply and Deployment

Teaching in sub-Saharan Africa is a challenging profession, and because the attractiveness of teaching as a career is in long-term decline, this affects retention and recruitment (Bhalalusesa, Westbrook, & Lussier, 2011). Low salaries, over-crowded schools, lack of housing for teachers, and deployment in remote rural areas contribute to these problems. The HIV/AIDS pandemic has adversely affected teachers in many countries (Wane, 2009). Teaching, especially in primary school, is often seen as a stepping stone to a better job (Bhalalusesa et al., 2011).

Educating a sufficient number of teachers to meet the demands of increased enrolments and growing population is a significant challenge, requiring policies and planning while placing high demands on training institutions. The desire to reduce class sizes adds to this pressure, while teacher attrition, particularly in secondary schools, may also pose a problem (Mulkeen, 2010). Shortage of teachers varies across subjects, and is particularly low in some, such as science and mathematics. It can be tempting to lower the entry requirements to teacher training programs, but this might come at the cost of less qualified teachers in the long run. Low graduation rates from secondary schools further limits the pool of people eligible for recruitment to teacher training (Kirk & Dembélé, 2013).

Filling vacant positions, particularly in remote rural schools, is often a challenge, and higher educated, better qualified teachers tend to prefer schools in urban areas, further exacerbating the state of education in rural areas (Mulkeen, 2010). Some governments attempt to address this by central deployment of teachers, but this is often not successful, as some teachers don't take up the post or stay only for a short time. Central deployment of teachers also means placing teachers in parts of the country where they don't speak the language, which makes implementing mother tongue instruction policies, now common in the lower grades, particularly challenging. Additional financial incentives are sometimes offered, but tend to be less successful unless they are substantial and well targeted (Mulkeen, 2010).

The conditions of rural teachers often differ, but this has not been adequately recognized in the literature. Rural schools are often in a particularly poor condition, making them less appealing to teachers to work in. Lack of housing for teachers is also a frequently reported problem. In Ghana, a rural posting is seen as limiting a woman's choice of prospective marriage partners (Buckler, 2011). In a predominantly rural region of Ghana, only 56 per cent of NQTs reported for work (Hedges, 2000). Akyeampong and Lewin (2002) found that 80 per cent of NQTs in Ghana preferred to work in urban areas.

Lack of consideration for rural teachers and their needs has been masked in statistical data, which should take into account the differences between urban and rural settings (Buckler, 2011).



In a study of five teachers from five countries that was part of the TESSA Teachers' Lives Project, Buckler (2011) argues for the importance of context for making teacher education policies meaningful. By focusing on two female teachers who received in-service teacher training, the article gives voice to teachers who are otherwise often not heard. Although they are eager to learn more and upgrade their qualifications, they are not convinced that the child-centred pedagogies are suitable for large, resource-poor classrooms like theirs. One of the teachers is clearly knowledgeable about different teaching methods, but in practice, rote learning dominates her teaching due to space and time constraints as well as lack of confidence. "Well-thought out, pedagogically innovative lesson plans are often abandoned in favour of what is or what is perceived to be possible" (Buckler, p. 248).

A report on teacher supply and demand (BDS Center for Development Research, 2016) from Ethiopia makes several suggestions as to how teacher education could improve in Ethiopia. To address the low teacher morale and job satisfaction, the report suggests higher salaries and a social marketing program to improve the positive profile of teachers along with a program of professionalization. It further discusses pay increases (which were introduced in 2017), and recommends this as a way of boosting teachers' societal standing and personal satisfaction, but also proposes that these be tied to performance, based on the assumption that it will lead to higher quality and not overcompensate weak performers. The report does not address the potential issues of variable student performance and teachers' conditions across the rural–urban divide in this regard.

5.5. The Quality of Teaching and Learning

The shift towards quality education associated with the MDGs and SDGs has meant moving away from emphasising student enrolment and retention. For teachers, this shift has entailed a change in focus from increasing the number of teachers in training, to the quality of the training they receive, both pre-service and in-service teacher training (Bhalalusesa et al., 2011). Teachers are widely seen as the key to improved education – the quality of an educational system is only as good as the quality of its teachers – and their education. There is a strong realization that teacher education is of paramount importance for developing and not least sustaining quality education. If teachers are highly qualified and capable at the start of their career, there will be much less demand for the plethora of teacher development and other programs that are currently found across the educational system in Africa.

The quality of teachers' teaching correlates with pupils' learning – perhaps a self-evident observation, but nevertheless an important one (Kyeyune et al., 2011). A series of three reports on primary teacher training from East Africa are not uplifting, making it evident that there is a need for paying greater attention to teacher training. In the report on Uganda, Kyeyune and colleagues (2011) identified a gap between the initial teacher education curriculum and the primary school curriculum (see also Akyeampong et al., 2013). "While the college curriculum focuses on content topics and teaching objectives, the Thematic [primary] Curriculum focuses on learning achievement, spelling out not objectives but learning competencies. The former therefore is subject-centred while the latter is learner-centred" (Kyeyune et al., 2011, p. 21). Kyeyune and colleagues also identified shortcomings in tutors' knowledge of reading, and found that that tutors' tended to focus on methods of delivery, rather than content. For newly qualified teachers, which the report also investigated, this translates into some knowledge about content, in the case of reading instruction this is often centred around technical decoding skills. These skills



are not combined with fluency and comprehension to develop meaningful reading. The authors of the report attribute this to the insufficient attention paid to reading content in their primary teachers' college training. Bunyi and colleagues' report from Kenya echo this finding, point out that the newly qualified teachers had more problems with higher-level skills, such as understanding the meaning of text.

The third report in this series is from Kenya, and offers similar findings to the Ugandan and Tanzanian reports (Bhalalusesa et al., 2011). The authors found that both tutors' and newly qualified teachers' understanding of reading was limited, and their teaching focused on drills and syllables, with little attention to whole, meaningful texts. They embraced child-centred learning and participatory methods, but hardly used these in practice. Another report on teacher training in six African countries paints a similar picture. Akyeampong and colleagues (2013) found that new teachers see teacher training as the main source of their understanding, but it is not adequately preparing them. The pre-service teachers teach their own pupils the way they were taught – through whole class lectures, but fail to provide a meaningful education with a focus on understanding. They also point out the structural problem of the emphasis placed in paper qualifications, rather than actual performance standards. Furthermore, many teacher candidates lack confidence in teaching in their mother tongue, and the lack of materials (in any language) makes teaching words in context difficult. All four reports suggest the need to for teacher tutors to teach subject-specific methods, and not just content or general teacher conduct. This leads to a focus on routine procedures and false confidence among new teachers:

What is especially disturbing about this false confidence is that by focusing teachers' attention on the success of their delivery of teaching procedures, it directs them away from seeing the lessons from the perspective of pupils, their common misconceptions, and on how they might improve their learning. (Akyeampong et al., 2013, p. 277)

Akyeampong and colleagues conclude with a sobering critique of the underlying structure of teacher training as part of the problem:

expecting trainees to become autonomous, decision-making individuals not only within a more collectivist culture but moreover when positioned as school pupils themselves, as they so visibly were, repeating their secondary education, living in hostels, wearing uniforms and attending assemblies, is not a realistic proposition. (Akyeampong et al., 2013, p. 280)

Kyeyune and colleagues express similar sentiments regarding the need to teachers to be independent and critical in their job: “good practice cannot just depend on the unreflected [*sic*] application of techniques” (Kyeyune et al., 2011, p. 8).

Although there have been numerous initiatives to address both pre-service and in-service teaching training in the African context, later publications reiterate the assessment of teacher education as a system in need of considerable changes, particularly with regards to pedagogy, but also structural changes (Burns & Lawrie, 2015, Hardman et al., 2012, Hardman et al., 2015, Vavrus, Thomas, & Bartlett, 2011). Teacher training in developing countries based on former colonial models persist (Lewin & Stuart, 2003). There is more focus on infrastructure and supply of teachers than how teacher training and continuous professional development (CPD) can improve learning in real classroom settings (Moon, 2007).



Hardman and colleagues (2011) stress the need to place pedagogy at the centre stage, which also has implications for how teachers are trained. They further warn against pressure from international agencies to insist on “best practices” that do not take into account local conditions and the realities that teachers are facing, including the capacity and motivation teachers have to implement new reforms. Hardman and colleagues (2012) elaborate on this line of thinking, arguing that teachers should be helped to develop classroom practices that are relevant to the lives and linguistic landscape of the communities they are working in.

In terms of pedagogy, Hardman and colleagues (2012) suggest that teachers should “transform classroom talk into a purposeful and productive dialogue” (p. 827) within a context of what is meaningful and feasible to develop higher quality teaching and learning. This includes recognizing the limitations brought about by large class sizes, lack of materials, and tradition of teacher-led, blackboard-based teaching. Tutors can help student teachers by acknowledging this reality and develop a more dialogic pedagogy that builds on the whole class teaching that is currently prevalent. Vavrus (2009) suggests “contingent constructivism” as an approach to introduce pedagogy based on constructivist principles without submitting to the notion of a single model of how teaching should take place.

Teaching in Africa is often critiqued for its teacher-centred rote learning and fact-based recitation (e.g., Buckler, 2011; Hardman et al., 2009; O’Sullivan, 2006). The prevalence of large class sizes, lack of materials, workload, and the nature of the exams contribute to maintaining these practices.

There are many programs that include elements of teacher professional development as an integral part in a bid to change teachers’ practice. Large interventions often use scripted lessons (e.g., Davidson and Hobbs, 2013; Piper & Korda, 2010; Piper & Zuilkowski, 2015; Piper, Zuilkowski, & Mugenda, 2014; Pouezevara et al., 2012), which require teachers to learn how to follow the many steps that make up a lesson. Other programs have other ideas for how teachers should change, often in the form of learner-centred methods (e.g., Sailors et al., 2014).

The notion of learner-centred education is prevalent, according to Chisholm and Leyendecker, to the point of being “one of the most pervasive educational ideas in contemporary sub-Saharan Africa and elsewhere” (Chisholm & Leyendecker, 2008, p. 197). Learner-centred education is sometimes seen as intrinsically good (Barrett et al., 2007; Vavrus, Thomas, & Bartlett, 2011), but increasingly questioned and problematized for not being appropriate or feasible in Africa (e.g., Chisholm & Leyendecker, 2008; Guthrie, 2011; Mtika & Gates, 2010; Schweisfurth, 2011).

At the same time, the term is not always clearly defined. Child-centered learning is on the one hand seen in broad terms as concern and care for the individual student. On the other hand, it’s a more technical approach emphasising appropriate tasks that promote an active construction of meaning (Dembélé & Lefoka, 2007). Benson (2012) writes that the notion of learner-centred language learning entails a shift away from grammar and vocabulary acquisition and towards “acquisition of language skills, participation in communicative processes and the construction of language knowledge” (Benson, 2012, p. 31). Guthrie, a strong opponent of the haphazard introduction of Western-style pedagogy in non-Western countries, offers a warning about what good intentions that lack proper insight can do:

The schools of lesser-developed countries are littered with the remnants of attempts to change the quality of teaching. Well-meant but inappropriate reforms of syllabuses, teacher training, teaching styles, inspection systems, and examinations have been marked by considerable failure. (Guthrie, 1990, p. 219).



5.6. Interventions and Pedagogy

There are a large number of educational initiatives in Africa, ranging from one-person-run support programs to multi-million-dollar interventions involving hundreds of schools. This range is reflected in the scholarly literature, which spans from small research-driven interventions to multi-year evaluations of large-scale interventions. While the former may be limited in scope, such as a set of workshops for teachers or the provision of storybooks, large-scale interventions typically focus on several aspects at a time, such as student learning, materials, teacher development, and school leadership. That is not to say, however, that most interventions focus on all the same aspects. Dembélé (2005) reviewed 17 initiatives across Africa, and found that only six of them had an explicit focus on student learning, which is the linchpin of quality education (Schubert, 2005).

One commonality of many large interventions is the use of a specific teaching methodology – and hence teacher training into this way of teaching. Some large development agencies have made their teaching programs, complete with teaching methodologies, assessment procedures, and materials. The Aga Khan Foundation has developed Reading to Learn (RtL), which has been used in East Africa (Abuya, Oketch, Ngware, Mutisya, & Musyoka, 2015; Lucas et al., 2014; Ngware et al., 2014). RTI International is perhaps the largest NGO in the field of literacy education in Africa, primarily funded by USAID. Operating in a number of African countries, RTI International offers a comprehensive program of teacher training, materials, and other services. The specific nature of these appear to be tailored to each country or region, but their Early Grade Reading Assessment (EGRA) Toolkit¹⁸ is used to assess programs across the continent, which is also used by the Aga Khan Foundation and other NGOs.

Although RTI International does not employ a specific teaching methodology, the commonalities between their programs suggest that they do have much in common. Commonalities include large impact evaluations with intervention and control groups, assessment-oriented interventions, training teachers to use scripted lessons and tailor-made materials (Davidson and Hobbs, 2013; Piper & Korda, 2010; Piper & Zuilkowski, 2015; Piper et al., 2014; Pouezevara et al., 2012).

In order to train teachers on the teaching methodology of a specific program, implementing organizations often resort to teacher development. This includes workshops, supervision, and monitoring. Coaching teachers is another popular way of imparting new ways of teaching, where a coach works with one or more teachers to improve their teaching. Although research on coaching is relatively recent, studies from the United States suggest that this approach is promising (Sailors & Shanklin, 2010; Teemant, Wink, & Tyra, 2011). In recent years coaching has been introduced in educational programs in Africa with some positive and some mixed outcomes.

Piper and colleagues (2014) found that in-classroom teacher support in the form of coaches is important for program implementation and literacy development. Akyeampong, Pryor, and Ampiah (2006) also suggest the use of coaches, since, in their experience, this would allow teachers to explore and discuss real-life examples in context, not just in workshops. Sailors and colleagues (Sailors et al., 2014; Sailors & Price 2015; Sailors and Flores, 2014) are positive to the potential of coaching, but also cautious, as the researchers found that the teachers changed their beliefs rather than their practices. Coaching is furthermore seen as a cost-effective form of

¹⁸ globalreadingnetwork.net/resources/early-grade-reading-assessment-egra-toolkit-second-edition



teacher training (Sailors and Flores, 2014), but there is little research on the teacher–coach ratio, which is central to the question of the cost of coaching. Piper and Zuilkowski (2015) suggest that the ratio should not be higher than 10:1, and possibly lower, although that would drive the cost up. JBS International (2014b) outlines conditions that support effective coaching, such as the involvement of principals and clear strategies and approaches in the literacy program.

5.7. Teacher Education and 21st Century Skills

The notion of 21st century skills is an attempt to capture the need for students to be prepared for the opportunities and challenges in the 21st century. These include cognitive, social, and applied skills, including problem solving, critical thinking, active learning, entrepreneurship, independent thinking, media literacy and ICT skills. The Partnership for 21st Century Learning (www.p21.org) was established by the business community, education leaders, and policymakers, and is a key reference for 21st century skills (see Appendix A).

The Partnership for 21st Century Learning also lists skills such as *creativity, communication, collaboration, flexibility* and *adaptability*. These are certainly important, but more general in nature, and not necessarily higher order thinking skills. *Information literacy, media literacy, and ICT literacy* can be seen as part of ICT. These terms were hardly present in the reports, but might be assumed to fall under efforts to improve ICT education generally. Table 1 provides an overview of the use of certain key terms in some of the revised documents covering several countries or teacher education in general.

Table 1. Key terms in general and multi-national documents on teacher education

Search terms	Akyeam-pong et al., 2013	Burns, M., & Lawrie, 2015	Hardman et al., 2015	Lewin & Stuart, 2003	Moon, 2007	Mulkeen, 2010	Total
21 st century skills*	0	0	0	0	0	0	0
critical thinking*	0	3	0	0	0	0	3
problem solving*	6	3	0	1	0	0	10
independent thinking*	0	0	0	0	0	0	0
active learning*	1	4	1	0	1	0	7
ICT	0	43	0	0	4	0	47
learner-centred*	4	9	1	3	0	2	19

* And related terms

5.8. Key Findings and Recommendations for Research and Practice

The findings from the review of research provide a context that forms the basis for recommendation for research and practice that address how to improve teacher education in sub-Saharan Africa.

5.8.1. Research how literacy initiatives can take existing teaching practices into consideration

Learner-centred education is widely embraced in the West, but what does it mean in the African context? Learner-centred learning is one of the most pervasive pedagogical ideas and promoted in many African curricula, but also hotly contested. Problems of defining or identifying learner-centred learning contribute to the confusion and debate around this concept. Notions of sound pedagogy often associated with learner-centred teaching, such as students actively and critically constructing their own knowledge as opposed to being given set answers and activities being tightly controlled by the teacher. More important than the exact definition, however, is the question of how broadly conceived valued principles can and should be implemented in an African context. There is a need to explore this issue both theoretically and empirically through research in order to give guidance to policy and program implementers. The literature offers more questions than answers (see Schweisfurth, 2011, for a thorough review), making definitive recommendations hard. Research can help clarify how principles of learner-centred education can contribute to higher levels of student engagement and learning within African school settings.

Care should be taken when introducing learner-centred teaching, and the focus should be on working with improving existing practices, rather than introducing a “paradigm shift” (see case study of Ethiopia below) that is unlikely to achieve much, particularly long-term. Focusing on enhancing principles and practices that are already in, and one that takes local contexts into consideration, is a better approach. This can include improved structure of teaching to avoid lost time, increased amount of time for reading, improved use of individual students to demonstrate and share knowledge. There is need for more research and practice with an approach that works *with* teachers’ existing practices.

5.8.2. Research how to improve early literacy instruction, particularly in the mother tongue, in teacher education programs

How to teach early literacy in teacher colleges is in need of greater attention, as this was identified as one of the key issues in the literature. Research on improving early literacy instruction in teacher education programs, either in-service, or pre-service, would help strengthen this crucial and foundational aspect of education. There is particular need to pay attention to teaching literacy in the mother tongue, which is relatively new in some countries. Also important is the transition from mother tongue to English, which takes place in all six focal countries, either within primary school or later. Teaching early literacy requires attention to the making and use of print materials. Although writing notes and the making of charts and other materials for use in the classroom is often covered in primary teacher training colleges, the use of such materials for teaching phonics, whole language, and other aspects of literacy instruction, should be made explicit and given more attention. Research can contribute to our understanding of how the use of literacy materials can be integrated into early literacy instruction.



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5.8.3. Provide more support for newly qualified teachers

Newly qualified teachers (NQTs) are an important category of teachers; they have limited experience, but they are also likely to be more open to change. Kenya's induction phase may be a good idea in theory, but in practice it does not seem to be functioning as intended. Whether a formal induction system is in place or not, assisting NQTs, such as through mentorship at the school they work at, might have promise, but national and local conditions might favour different solutions.

5.8.4. Increase teachers' salaries to support teacher recruitment, performance, and retention

Teacher salaries are taken as an indication of the status of the teaching profession. Furthermore, low salaries affect teacher morale, retention, and recruitment in negative ways. Raising teachers' salaries is expensive, but should be a long-term goal with the ultimate aim of improving education and honoring the teachers who do important work.

5.8.5. Review teacher placement practices

Some countries have a central system of placing teachers in schools where they are needed, which helps fill positions in less appealing areas, such as remote rural schools. However, this system reduces teachers' independence and retention. It can also create problems when teachers do not speak the local language of the area they have been sent to. Allowing teachers more agency in such an important decision as where to work is also likely to be welcomed by teachers, and thus also make this profession more popular. Filling vacancies in remote areas might be more difficult without teacher placement, but incentives, or allowing teachers to list preferred regions rather than schools, could be ways to address this.

5.8.6. Evaluate the use of scripted lessons in light of alternative methods

Scripted lessons are popular with large, evidence-driven interventions, but it is not clear whether this approach is reconcilable with the need to develop critical teachers with the flexibility to adopt their teaching to meet the needs and requirements of the current and future curricula and assessment practices, diverse students, and other aspects of their teaching. It remains to be seen to what extent scripted lessons are a valuable contribution, not least since these are only evaluated in comparison with status quo – not another intervention. It is also not clear what the medium and long-term effects of scripted lessons are for teachers' abilities or student outcome. But in a situation of poor student performance, scripted lessons might fulfill achieve some goals of increasing literacy levels. These areas require more research to better inform practice. Regardless of the approach, efforts to improve literacy should strive to realistically consider teachers' working conditions, practices, and understanding, as teachers and the context they are working in are crucial for achieving quality education for all.

Part II: Case Studies

Recommendations for research and practice based on the case studies

- Review entry requirements into teacher education programs
- Provide guidelines for implementation of policies on teacher education
- Strengthen connections between theory and practice in teacher education programs
- Strengthen the practicum period
- Promote training of secondary school teachers who can teach two subjects

6: Ethiopia

6.1. Introduction

Ethiopia is the second-most populous country in Africa with a high GDP growth rate (Trading Economics, n.d.), but almost one third still remain below the poverty line (CIA, n.d.). Of the 86 living languages, 41 are institutional (Ethnologue, n.d.), while curricula for seven main languages are in the process of being developed (ESDP-V, see below). Amharic has traditionally been the lingua franca, while today English is also important, and both languages are taught in school. In secondary school all subjects are taught in English except Amharic and civics (ESDP-V).



Education in Ethiopia in historical times was the responsibility of the Coptic Orthodox Church, which dates back to the fourth century. The church strongly opposed secular education, and maintained control over education until Emperor Menelik II established a school in 1908, probably inspired by the missionary schools that were being built on a large scale starting around the mid-1800s. As this education system grew, it focussed on teaching basic literacy and mathematics skills in Amharic for the purposes of training staff for the modern bureaucracy. In 1944 the first primary teacher training started, followed by the establishment of the University College of Addis Ababa to train secondary school teachers in 1950. Today, teacher education is organized by the Ministry of Education through the Department of Educational Programs and Teacher Education (Ahmad, 2013).

Basic education consists of eight years of primary school (divided into two cycles), two years of lower secondary and two years of upper secondary. The gross enrolment rate in primary school is 87 percent, but the completion rate is just 47 percent. In lower secondary the gross enrolment rate is 38 percent (FHI 360, n.d.-b), despite government efforts of achieving universal



primary education. The literacy rate in Ethiopia is 49 percent; somewhat higher for men than for women (CIA, n.d.).

6.2. Growth in Enrolment and the Need for Teachers

Ethiopia has seen a dramatic increase in the number of schools and primary students enrolled in school. Between 1994 and 2013, the number of primary schools more than tripled (BDS Center for Development Research, 2016), while enrolment more than quadrupled between 1999 and 2011, from 23 per cent to 94 per cent – one of the highest enrolment growths in sub-Saharan Africa (UNESCO, 2014). This has led to a great demand for teachers, but supply of teachers through training institutions has not kept up with demand.

There is a lack of teachers, and the number of qualified teachers is also low. Teachers in the lower grades are more likely to be untrained, where in 2010, only 20 per cent of teachers were trained in grades 1–4, compared to 83 per cent in grades 5–8; an average of 48 per cent (UNESCO, 2014). Furthermore, there are disparities between urban and rural areas. The shortage of qualified teachers is higher in rural parts of the country, and teacher attrition is a problem further exacerbating the lack of teachers (BDS Center for Development Research, 2016).

6.3. Supply and Demand of Teachers

Understanding supply and demand from a holistic perspective has been a concern since the first General Education Quality Improvement Program (GEQIP I) was published in 2012. Several small-scale studies have pointed out the problem of meeting the gap between supply and demand in both primary and secondary schools. However, strong economic growth and the investment of 25 per cent of the national budget on education – relatively high by international standards – is contributing to remedying this. The demand for teachers depends on how teachers' workload is calculated as well the projected attrition rate. The demand for teachers is relatively low when the projection is based on the standard weekly workload of 22.5 hours of teaching per week. The actual workload based on a survey, however, where teacher utilization is lower, which raises the demand for teachers. Following the survey to make a projection, Ethiopia will need an addition of 572,730 primary school teachers and 187,170 secondary school teachers in the next five years for its population of about 100 million. The demand for teachers is not evenly distributed, however, with some regions having an oversupply of teachers, while others are in high demand (BDS Center for Development Research, 2016).

6.4. Policies in Teacher Education

The Ministry of Education carried out a study to ascertain the quality and effectiveness of teacher education in 2002, which resulted in a task force that produced Teacher Education System Overhaul (TESO). TESO was initiated in 2003, and was included in a teacher education reform called Teacher Development Program (TDP) that was implemented in 2004, which also included English Language Improvement Programme (ELIP) and Leadership and Management Programme (LAMP) (Ministry for Foreign Affairs of Finland, 2007).



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TESO had great ambitions of thoroughly reforming the teacher education system, and sought to achieve a system-wide reform of teacher education at all levels while stressing the need for strong partnerships between teacher training institutions and schools (Ahmad, 2013). TESO departed from previous teacher education with its focus on a longer practicum experience as well as a move away from a dominant focus on the student teachers' content knowledge. This has entailed a shift away from a poorly organized practicum that lasted only a few weeks and often at the end of the teaching program, to a system that addresses pedagogical and subject specific method, especially for secondary school teachers and a stronger and longer practicum component (Mekonnen, 2008).

TESO further strived to substitute passive, rote learning with active and learner-centred teaching. The TESO policy document outlines steps and procedures to carry out learner-centred teaching, and assessment procedures for different subjects. TESO foregrounds changes in pedagogy, including 21st century skills such as problem solving and active learning: "learning is planned according to students' needs ... Teachers should incorporate problem solving, active learning, and ... produce differentiated materials catering for all students' learning needs" (Ministry of Education, 2003, as cited in Mekonnen, 2008, p. 293).

Structural changes are also important parts of TESO's "overhaul" or "paradigm shift" of the Ethiopian teacher education system. Secondary school teacher training has been reduced from four to three years, which they take after completing grade 12 of secondary school. Teachers in the first cycle (four years) of primary school require 10 years of basic education plus a one-year certificate program, while teachers in the second cycle, grades 5–8, require 10 years of basic education and a three-year diploma program (see Table 2 for an overview).

Table 1. Requirements for teacher education at different levels in Ethiopia

	Primary school, grades 1–4 (first cycle)	Primary school, grades 5–8 (second cycle)	Secondary school, grades 9–12
Basic education requirements	Grade 10	Grade 10	Grade 12
Higher education requirements	1-year diploma	3-year diploma	3-year degree

High ambitions notwithstanding, TESO has been critiqued by several scholars. "It is by no means an exaggeration to characterize TESO as the most ambitious, and a highly contested, reform to be ever introduced in Ethiopian teacher education" (Semela, 2014, p. 128). Ahmad (2013) has a similar description of the current situation:

At present, Ethiopian teacher education is characterized as a terrain of persistent contradictions, challenges, and chaos. Engrossed in and obsessed with the rhetoric of system overhaul and reform, state actors officially opted for a swift and sweeping change in the structure and content of teacher education since 2003. (Ahmad, 2013, para. 16)

Mekonnen (2008) points to both structural and conceptual weaknesses, particularly the controversial shortened teacher training and the reduction of the requirements to become teachers in lower primary school (see Table 2). Allowing students with grade 10 to enrol in teacher education diploma programs risks inviting a large number of less able students, sending a



message that teaching is not an important profession. Grade 10 leavers are also more likely to perform poorer than those who complete secondary school, thus raising the number of students with lower academic scores who become primary school teachers.

There seems to be a trade-off between quality and quantity, where TESO wants to enrol and graduate as many new teachers as possible, even if that means marginalizing the intake base and the quality of the education they receive. Another concern Mekonnen (2008) raises is the lack of attention to cultural change, even though TESO sees changing schools' and communities' practice as a key motivation.

Like other top-down educational reforms, TESO emphasizes directives (specification of how teaching should be conducted, ways to carry out the practicum, evaluation mechanism at teacher education institutions) and says very little about how Ethiopian school culture can be changed. (Mekonnen, 2008, p. 298)

Tessema (2006, 2007) is even stronger in his critique of TESO, describing it as a managerially driven reform process that has not taken into account the experience and expertise of educationists. Practitioners have been sidelined and the reform process is part of fulfilling an instrumental, central, and market-oriented agenda. The mottos and change of agendas driving the reform, including “overhaul” and “paradigm shift” are part of an international, neoliberal trend that adopts popular pedagogical discourse such as “active learning”, “competence”, and “participatory”. This discourse of improving skills runs counter to the realities of deskilling of teachers through increased workload, unsustainably rapid expansion of the education system, and the introduction of plasma display panels (see below) (Tessema, 2006). Tessema sees these as part of the discourse propagated by NGOs and big foreign donors, whom African countries are beholden to. Tessema (2007) further clarifies:

My argument is that central reform performers have failed to realize the immense professionalism teacher education entails, and the importance of involving those actual practitioners, who feel it better and have a close experience of it. What is missing is a radical change agenda and implementation by focusing on teacher development, curriculum, assessment, school–faculty collaboration, system and administration, and interdisciplinary inquiry and research. (p. 42)

Plasma display panels, or Plasma TVs, have been introduced as a way of delivering streamlined content to secondary school teachers, and plasma TVs have been installed in many classrooms across the country for natural sciences, mathematics, English, and civics lessons in grade 9–12. In this project, the teacher acts as a technician, who simply unlocks the cage that holds the screen, and then watches the centrally broadcast transmission. The plasma lessons are taught by foreigners with an English accent foreign to Ethiopians, and often made in culturally alien contexts. Contrary to the ideal of active learning, there is no room for questions of interaction, and the policy of continuous assessment has been turned into multiple-choice questions at the end of the semester (Dahlström & Lemma, 2008).



6.5. Addressing Challenges

A major finding of the BDS Center for Development Research (2016) report was that teachers are “underutilized”, meaning they teach less than what they are mandated by the government. In secondary schools, and in remote rural schools in particular, this is partly due to the fact that many teachers only teach one subject. Increasing the number of secondary school teachers with a combined or composite major, allowing them to teach two (or more) subjects, would address this underutilization. This could be done through an integrated program that prepares students for teaching at the start of their Bachelor’s degree while integrating the delivery of subject matter, pedagogy, and practicum, rather than the current system of one year of teacher training after a separate Bachelor’s degree.

The BDS Center for Development Research report also recommends a two-year induction program for new teachers, which is currently in place in Ghana. This would require support of experienced mentors, although in rural areas most teachers are inexperienced, and incentive packages for mentors in rural areas might be required.

6.6. Teacher Education and 21st Century Skills in Ethiopia

Table 2 provides an overview of the use of certain key terms in the revised Ethiopian documents. It should be noted, however, that out of context the presence or frequency of these terms can be misleading, so the table should be read in the context of the rest of the country review.

Table 2. Key terms in Ethiopian research documents

Search terms	Ahmad, 2013	BDS CDR, 2016	Dahlström & Lemma, 2008	Mekonnen, 2008	Semela, 2014	Tessema, 2006	Tessema, 2007	Total
21 st century skills*	0	0	0	0	0	0	0	0
critical thinking*	0	0	6	0	0	0	0	5
problem solving*	3	1	2	3	0	1	2	12
independent thinking*	0	0	0	0	0	0	0	0
active learning*	7	0	1	7	2	5	6	28
ICT	15	3	1	0	0	0	0	18
learner-centred*	3	0	6	9	3	5	0	26



* And related terms

6.7. Policy Documents

Of the six countries included in this report, Ethiopia stands out by publishing the most policy documents online through the website of the Ministry of Education. However, the many submenus and links can make them somewhat hard to locate, and most documents are not on the main website, moe.gov.et, but on info.moe.gov.et, which does not appear to be linked from the main website. Some documents have been excluded since they are only available in Amharic, the working language of the government, but most are in English. The website contains several policy documents as well as the grade- and subject-specific syllabi that make up the national curriculum. In addition to the documents available on the website, the Education and Training Policy and the first two versions of the Education Sector Development Program (ESDP) have been made available by the Ethiopian research advisor Haregewoin Fantahun, and the most recent version is available from the Global Partnership for Education website, along with ESDPs from many countries. The documents included in this review are:

- The Education and Training Policy (1994)
- The Education and Training Policy and its Implementation (2002)
- Curriculum Framework for Ethiopian Education (2009)
- Education Sector Development Program (I–V) (1998–2015)
- The national curriculum (the syllabi for some subjects)

Table 3 provides an overview of the use of certain key terms in the policy documents and the syllabi.

Table 3. Key terms in Ethiopian policy documents

Search terms	ETP	ETPI	CFEE	ESDP-I ESDP-II	ESDP-III ESDP-IV	ESDP-V	Syllabi	Total
21 st century skills*	0	0	0	0	0	0	0	0
critical thinking*	0	0	5	0	0	0	0	5
problem solving*	6	21	18	8	8	3	13	77
independent thinking*	0	0	0	0	0	0	0	0
active learning*	0	0	7	0	4	5	0	16
ICT	0	0	18	1	57	46	13	135
learner-centred*	0	5	2	7	7	4	4	29

* And related terms

6.7.1. Education and Training Policy

The Education and Training Policy (ETP)¹⁹ is the oldest of the reviewed documents, and contributes to our understanding of the development of educational policy in Ethiopia. The most

¹⁹ <http://www.unesco.org/education/edurights/media/docs/8bee116313a86cc53420f01a7fa052bd5e40bf3d.pdf>



recent ESDP cites this early document, indicating its continued relevance and influence. This short document has great faith in the role of education in solving societal problems, but makes no mention of skills beyond the general sense of the word: “One of the aims of education is to strengthen the individual’s and society’s problem-solving capacity, ability and culture starting from basic education and at all levels” (p. 1).

6.7.2. Education and Training Policy and its Implementation

The Education and Training Policy and its Implementation (ETPI)²⁰ outlines the history of policy in education, current problems, and how the policy will improve the quality of education. Like the Education and Training Policy, it has a strong focus on nation-building and ability of education to provide solutions to problems in society, and distances itself from the old, ineffectual education system: “The educational policy envisages the creation of a society with humane and democratic values, high problem-solving ability, and capacity to inquire and carry out research and liberate itself from the adverse pressures of Nature” (p. 27). The policy goes on to describe the old educational system as teacher-centred, which contrasts with the current one, which encourages student inquisitiveness and has been designed to develop the problem-solving skills of students.

6.7.3. Curriculum Framework for Ethiopian Education

The Curriculum Framework for Ethiopian Education²¹ is a relatively concise outline of the key ideas and competencies for primary and secondary education, as well as the learning areas and timetables at these levels. The framework includes a one-page lesson structure and four pages with examples of active teaching and learning strategies in the appendix. In its one-page vision statement, the curriculum framework succinctly lists the abilities its young people will acquire through education (p. 4):

- literate and numerate
- creative thinkers
- problem solvers
- active innovators
- IT literate
- informed decision makers democratic and tolerant
- able to adapt to a changing world

Principles and values are similarly enumerated, while key competencies are elaborated over a few sentences each. The full description of higher-order skills reads: “The curriculum should be taught in a way that engenders and promotes the development of application of knowledge, analysis, synthesis, evaluation and innovation” and, “Students should develop critical thinking and creative thinking skills in the context of solving problems” (p. 7). The term “critical thinking”, independence, and similar expressions are used repeatedly throughout the document.

²⁰ moe.gov.et/policies-and-strategies

²¹ http://www.moe.gov.et/directorate-1/-/asset_publisher/YuKqZz6wK0fP/content/curriculum-framework-for-ethiopian-education-kg-grade-12-



The curriculum framework further states that the syllabi should state where and how to include ICT, but also keep in mind the realities of what facilities are available in schools.

6.7.4. Education Sector Development Program (I–V) (1998–2015)

The Education Sector Development Program^{22, 23, 24, 25} has been published five times since 1998, which allows for an analysis of the development of this policy document. The first of these, published in 1998, centres on the risks and problems in education, notably around finance and procurement, and how to address these. Unlike the later ESDPs, the first edition does not mention special needs education. The only reference to skills of any kind is with regards to labour skills. The second of these (ESDP-II) is about twice as long as the first document, provides more detail, and offers a situation analysis to serve as background as well as explicit goals and strategies. ESDP-II stresses problem solving and child-centred learning, both of which are mentioned several times. In order to reduce dropout rates and make teaching relevant, the policy recommends “training teachers in order to enable them to introduce child-centered, gender sensitive and activity-oriented learning approaches and continuous assessment of pupil achievement” (p. 24). There is one reference to ICT in the document, which states that this will be a major endeavour in the next three years in secondary schools.

ESDP-III, which was published in 2005, is similar in structure to ESDP-II, and continues the focus on problem solving, although more often in the context of adult education. The third ESDP extends the notion of child-centred teaching to technology and technical and vocational education and training (TVET) and higher education, using “child centered”, “learner-centered”, and “student-centered” seemingly to cover the same teaching approach. The concept of *active learning* is introduced in this ESDP, listed as one of several efforts to ensure quality teaching: “Cluster based in-service teacher training will mainly focus on active learning methodology, continuous assessment, managing self-contained classrooms, action research, etc.” (p. 57). ICT receives much more attention, presumably a reflection of changing times, as the Internet and the role of computers had grown considerably even in this short time span. References to ICT are mainly about infrastructure, but also a view of ICT as a way of overcoming existing shortcomings of lack of teachers and laboratory equipment; perhaps overly optimistic (Warschauer & Matuchniak, 2010). A single sentence on the role of ICT in supplementing

²² Volumes I and II are not available online.

²³ Volume III: http://www.moe.gov.et/bg/policies-and-strategies/-/asset_publisher/ET6WVGYXbdDo/content/education-sector-development-program-i-1?redirect=%2Fbg%2Fpolicies-and-strategies%2F-%2Fasset_publisher%2FsoxXYHoJ1nxs%2Fdocument%2Fid%2F42818%3FinheritRedirect%3Dfalse%26redirect%3Dhttp%253A%252F%252Fwww.moe.gov.et%252Fbg%252Fpolicies-and-strategies%253Fp_p_id%253D101_INSTANCE_soxXYHoJ1nxs%2526p_p_lifecycle%253D0%2526p_p_state%253Dnormal%2526p_p_mode%253Dview%2526p_p_col_id%253Dcolumn-1%2526p_p_col_count%253D3&inheritRedirect=true

²⁴ Volume IV: <http://www.globalpartnership.org/content/ethiopia-education-sector-development-program-iv-2010-2015>

²⁵ Volume V: <http://www.globalpartnership.org/content/education-sector-plan-2016-2020-ethiopia>



regular teaching indicates the potential of this new technology for teaching and learning: “The use of complementary learning modalities such as ICT will be enhanced” (p. 48).

At first glance, the ESDP-IV and ESDP-V, from 2010 and 2015, respectively, are strikingly similar, with the table of contents following the same structure and sharing many of the headings. But a closer look reveals that although the most recent version seems to have drawn on ESDP-IV, it is significantly revised to the point there seems to be little direct repetition of content. The ESDP-V is also more detailed and explicit when it comes to 21st century skills.

The only mention of “higher order skills” is in the ESDP-IV, which in a bullet point on main challenges states, “Lack of focus on higher order thinking in learning-teaching processes and examinations” (p. 19). *Problem solving* is briefly mentioned in the context of science and mathematics, and all teachers are “required to fully implement active learning and continuous assessment” (p. 22). Similarly, *child-centred learning* is mentioned in the context of standards for learning materials, which will be implemented through a system of accreditation and certification. Technology and ICT receives considerable attention, but hardly any with regards to their use in the classroom, except a single statement that it will improve the quality of education in secondary schools.

In contrast, the current ESDP – ESDP-V – reiterates the strong emphasis on technology and ICT, including a statement about improving quality education, but also includes a description of how ICT will be mainstreamed across subjects. It also describes the SchoolNET infrastructure, a portal that will allow students and teachers to access content stored on central servers. The ESDP-V also includes a more elaborate description of life skills, which the previous edition only briefly included. The current ESDP further elaborates on the quality of teaching, with several references to active learning and student-centred teaching. The document states that the teacher diploma program has more emphasis on teacher pedagogical skills, which need to be enhanced to meet the requirements of the new curriculum, including applying active teaching and student-centred methods:

The recent curriculum revision, with a move towards a student-centred approach to teaching and learning, requires active teaching methods and effective classroom management to maximise time on task. The new approaches will benefit all students when effectively applied, strengthening their confidence, leadership and innovation skills. (p. 57)

6.7.5. The National Curriculum

The Ministry of Education’s webpage²⁶ with the syllabi for all subjects states, “to be extended to full curriculum framework soon”. It contains 131 documents, including separate table of contents with a general course description for grades 1–12, and minimum learning competencies and flowcharts for some subjects in grade 9–12. Of these 131 documents, nine general course descriptions have been chosen – *English* (grades 1–4, 5–8, 9–10, 11–12), *Environmental Science* (grades 1–4), *Integrated Science* (grades 5–6), *Social Studies* (grades 5–8), and *Information Communication Technology* (grades 9–10, 11–12), representing all 12 grades. From the list of syllabi, eight have been selected from across the grades in an attempt to capture their variation: *English* (grades 1, 6, and 12), *Environmental Science* (grade 1),

²⁶ info.moe.gov.et/cdim.shtml



Integrated Science (grade 6) *Social Studies* (grades 6), *Information Communication Technology* (grade 12), and one subject that did not have a general course description, *Civics and Ethical Education* (grade 12).

All four English course descriptions are very similar, and much of the introductory text is identical. The introductions cover the changes that are new in these syllabi, and a list of the main features. These include “Competencies”, “Skills”, and “Language activities and resources”, while for grades 9–10 and 11–12, “Learning Strategies” is also included. The only skills mentioned are the four core language skills – speaking, listening, reading, and writing, with the addition of additional learning strategies in the highest grades. There are no explicit references to 21st century skills, but materials and tasks are suggested to serve the purpose of increasing student independence.

The introductions to *Environmental Science*, *Integrated Science*, and *Social Studies* are similarly short on references to skills. *Integrated Science* states that strengthening active learning was a change made to this syllabus, while both *Environmental Science* and *Social Studies* hold a vision for how this subject will be of great benefit to the students, although it does not specify how the teacher can work towards achieving this goal:

In fostering a range of personal and social qualities and dispositions, it helps children to develop a foundation of life skills, scientific enquiry skills, knowledge and attitudes that will inform their decision-making in the social, personal and health dimensions of their lives, both now and in the future. It also helps to prepare children for active and responsible citizenship. (Social Studies Syllabus Grades 5-8, p. iv)

The introductions to the two ICT syllabi contain even less information, just briefly introducing the subject.

6.8. Ethiopia: Key Findings and Concluding Remarks

Ethiopia has been making major progress in education and teacher education, with high government investments and a strong policy environment with ambitions and visions for providing quality education for all. There are not enough teachers, however, and the quality of teaching does not meet expectations. In an attempt to address this, the government introduced TESO, an ambitious program that aimed at “overhauling” and providing a “paradigm shift” teacher education in Ethiopia. Major changes, even “overhaul” of teacher training might be needed in Ethiopia, but the critique of TESO suggests that such major changes are hard to implement, and risk compromising some aspects of teacher education. Reducing requirements for enrolment is a way of increasing the number of new teachers, but that might lower the status of the profession as well as the skills of new teachers. This approach might be pertinent in situations with extreme lack of teachers, such as post-conflict countries like Liberia, but it is doubtful if this is a viable long-term approach in countries with moderate teacher shortage.

The introduction of plasma display panels, and the concomitant teacher training and teaching, was raised as a concern in several articles. Plasma display panels represent a view that teachers can be reduced to mechanical implementers, and that technology can more or less replace teachers. This is a questionable practice at best, and seemingly isolated to Ethiopia, but should be seen in light of the trend towards scripted lessons and strong belief in ICT’s ability to dramatically transform education. Even if plasma display panels should prove an improvement



over current teaching practices, they are a cul-de-sac on the road towards more engaging teaching and learning practices where students actively and critically engage and discuss.

The large timespan that the Ethiopian policy documents cover allows for an analysis of changes over time. The earliest documents, the Education and Training Policy from 1994 the follow-up documents on its implementation from 2002, are relatively short, and address skills only briefly, although the second of these is both longer and more explicit about skills – mostly limited to problem solving. The Education Sector Development Program, which ranges from 1998 to 2015, embodies this change more clearly. The first document is similar to the Education and Training Policy from 1994 in that it only mentions labour skills, whereas the subsequent editions grow more focused on skills and more precise in their descriptions. ICT also gains a more prominent role in the development of these documents, from a brief reference in the ESDP-II, to a relatively detailed account of the use of ICT in the classroom through SchoolNET, as well as the role of ICT in ensuring quality education. References to 21st century skills are also more prominent in the later reports, especially the most current one, including *problem solving*, *active learning*, and *child-centred learning*.

The Curriculum Framework for Ethiopian Education from 2009 has some similarities with the ESDP-V in that it stresses a number of skills. But whereas none of the ESDP documents mention *critical thinking*, this concept is restated six times in the curriculum framework. The curriculum itself – in the form of general course descriptions and the syllabi – are less explicit about 21st century skills. Three of the six reviewed subjects – *Environmental Science*, *Integrated Science*, *Social Studies* – include a reference to *active learning*, whereas most of the text is dedicated to the subject matter at hand.



7: Ghana

7.1. Introduction

Ghana's population of 28 million and a GDP rank of 32 out of 54 African countries places it roughly in the middle in terms of population and economic development, but the country is ranked 5th when it comes to technological advancement (Africa Ranking, n.d.). More than half the country's population lives in urban areas – the highest rate among the six countries, slightly ahead of Liberia and more than double that of Kenya and Ethiopia (Trading Economics, n.d.).



Since Ghana became independent from Great Britain in 1957, education has been high on the political agenda. The education system in Ghana is divided into pre-primary, primary (6 years), junior secondary (3 years), and senior secondary (4 years). Enrolment rates in Ghana are high by sub-Saharan African standards, with net enrolment ratio of 89% and 49% in primary and junior secondary school, respectively, almost half of which are female (UNESCO, 2015).

Teacher education in Ghana dates back to early colonial times, when missionaries trained teachers with the purpose of spreading the gospel. Later, particularly after independence, education, and hence teacher education, became an important part of the government's nationalist agenda. However, the more than doubling of enrolment in a few years led to a shortage of teachers, and also called into question the quality of education (Asare & Nti, 2014).

7.2. Pre-service Teacher Education and Training

The Ministry of Education is in charge of teacher education, which is taught in 38 public and 3 private colleges of education (CoE) in Ghana. In addition, two universities (University of Cape Coast, University of Education, Winneba) offer courses that lead to secondary education teacher certification. One of these, the University of Cape Coast's Institute of Education, conducts the examinations for the Diploma in Basic Education (DBE) offered at the CoE. The programmes are fully funded by the government of Ghana. The entry requirements have recently been revisited, and currently require a high school diploma and a grade C or higher in the core subjects (Mumuni Thompson, personal communication). The courses offered include three-year diplomas, bachelor and master's degrees, post-DBE, and distance education programs. The latter includes a diploma for untrained teachers, whom the government is trying to reduce in numbers through designated training programs (GhanaWeb, 2005). The master's degree prepares students to become teacher trainers or secondary school teachers. However, there are still untrained teachers, and the demand for teachers is very high (Asare & Nti, 2014).

Both primary and secondary teacher training in Ghana includes a combination of coursework and one-year teaching practice at a school, apart from the so-called on-campus practicum period, where they practice by teaching their peers. In the last year of training, the teacher candidates go



to a school to work under the supervision of a classroom teacher, who is present while the teacher candidate teaches. The tutors, or in the case of secondary schools, instructors or professors, visit the placement schools 10 times to observe, discuss, and evaluate the teacher candidates (Mumuni Thompson, personal communication).

7.3. Teacher Training Curriculum

The teacher training curriculum for English language studies focuses on general competence in English by revising the English taught in senior secondary schools, but also includes different kinds of literature to prepare the students as teachers of English as a foreign language. The English syllabus recommends problem-solving, decision making, critical and reflective thinking, as well as student-centred and mentoring approaches, while discouraging teacher-centred lecturing. Much of the focus on reading instruction is for upper primary and secondary, and most of the methodology courses are the 14 weeks of the first semester in the second year (see Table 4). That leaves only three courses for teaching reading in grades 1–9: pre-reading, beginning reading, and reading comprehension (Adu-Yeboah, 2011).

Table 4. Summary of the teacher training English Language curriculum

Year	First semester	Second semester
First	English Language Studies: grammar, speech work, writing and reading	English with Elements of Literature: literature, grammar, reading and writing
Second	English Methodology: curriculum studies, theories of language acquisition; second language teaching; language skills, pre-reading skills/activities, beginning reading, teaching reading comprehension: stages; teaching writing; teaching grammar at primary and junior high school; teaching spelling and dictation; language games; lesson plan format and features; teaching and learning materials preparations	English with Elements of Literature: literature, grammar, reading and writing

Source: Adu-Yeboah, 2011, p. 18

The teacher training curriculum for reading in primary school includes more focus on reading in order for students to develop the four language skills (reading, writing, listening, and speaking), developing interest and habit of reading, and English proficiency. According to Adu-Yeboah (2011), the curriculum makes several assumptions about the teacher candidates' prior skills and knowledge: they possess skills and knowledge about visual and auditory skills that are required for pre-reading activities; they are able to use and combine the two main methods of literacy instruction – phonics and “look and say”, and they are able to appropriately use teaching and learning materials to engage all learners.

7.4. In-Service Teacher Education and Training

Apart from the PRESET in English and reading, the government also offers INSET for teachers nationwide through the ongoing National Literacy Acceleration Programme (NALAP).



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Starting in 2010, NALAP is a bilingual bi-literacy program for early primary school that aims to help students learn both English and a Ghanaian language. The program includes seven components: Print concepts, phonological awareness, decoding and word analysis, vocabulary, fluency, comprehension, and text selection. The NALAP curriculum assumes that teachers will be able to speak the local language of instruction, which would be required for a bilingual program to be successful. However, there is no mention of how many teachers currently speak the local language or how any such discrepancy should be addressed (Adu-Yeboah, 2011).

7.5. Transforming Teacher Education and Learning (T-TEL)

Transforming Teacher Education and Learning (T-TEL; www.t-tel.org) is a pre-service teacher education training program for kindergarten, primary and secondary school teachers in Ghana funded by the UK Department for International Development (DFID). T-TEL is a four-year program that started in 2014 and operates in all 40 colleges of teaching in Ghana and supports the implementation of the new policy framework for Pre-Tertiary Teacher Professional Development and Management (Mumuni Thompson, personal communication; T-TEL, n.d.). The key pedagogical goal is summed up as follows:

The overall outcome of the programme is the development of beginning teachers who demonstrate interactive, student-focused instructional methods, who demonstrate gender sensitive and learner-centred instructional strategies, and who know and can apply the school curriculum and assessment. (Fletcher & Shepherd, 2016, p. 8)

In order to achieve this, T-TEL provides professional development and coaching for tutors at all colleges of teaching, with a focus on English, mathematics, and science, and supports the practicum part of the teaching training through school partnerships. T-TEL also works with the Ministry of Education and other regulatory bodies on pre-service teaching reforms and existing educational policies (Fletcher & Shepherd, 2016). T-TEL has also developed 39 manuals for student teachers, tutors, and others involved in the project, which are available through their website.

7.6. Newly Qualified Teachers

Newly qualified teachers (NQTs) are an important group of teachers. Some research focuses on this group in particular, since the early stage in a teacher's career is an important and formative one. Akyeampong and Lewin (2002) studied the perceptions of people in different stages of transitioning to becoming full members of the teaching community: those beginning teacher training, completing training, and NQTs (with two years of teaching experience). This approach allowed for an analysis of the development of teachers at the beginning of their career, based on interviews and their responses to a questionnaire. That status of the profession declined among the working teachers, which shows that the sense of low status of the teaching profession grows stronger as teachers start working. Similarly, attitudes towards student discipline in the form of caning was also different among the groups, with NQTs having a more favorable view of caning. This form of discipline is discouraged in the CoE but not uncommon in schools, suggesting that teachers learn to accept this practice when they see it taking place in schools.



With regards to teaching and learning, the respondents in Akyeampong and Lewin's (2002) research were mostly supportive of group work, which was emphasized during teacher training as a strategy. But in the colleges and classrooms this form of organization was uncommon, and the large class sizes also made this unpractical. In their evaluation of the statement "the most important thing a teacher can do is to teach pupils facts," the respondents differed, and the beginning student teachers were in highest agreement. However, the researchers' observations suggested that NQTs might agree in principle, but this was not reflected in their teaching practice. Learning from asking questions was also valued among the respondents, but this could reflect a focus on factual recall rather than probing or asking open-ended questions.

A report on teacher preparation and continuous professional development in Tanzania, with a focus on reading and mathematics, found that tutors' and NQTs' understanding of reading was limited, and their teaching focused on drills and syllables, with little attention to whole, meaningful texts (Bhalalusesa et al., 2011). They embraced child-centred learning and participatory methods, but hardly used these in practice.

7.7. Teacher Education and 21st Century Skills in Ghana

Table 5 provides an overview of the use of certain key terms in the revised Ghanaian documents.

Table 5. Key terms in Ghanaian research documents

Search terms	Adu-Yeboah, 2011	Akyeampong & Lewin, 2002	Asare & Nti, 2014	Fletcher & Shepherd, 2016	Hedges, 2000	Total
21 st century skills*	0	0	0	0	0	0
critical thinking*	8	0	20	2	0	30
problem solving*	17	0	1	3	0	21
independent thinking*	0	0	0	0	0	0
active learning*	0	0	0	0	0	0
ICT	2	0	0	1	0	3
learner-centred*	11	0	0	6	0	19

* And related terms

7.8. Policy Documents

The Ministry of Education is responsible for education in Ghana, and subsumes several statutory bodies, including Ghana Education Service, Ghana Library Board, Bureau of Ghana Languages, and Ghana Book Development Council. The Ministry of Education website (moe.gov.gh) lists the following policy documents, but only one appears to be available on the website, while two are hosted on UNESCO's website:

- Inclusive education policy: Standards and guidelines (2013) [available]
- ICT in education policy (2015) [not available]
- ICT in education policy (2008) [not available]

- Pre-Tertiary Teacher Professional Development and Management in Ghana [not available]
- Ghana ICT in Education Strategic Plan 2011 - 2015 [not available]
- Education Strategic Plan 2010 - 2020 - Volume 1 [available via UNESCO]
- Education Strategic Plan 2010 - 2020 - Volume 2 [available via UNESCO]

The Ghana Education Service (GES) is responsible for the coordination and implementation of the national education policy on pre-primary, primary, and secondary education (IBE-UNESCO, 2010/2011). The GES website (ghanaschoolsinfo.org) only provides information on senior high schools. However, the website lists detailed information about all the schools in the country and the syllabi of each subject, some of which have been included in this review (see below).

Table 6 provides an overview of the use of certain key terms in the policy documents and the senior high school syllabi. It should be noted, however, that out of context the presence or frequency of these terms can be misleading, so the table should be read in the context of the rest of the country review.

Table 6. Key terms in Ghanaian policy documents

Search terms	ESP (vol. I)	ESP (vol. II)	Standards and guidelines	Inclusive education policy	SHS syllabi	Total
21 st century skills*	0	0	0	1	11	12
critical thinking*	0	0	0	0	3	3
problem solving*	0	0	0	0	46	46
independent thinking*	0	0	0	0	0	0
active learning*	0	0	0	0	0	0
ICT	19	18	1	0	61	99
learner-centred*	0	0	0	7	0	7

* And related terms

7.8.1. Education Strategic Plan (volumes I and II)

The Education Strategic Plan (ESP)²⁷ for this decade is the product of discussions and deliberations among different parts of the national and local governments, including district education offices, as well as NGOs and other stakeholders. The previous ESP focal areas were these cross-cutting themes: (a) access to education, (b) quality of education (c) education management, and (d) science and TVET. In the current ESP the focal areas reflect the actual structure of education – basic, secondary, and tertiary education, as well as non-formal education, inclusive and special education, and education management.

An extensive education sector SWOT analysis (strengths, weaknesses, opportunities, threats) on five topics, including access and equity, and skills development, showed that strengths included increased access to basic education and participation in non-formal education.

²⁷ planipolis.iiep.unesco.org/sites/planipolis/files/ressources/ghana_esp_2010_2020_vol1.pdf; planipolis.iiep.unesco.org/sites/planipolis/files/ressources/ghana_esp_2010_2020_vol2.pdf



Weaknesses and threats included pupil retention in the basic cycle and teacher deployment, commitment, and absenteeism. In terms of skills development, weaknesses were listed as lack of policy direction and low-quality inefficient programmes.

Apart from this reference in the ESP, skills are mostly addressed in terms of vocational skills and skills for employment, or ICT skills, and in one instance “personal development and work” (Vol. I, p. 27). The mission statement for education is telling in this regard, as it reads: “To provide relevant education with emphasis on science, information, communication and technology to equip individuals for self-actualisation, peaceful coexistence as well as skills for the workplace for national development” (Vol. I, p. 21). There are brief references to literacy and numeracy, often in bullet points, and no mentions of more specific skills, including higher-order skills or learning approaches.

When it comes to ICT, the ESP mentions basic infrastructure, such as electricity, as weaknesses influencing decentralisation, an overall goal of the policy, and the inequitable distribution of ICTs as a threat to the education sector more generally. As for ICT as an educational goal, the policy provides a tripartite model, where ICT is (a) a management tool at the institutional level; (b) 21st-century skills that everyone should develop; and (c) a pedagogical tool, especially for upper secondary schools. The only reference to the integration of ICT skills with literacy or learning more generally is, “Use ICTs to assist in ensuring that graduates from basic education are functionally literate and productive” (Vol. I, p. 17).

For the basic cycle (pre-primary and primary education), the policy document suggests the development of an “[a]ppropriate ICT and skills development curriculum” (Vol. 2, p. 12) by 2012 and which should be reviewed annually. This need for ICT and skills development opportunities is repeated for both the secondary and non-formal levels, where reference to these skills for future study, work, and entrepreneurship is explicitly stated.

7.8.2. Policy Document on Inclusive Education: “Standards and Guidelines”

The policy document “Standards and guidelines: For practice of inclusive education in Ghana”²⁸ outlines the requirements and guidelines for making schools facilities accessible to physically disabled students, teachers, and staff, including technical drawings with minimum and maximum dimensions. The purpose of this document is stated as providing “assistance and guidance to educational institutions in their provision of minimum access required in various types of school buildings, gadgets, learning equipment and materials, as well as curriculum and pedagogy for the practice of Inclusive Education” (p. 6) Apart from the technical specifications, the document emphasizes the need for teachers to provide learning opportunities for all learners, including use of diverse teaching and communication approaches. There is no mention of specific skills, other than that teachers should adapt the curriculum to meet the needs of students with special education needs.

7.8.3. Inclusive Education Policy

The Inclusive Education Policy²⁹ outlines in greater detail the history and policy context of inclusive education. The policy makes it clear that “learners with special educational needs”

²⁸ moe.gov.gh/site/policy

²⁹ www.moe.gov.gh/assets/media/docs/FINAL_Education_POLICY_CD.pdf



includes not just students with disabilities, but all students who face barriers to an optimal education, such as street children and gifted children. The document further stresses that the curriculum is in fact inclusive and takes into account students of various backgrounds, resources, and opportunities in order to “systematically building their knowledge and skills to prepare them for life in the 21st century” (p. 11). Other references to skills including the need for “training in social skills” (p. 7) and basic skills, such as literacy, numeracy, and life skills.

7.8.4. Senior High School Teaching Syllabi

The Ghana Ministry of Education has published the teaching syllabi for all subjects, which are organized into nine programs.³⁰ From these 48 subjects, the five core subjects and one ICT subject have been selected, which are arguably the most relevant to higher order skills, although these skills are not in any way limited to certain subjects. These subjects include *Social Studies*, *Literature in English*, *Core Maths*, *Integrated Science*, and *ICT Core* – all subjects from the “Core subjects” program. The ICT Elective is included to cover all subjects on ICT.

The *Social Studies* syllabus aims to prepare students to study the problems of society and develop a “critical mind” – an expression which is used three times in the document. It also mentions the use of ICT in the content section of a unit. One of the general aims of this subject is to “develop critical and analytical skills in assessing issues for objective decision-making” (p. ii). These and a few other references to such skills, such as “good thinking skills”, are only present in the introductory section, and not in the description of the units and their content, which make up the majority of this syllabus. A passage on evaluation elaborates on this, and points to the challenges students face in making use of higher order skills when faced with exam questions:

A number of examination questions at the secondary school level begin with the word “Discuss”. Discuss belongs to the evaluation thinking skill and implies the ability to analyze, compare, contrast, make a judgement etc. The word “discuss” asks for a variety of thinking skills and is obviously a higher order thinking behaviour. Students consequently do poorly on examination questions that start with “Discuss”. (p. vi)

Based on this, the syllabus goes on to urge teachers to highlight discussion questions, since these will be found on tests as well as in the workplace and higher education. *Discussion* as a method is widely suggested in most units.

Problem solving is listed as one of the six general aims. Apart from this, the closest reference to “problem solving” in the unit section of this document is under *Unit 2: Education and societal change*, which states, “Students in groups to identify a problem in the community and apply knowledge gained from science, mathematics and other sources in solving it” (p. 38).

There seems to be less focus on higher order skills in the *Literature in English* syllabus. It repeats the need to “develop the ability to critically analyze any prose material” in the general objectives of several terms, and in the general description of teaching and learning activities it stresses the need to encourage students to develop the skills for critical thinking, and analysis and to appreciate any type of literary work.” (p. vi). In the unit descriptions for teaching and learning activities, however, there is little explicit reference to critical or analytical skills, which are otherwise described in the general objectives of this subject. In two cases, social problems are suggested as a topic for teaching and learning activities.

³⁰ ghanaschoolsinfo.org/syllabus



Higher order skills are also addressed in the *Core Maths* syllabus. But apart from mathematical application and *problem solving*, which is addressed throughout, higher order skills are primarily addressed in the introductory section, and only very briefly:

It has been realized unfortunately that schools still teach the low ability thinking skills of knowledge and understanding and ignore the higher ability thinking skills. Instruction in most cases has tended to stress knowledge acquisition to the detriment of the higher ability behaviours such as application, analysis, etc. (p. vii).

This quoted text is repeated in the *Integrated Science* syllabus (but one word has been changed), and the ideas are reflected in all the reviewed syllabi. Beyond this, and the frequent appeal for students to “discuss” topics, there is little reference to specific higher order skills.

The *ICT Core* syllabus stands out with its listing of 21st century skills – in the last section of the second and last year of higher secondary school (see Figure 2). In addition, there is an appendix that lists 21st century skills, taken from Partnership for 21st Century Skills (now at www.p21.org), and one of Bloom’s digital taxonomy.³¹

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES
UNIT 1 PROJECT BASED ACTIVITIES	The student will be able to: 5.1.1 demonstrate 21 st century skills applicable to project-based activities	Twenty-first Century Skills application in Project-based activities. e.g. <ul style="list-style-type: none"> • Collaboration • Communication • Self direction • Critical thinking • Problem Solving 	Lead students to brainstorm the 21 st century skills application to project-based- activities

Figure 2. Excerpt from the *ICT Core* syllabus highlighting 21st-century skills, p. 27

The *ICT Elective* syllabus is shorter than the others, but borrows some of the phrases used in the science and maths syllabi, including an emphasis on the use of “discuss” in exam questions. Under the heading *Assessment*, and the subheading *Note*, this syllabus adds the single sentence, “The questions should reflect **high order thinking**” (emphasis in original, p. ix). There is no further elaboration, however, on what this reflection would mean in practice. In all the other syllabi, the only mention of ICT is in *Social Studies*, with the phrase, “Use of ICT for work and learning” (p. 34).

7.9. Ghana: Lesson Learnt and Concluding Remarks

Education in Ghana has undergone rapid changes recently, with relatively high enrolment rates in primary and secondary school. The centrally mandated placement of teachers means teachers do not necessarily speak the local language, even though this is an assumption and prerequisite for early literacy teaching. In an effort to address concerns raised about the quality

³¹ edorigami.wikispaces.com/Bloom%27s+and+ICT+tools



of teacher education, the government and its partners have implemented T-TEL. This program focuses on coaching and strengthening the practicum period. It is too early to evaluate T-TEL, however, but the ambitions are clearly high and the program seems promising.

The literature on teacher education raises the question about how newly qualified teachers manage their new job. How NQTs respond to and take up new ideas and teaching methods are important indicators for how PRESET policies work in practice. With NQTs (and other studies on teachers not reported here), there are discrepancies between what researchers have observed and teacher self-reports with respect to aspects of teaching and learning such as group work and asking questions. These findings underpin the importance of long-term commitment and careful follow-up, as it cannot be assumed that pre-service interventions necessarily translate into practice.

The policy documents and curriculum from Ghana paint a picture of great efforts to improve education at all levels, and there is a strong focus on ICT in education, with both *ICT Core* and *ICT Elective* syllabi. Although not available online and thus not included in this review, the publication of an ICT policy as early as 2008, and another in 2015, speaks to the emphasis the government is putting in this area. There are several references to 21st century skills, and five of these are even listed in the appendix of one of the syllabi. Yet there is little elaboration on these or other higher order skills, which in general receive little attention, and the term “collaborate” is only mentioned in a long list of verbs for “evaluating”. There is also little mention of literacy instruction or teaching methods. However, “analysis” and “analyse” are widely used, and just like this concept can be seen as entailing the use and development of higher order thinking skills (see Appendix B), other wordings might imply or suggest such skills.

8: Kenya

8.1. Introduction

After independence in 1963, education was seen as an important tool for fostering national unity and cohesion, and the subjects history and geography were changed in support of this goal (Ministry of Education, Science and Technology, 2015). The ruling party declared that primary education would be free. This came into effect for the first four years of schooling in 1974, this was expanded to seven and eight in 1980 and 1985, respectively. However, under pressure from the International Monetary Fund (IMF) and the World Bank, user fees were re-introduced in the 1980s, as was the case in neighbouring Tanzania. Since 1985 Kenya has had an 8-4-4 model – eight years of primary school, four years of secondary, and four years of university education, with an emphasis on pre-vocational subjects in primary school which is thought to benefit the many students who drop out.



With the education for all (EFA) goal of universal primary education in 1990, followed by the Millennium Development Goals (MDGs) that reiterated this goal a decade later, free primary education was reintroduced in 2003, leading to a massive enrolment increase. However, this initial surge was followed by a drop in enrolment, presumably because of the poor quality of education offered (Bunyi et al., 2011). Primary school net enrolment ratio is currently at 84 percent (UNICEF, n.d.). Lower secondary enrolment has also increased significantly, while pre-primary education is among the highest in Africa, at 52% (UNESCO, 2012). The adult literacy rate is 72 percent (UNICEF, n.d.).

With a population of 48 million, Kenya is one of the more populous countries in sub-Saharan Africa, and it also among the most developed. English is the official language, but the national language Kiswahili is more widely spoken. Both languages are taught in school from grade one, while indigenous languages should be taught for the first three years except in linguistically heterogeneous areas (Bunyi, 1997). In reality, however, this principle is not always practiced (Piper & Miksic, 2011).

Kenya Vision 2030 was introduced in 2007 as long-term development plan with the aim of becoming a middle income country. The Kenyan government sees ICT as an integral part of this vision, and integrating ICT across all levels, including teaching, learning, and management, is an important step in this process. This requires improving and mainstreaming delivery and implementation, and a reflection of ICT at all levels within the curriculum.

8.2. Pre-Service Teacher Education and Training

At the time of independence, less than one third of teachers were trained, and this was one of the key issues identified at the time for improving education. Today virtually all primary school



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teachers have received training. However, although the quality of teacher training has been addressed in policies since independence, this concern has not been adequately attended to, making the quality of teacher education a key question in current debates.

Improvements to teacher education have largely focused on increasing teachers' subject knowledge and raising the requirements for entry into public teacher training colleges (PTTCs) (Bunyi et al., 2011). Apart from three teacher education conferences between 1956 and 2011, little attention has been paid to quality in teacher education:

Indeed, there has been no serious effort to interrogate the concept of quality teachers and how the curriculum and structure of PTE [primary teacher education] can be changed to enhance the quality of training the trainees receive and therefore the quality of teachers in the country. For example, there has been no specific commission on teacher quality and training and the structure and curriculum of PTE has remained very much the same over the years. (Bunyi et al., 2011, p. 7)

There are 21 PTTCs in Kenya, and a number of small private colleges. Many of the students graduating from these colleges cannot find a job because of restrictions on hiring new teachers due to financial constraints, even though there is a shortage of teachers in schools.

The launch of a bachelor of education degree program at several universities increased the number of teachers with this degree, but in 2007, only 0.6 per cent of teachers in primary schools held a university graduate degree. This degree qualifies them for teaching in secondary schools, and as such many teachers feel overqualified, and teaching in primary school with a university degree lowers their status.

Training of early childhood development and education teachers is often through in-service teacher training and private institutions. The entry level requirements are lower than primary teacher education and not full time. Significantly, however, in spite of their lower educational requirements, early childhood development and education teachers are often preferred to teach in lower primary, since unlike the primary teacher education, their training is focused on young children (Bunyi et al., 2011).

8.3. Induction Phase for Newly Qualified Teachers

Newly qualified teachers (NQTs) go through a two-year induction phase, after which their performance is evaluated to judge whether they are fit to continue teaching. Although this is a critical phase in a teacher's career, there is limited attention being paid to this period from the government, as most of the focus is centred on the PRESET.

A study on this group of teachers based on interviews with 27 teachers with a Bachelor's of Education degree highlights some important aspects of this group (Indoshi, 2003). The NQTs had high expectations before they started their degree, and thought it was well-paid job with opportunities for professional development and promotion. They saw teaching as a profession that had the same status as other professions, such as doctors and lawyers. After graduation, however, were disappointed, as teaching did not meet their expectations. The teachers mainly got help from senior teachers, and to some extent head teachers, but hardly any from teachers' centres or resource units. This help was not always useful, however, because of how it was organized and delivered. Furthermore, as there was no formal induction support and few



opportunities to casually chat with senior teachers or head teachers, the NQTs were concerned with how they could get advice without coming across as ignorant.

The arrangement in place was that any NQTs in need were supposed to approach senior teachers and head teachers, and their deputies for help. However, the NQTs interviewed seemed reluctant to ask for help because it might be perceived as a sign of weakness. The induction process had not been well established in the schools visited. There appeared to be no well-drawn programme of induction for the NQTs and there was nobody directly responsible for monitoring the progress of the NQTs. (Indoshi, 2003, pp. 481–482)

Indoshi (2003) recommends a more comprehensive, formalized induction phase, with one person at each school in charge to coordinate the induction. The needs of the NQTs should be at the centre of attention, but as these may vary, local conditions should be taken into consideration. Possible topics include school organisation, curriculum, teaching methods, student discipline, interpersonal relationships, and school rules and regulations, which could be discussed face-to-face, demonstration, or literature, but lectures, which are common in PRESET.

8.4. Teacher Education and 21st Century Skills in Kenya

Table 7 provides an overview of the use of certain key terms in the revised Kenyan documents.

Table 7. Key terms in Kenyan research documents

Search terms	Bunyi et al., 2011	Indoshi, 2003	Total
21 st century skills*	0	0	0
critical thinking*	0	0	0
problem solving*	4	0	4
independent thinking*	0	0	0
active learning*	1	0	1
ICT	3	0	3
learner-centred*	10	0	10

* And related terms

8.5. Policy Documents

The website of Kenya’s Ministry of Education lists 278 files on its download webpage³², including 22 policy documents. Only those policy documents that are pertinent to this review have been described below, except one on special needs education labeled “final draft”:

- Education Sector Report FY 2013/14–2015/16
- Sessional Paper no. 1 2005 on a Policy Framework for Education, Training and Research

³² education.go.ke/index.php/downloads



- National Education Sector Plan - Volume One: Basic Education Programme Rationale And Approach
- National Education Sector Plan - Volume Two: Operational Plan
- The National Special Needs Education Policy Framework, 2009 [Final Draft]
- Early Childhood Development Service Standard Guidelines For Kenya, 2006

Kenya Institute for Curriculum Development (KICD, kicd.ac.ke) is in charge of the curriculum development and research and provides two policy documents (and some drafts) on its website, but not the curriculum itself:

- Basic Education Curriculum Framework
- National Curriculum Policy

Table 8 provides an overview of the use of certain key terms in the policy documents and the senior high school syllabi.

Table 8. Key terms in Kenyan policy documents

Search terms	ESR	PFETR	ECD	NESP (vol. I)	NESP (vol. II)	BECF	NCP	Total
21 st century skills*	0	0	0	7	5	14	3	29
critical thinking*	0	0	0	1	2	36	2	41
problem solving*		0	0	1	2	78	1	82
independent thinking*	0	0	0	0	0	0	0	0
active learning*	0	0	0	0	0	2	0	2
ICT	40	39	3	138	47	27	5	299
learner-centred*	0	2	4	1	1	4	1	13

* And related terms

8.5.1. The Education Sector Report

The Education Sector Report (ESR)³³ describes strategic objectives, past performance, priorities, financial plans, and emerging challenges in the education sector. The report reiterates the need for developing skills and knowledge of its people: “The government recognizes that Kenya’s main potential is in its people; their creativity, education, and entrepreneurial skills” (p. 12). There is little reference to more specific skills, apart from adult literacy and ICT competence. A section is dedicated to *life skills education*, however, which encompasses exploring attitudes, feelings, opinions and values in order to develop psychosocial competencies and manage challenges in life generally. The appropriate methodology for life skills is interactive, as opposed to a knowledge transmission model.

ICT infrastructure and skills are referenced throughout the document, and it clearly a major focus of the Ministry of Education and Government of Kenya, with reference to the ICT goals in country’s Vision 2030. Both the primary and secondary teacher training curricula were reviewed to include the integration of ICT education during the period covered by this report. Secondary schools and other higher institutions should be supplied with ICT equipment, and ICT should be

³³ education.go.ke/index.php/downloads/file/95-education-sector-report-fy-2013-14



mainstreamed. The only specific reference to the use of ICT for teaching and learning is the following sentence, listed as one of 20 recommendations: “Enhance capacity of teachers in curriculum delivery by incorporating ICT in their teaching methods” (p. 118).

8.5.2. Policy Framework for Education, Training and Research

The Sessional Paper on a Policy Framework for Education, Training and Research (PFETR)³⁴ gives an account of the macroeconomic context as well as the philosophy and objectives of education. The policy framework also covers more practical aspects, such as equity, quality, management, teacher development, and research, as well as a chapter dedicated to ICT. The chapter on philosophy and objectives stresses a number of core values, including lifelong learning and quality, the latter in “order to meet the demands for the 21st century” (p. 27). While the vision is broad, there is less detailed information on how quality education will translate into practice. One of the few instances of more specific references to skills, is the following: “To improve the quality of all aspects of education and training so that recognized and measurable learning outcomes are achieved, especially in literacy, numeracy and essential life-skills relevant to the world of work by 2010” (p. 29).

According to the sessional paper, the Government of Kenya considers ICT literacy foundational to the knowledge economy, and sees education as the platform from where to develop people’s ICT skills, and from where these skills will be disseminated into the wider society. The paper outlines a number of steps in order to achieve this, including technical and infrastructure solutions, capacity building, regulations, and partnerships. ICT is also heralded as a great potential for classroom pedagogy:

Its use will provide new opportunities for teaching and learning, including, offering opportunity for more student centered teaching, opportunity to reach more learners, greater opportunity for teacher-to-teacher, and student-to-student communication and collaboration, greater opportunities for multiple technologies delivered by teachers, creating greater enthusiasm for learning amongst students, and offering access to a wider range of courses. (p. 80)

8.5.3. Early Childhood Development Service Standard Guidelines For Kenya

The Early Childhood Development Service Standard Guidelines For Kenya provides information on services and standards for children aged 0 to 8 years, and the management, supervision, and accountability of the programs in place for these children. There are few references to skills apart from physiological development. The document states that the Early Childhood Development (ECD) Centre Curriculum a child-centred teaching method should be used at ECD centres and that ICT should be employed at these centres.

³⁴ education.go.ke/index.php/downloads/file/94-sessional-paper-19th-june-with-nqf-1



8.5.4. National Education Sector Plan – Volumes I and II

The National Education Sector Plan - Volume I: Basic Education Programme Rationale And Approach 2013–2018 (NESP Vol. I)³⁵ was published in 2015. It is one of the most comprehensive of the reviewed documents from Kenya, and it includes the most references to higher order skills. Key goals by 2030 include the implementation of an integrated curriculum framework for basic education that “enables learning oriented to creativity, practicability and productivity through a strong literacy and numeracy base [and] is based on 21st century pedagogies that stimulate the intellectual and practical qualities of all learners” (p. 3). The document describes further plans on commissioning a review of the basic education curriculum by 2014, which covers pre-primary, primary, and secondary education, listing the following expected outcomes: “Literacy, numeracy, and enquiry skills, thinking skills, communication skills, observation and investigative skills, application and transferable skills, social and ethical skills and entrepreneurial skills” (p. 21). The required reforms to develop the curriculum should also seek to develop independent learners who are “valuable resources in themselves” (p. 25). The review of the basic education curriculum was announced by the KICD in a press release, starting with the needs assessment for the new curriculum (KICD, 2014), while the main review process started the following year (The Standard, 2016), and is scheduled to be implemented in 2017 (Oduor, 2016).

NESP Vol. I underlines the need for both teachers and students to adapt to the requirements of the new century, proposing that teachers “acquire innovative approaches in the pedagogy to enable learners to cope with the dynamics of the 21st century” (p. 88). In a later passage, the skills included in this concept are listed as follows: “The 21st century learning skills include: critical thinking, creativity, communication, collaboration, ICT literacy, and innovation skills to effectively function in a knowledge-based economy” (p. 96).

Higher order skills are not just a matter for the students’ learning. The document relates how the Certificate of Primary Education (CPE) examination was updated in response to complaints that the primary leaving examination test items did not include higher order thinking skills and hence promoted rote learning. The new CPE includes essay and comprehension test items, which reflect these advanced skills, and the nature of the new test items brought to teachers through the Kenya National Examinations Council newsletter.

Life skills is a set of skills on a par with numeracy and literacy, as well as one of the 12 subjects in primary education, and a necessary part to achieve quality education, according to NESP Vol. I. Despite this importance attributed to life skills, the subject is only taught in a few primary schools due to lack of teacher training and the fact that this is not an examinable subject.

The NESP makes it clear in the beginning of the document that technology can and should enhance pedagogy, stressing “the fundamental place of pedagogy in lifting and maintaining quality of learning. This policy pillar establishes the place of technology as a powerful support to pedagogy but not the determinant of pedagogy” (p. 2). Great ambitions notwithstanding, there are a number of issues constraining and limiting ICT in education, including the integration of ICT into pedagogy and teaching training, connectivity, infrastructure, and digital content, among others.

The second volume of NESP is the operational plan. It was published in 2015 but covers the years 2013–2018. This volume restates many of the goals and principles set forth in the first

³⁵ education.go.ke/index.php/downloads/file/83-national-education-sector-plan-volume-one-basic-education-programme-rationale-and-approach



volume regarding higher order skills. The most notable addition in volume II in this regard is the focus on skills in secondary schools and the role of assessment:

A major pedagogical challenge for secondary education is to discover new ways of ‘knowing’, and of ‘learning how to learn’. Students learn most effectively when they understand what they are learning, why they are learning it, and how they will be able to use their new learning and build further learning from it. While knowledge transmission will continue to be of central importance to classroom practice, secondary schools must also provide students with the skill requirements of the fast- changing world - critical thinking, communication, problem solving etc - thus adopting pedagogies that are learner-centred. Know what students have learned through effective assessment instruments is an important aspect of this challenge. (p. 69)

In order to achieve this goal, NESP Vol. II states that as part of the curriculum review, KICD will point out key competencies as well as expected learning outcomes in each subject. This will aid both the examination process and teacher development. There is no mention of whether or how these skills are relevant at the primary level, or if there are any equivalent skill requirements at this level.

8.5.5. Basic Education Curriculum Framework

The Basic Education Curriculum Framework (BECF) describes the goals, competencies, and subject-by-subject outline of pre-primary, primary, and secondary education in Kenya. The document includes the most comprehensive outline of the theories and principles that underpin the educational system, with sections on instructional design theory, visible learning theory, and six constructivist theories (Dewey, Vygotsky, Gardner, Piaget, Bruner, and Erikson). The core competencies for basic education are (p. 21):

1. Communication and collaboration
2. Self-efficacy
3. Critical thinking and problem solving
4. Creativity and imagination
5. Citizenship
6. Digital literacy
7. Learning to learn

Each of these points is then described in half a page, both in more general terms in how teachers might seek to develop these competencies in practice. Among the reviewed documents, the only explicit reference to what critical thinking might look like in practice, is depicted in the following excerpt:

Critical thinking and problem solving will be developed through age appropriate activities and programmes in the school curriculum. For example, at pre-primary school level learners can be asked to come up with the best ways of using and keeping their books, stationery and other personal items safe. At the other end of the basic education spectrum, learners can be asked to come up with the best ways of addressing the challenge of scarce resources such as water in the school and community. (p. 24)



The only reference to digital literacy in the reviewed documents is also in the BECF, which is also one of the core competencies, and has been allotted a description of about 350 words. This description includes the ability to use a range of devices, awareness of issues that arise through new media, and flexibility to adapt to developments and software.

Although the BECF does not use the expression *independent learning*, there are several references to the value of learning independently, which is also theorized with reference to Vygotsky, as a children develop by becoming gradually less dependent on adults. *Entrepreneurship* is also referenced, but unlike the other reviewed documents, the BECF discusses this term not just with reference to vocational training, but also more generally, notably under the heading “Community Service Learning” (p. 70).

The BECF also refers to learner-centred methods and associates these with skills such as thinking, problem-solving, evaluating, and generating hypotheses. Related terms, such as active learning, are also part of the constructivist paradigm that the document heavily draws on: “Constructivism has many varieties such as active learning (...), but all versions promote a student’s free exploration within a given framework or structure in order to meet the challenges of 21st century learning” (p. 61)”.

8.5.6. National Curriculum Policy

The National Curriculum Policy (NCP) is a relatively short document that outlines the goals, background, policies and strategies in key areas, mostly in bullet points. One chapter outlines the establishment of a competency-based curriculum, which is seen as learner-centred and flexible. The chapter on pedagogical approaches lists two policies, including, “Enhance pedagogical approaches that support creativity, innovation, critical thinking and sustainable development” (p. 17). Following this is a list of seven strategies for implementing this policy, which focus on pre-service and in-service teacher training in various forms. Developing ICT-based resources are also one of these strategies seven strategies.

8.6. Kenya: Lesson Learnt and Concluding Remarks

Education in Kenya has gone through considerable changes in the last decades. In spite of strong government support for education, teacher education does not meet expectations, the review of the literature suggests. A stronger teacher education with focus on quality is needed. Similarly, the induction phase for new teachers should also be strengthened. The induction phase might benefit from a more formalized structure, but how this should be done in practice requires more research, and local conditions should be considered since there are often differences between schools and regions.

Kenya ranks highest among the six countries in terms of GDP per capita (International Monetary Fund, 2016), and is the most technologically advanced on the continent (Africa Ranking, n.d.). This might contribute to explaining Kenya’s relatively strong web presence as well as the detail of some of its policy documents. Nevertheless, there is considerable variation between the policy documents. The national curriculum itself has not been included in this review since it is not available online.

Some of the documents, notably the *Education Sector Report*, *Early Childhood Development Service Standard Guidelines For Kenya*, and *National Curriculum Policy*, offer little information about 21st century skills or related topics apart from some very brief passages. The first of these



documents elaborates somewhat more in ICT, but less so than other documents. Another document, the sessional paper *Policy Framework for Education, Training and Research*, makes reference to the demands of the 21st century as well as ways of improving quality education, particularly through ICT.

The documents that provide the most detail on 21st century skills, however, are the *National Education Sector Plan* (Vols. I and II) and the *Basic Education Curriculum Framework*. Both focus on a broad set of skills and the need to adapt to the demands and requirements of a changing workforce, and the importance of education and skills for personal growth and development. The NESP, together with the Education Sector Report, is the strongest advocate for using ICT not just for the sake of developing ICT skills or making more information available, but also integrating ICT and pedagogy. The *Basic Education Curriculum Framework* is the most recent document (2017), and the only document to provide a substantial theoretical justification and academic references. It also includes the most substantial description of 21st century skills, both in general terms and in conjunction with the school subjects.



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9: Liberia

9.1. Introduction

Liberia has a population of 4.5 million people. English is the official language, and it is spoken by 20 percent of the population. Some 20 other languages are also spoken in the country (Theodora, 2017). Liberia was founded by freed African-American slaves, and unlike many other African countries, the language policy has strongly favoured English, with little use of African languages in Education (Bamgbose, n.d.). The Liberia Education Sector Plan (see below) describes the development of a bilingual curriculum in kindergarten and for the first year of primary, followed by four years of combining English and students L1.



Education in Liberia is deeply influenced by the civil war that ravaged the country for almost 20 years, during which many schools were shut down and government services and the infrastructure suffered greatly. The civil war turned the country into one of the least developed in the world, ranking 177 out of 188 on the Human Development Index (UNDP, 2016). The GDP per capita is one of the lowest in Africa, and the lowest of the six countries in this review (International Monetary Fund, 2016). During the Ebola outbreak schools were closed from August 2015 to the beginning of 2015, and many schools were used as make-shift hospitals (FHI 360, 2015). Literacy rates are also very low, particularly for rural women, whose literacy rate is at 26 per cent, compared to 60 per cent for urban women. The numbers for men are 60 per cent and 86 per cent for rural and urban men, respectively (Ministry of Gender and Development, 2009), and men greatly outnumber women in the formal economy. However, since the civil war Liberia has made great progress in all areas of civil society, including education.

After the three civil wars, which raged between 1989 and 2003, free and compulsory primary education was reintroduced, and the three rural teacher training institutes (TTIs) were revived in 2006 and 2010 with the assistance of USAID, which has been central in the upgrading of the education system after the conflict. The TTIs had stopped training teachers for most of this period of unrest and the country's infrastructure was destroyed (FHI 360, n.d.-a).

9.2. The Education System

As of the New Education Act of 2011, Liberia offers two years of early childhood education, six years of primary education, three years of lower secondary education, and three years of senior secondary education or three years of technical or vocational education. There is also an option for technical and vocational education for students who have completed grade 6 but not carried on with secondary education.

Male teachers constitute 83 per cent of the total teacher workforce, and dominate all levels, from early childhood to secondary schools. The number of female teachers drops in the higher levels, from 40 per cent in early childhood, via 12 per cent in primary school, to a mere 5 per



cent in secondary school (see Figure 3). The government is working to change this, however, through incentives and attention to gender in teacher training programs (UNESCO, 2014).

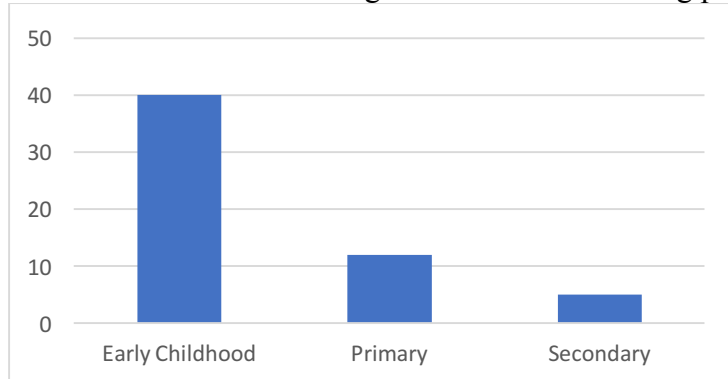


Figure 3. Percentage of female teachers in Liberian schools.

9.3. Pre-Service Teacher Education

Before the civil war, Liberia operated an 18-month teacher training for primary teachers. However, to meet the high demand of teachers, a one-year (nine months) program for primary school teachers was introduced in order to quickly address the lack of qualified teachers. There are plans of expanding this to 18 months and privatizing this training (UNESCO, 2014). Secondary school teacher programs take two years, but the program for junior secondary school teachers first came into effect in 2016 (Abban, 2016). There are also Bachelor and Master's degrees in education, which allow students to teach at any grade level, depending on their specialization, and also train TTI tutors (see Table 9) (UNESCO, 2014).

Table 9. Overview of teacher training in Liberia

Program	Duration	Education requirements	Preparation for	Providing institution
C-certificate	9 months	High school diploma/WAEC certificate	Primary level	TTIs
B-certificate	18 months	High school diploma/WAEC certificate	Junior secondary	TTIs
A-certificate	18 months	High school diploma/WAEC certificate	Senior secondary	Universities or TTIs
Bachelor's degree in education	4 years	High school diploma/WAEC certificate	All grade levels (depending on area of concentration)	Universities or TTIs
Master's degree in education	3 years	Bachelor's degree	All grade levels (depending on	University of Liberia and



			area of concentration)	Cuttington University
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Sources: UNESCO, 2014 and Abban, 2016.

Female teachers are currently underrepresented, and the government encourages women to apply for teacher education programs. This included paying female teacher candidates at TTIs a monthly allowance of USD 20 to encourage their completion of the program, as well as extra tutoring in addition to what is offered to all students. Although female participation in teacher education has improved, in 2012 only 15 per cent of TTI graduates were women (FHI 360, n.d.-a), which suggests that increasing the number of female teacher candidates requires more effort and attention.

9.4. In-Service Teacher Training

As part of the recovery process after the civil war, the Liberia Teacher Training Program (LTTP), with funding from USAID, has led a reading and math intervention in that started in the middle of the 2011–2012 school year (RTI International & FHI 360, 2013). Building on the work of EGRA Plus, a pilot project started in 2008, the LTTP intervention trained teachers in 790 schools in the four most populous counties in Liberia following a rigorous research design with baseline testing and control schools. Teachers in grade 1, 2, and 3 were trained in using scripted lesson plans aligned with the Liberian curriculum for each grade, and received letter cards, pocket charts, and a one copy of these for each semester. The students received a textbook in reading and math, and the schools were equipped with 50 book titles per grade to be kept in their reading rooms.

The teachers were trained for two weeks, and one coach was assigned to every 12 schools. The coaches visited each school once every month, and followed a systematized coaching model, with a stronger focus on reading than mathematics. Coaching as method has been used in several recent USAID-funded interventions, including Kenya (Piper & Zuilkowski, 2015) and Malawi (Sailors et al., 2014; see also JBS International, 2014b for a review on coaching).

The midterm assessment of the LTTP intervention shows that students who benefitted from the reading program performed better in all the skills areas tested compared to students in the same grades before the intervention, and better than the students in the control group. The improvements in math were not as strong, but this is likely due to the fact that the math intervention had only lasted five months because of a delay, compared to 16 months of the reading intervention.

9.5. Teacher Education and 21st Century skills in Liberia

Table 10 provides an overview of the use of certain key terms in the revised Liberian documents.

Table 10. Key terms in Liberian research documents

Search terms	FHI 360, n.d.-a	Piper & Korda, 2010	RTI International & FHI 360, 2013	UNESCO, 2014	Total
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21 st century skills*	0	0	0	1	1
critical thinking*	0	0	0	0	0
problem solving*	0	1	0	0	1
independent thinking*	0	0	0	0	0
active learning*	0	0	0	0	0
ICT	5	0	0	77	82
learner-centred*	0	2	0	0	2

* And related terms

9.6. Policy Documents

The official online portal of the Government of Liberia (micat.gov.lr), hosted by the Ministry of Information, contains few documents, none of which are about education. The website of the Ministry of Education contains information on scholarships, vacancies, and news, but no policy documents. The Office of the President – the Executive Mansion website (emansion.gov.lr) lists several press releases on education and job posting on curriculum and instructional design, but no educational documents. The Education Sector Plan of Liberia (ESPoL) is developed with support from Global Partnership for Education, and this NGO’s website hosts this document, which does not appear to be available anywhere else and is not dated, but appears to have been published in 2014 based on the dates used in the document. Similarly, Liberia United Methodist Church has re-hosted the national curriculum, which is divided into 22 sections by subject and level.

Table 11 provides an overview of the use of certain key terms in the Education Sector Plan and the syllabi.

Table 11. Key terms in Liberian policy documents

Search terms	ESPoL	Syllabi	Total
21 st century skills*	1	0	1
critical thinking*	1	6	7
problem solving*	1	29	30
independent thinking*	0	0	0
active learning*	0	0	0
ICT	3	0	3
learner-centred*	1	5	6

* And related terms

9.6.1. Education Sector Plan

The Education Sector Plan of Liberia (ESPoL)³⁶ consists of 12 chapters, starting with three introductory chapters, followed by one chapter per level of education: pre-primary; primary; secondary; TVET and adult education; teacher education; higher education, and ending with three chapters on administrative and financial topics. The word “quality” appears in three of the headings, including primary and secondary education, and is used a total of 300 times in the whole document, indicating that this is a high priority.

How this focus on quality relates to specific skills receives less attention. The ESPoL describes the revised curriculum as including critical thinking (along with HIV/AIDS education, peace education and human rights), in accordance with the requirements of the West African Examinations Council. There are few references to skills or content at the pre-primary level, but one phrase is restated three times (with some variation), which to some extent addresses these issues: “Improve the quality of the curriculum in use to reflect play based, child centered , [sic] multi- lingual learning, (using the children’s home language), based on indigenous practices and informed by sound principles of child development of children from 0 – 5” (p. 45).

At the primary school level there is also a focus on quality, but few references to skills. Life skills as a subject is discussed as an avenue for introducing topics like health and reproduction, but materials and training are yet to be provided. The Ministry of Education supports child-friendly schools, a model developed by UNICEF (2009), one of the key partners in developing the ESPoL. The notion of child-friendly schools is based on the principles of child-centeredness, inclusiveness, and democratic participation.

With regards to secondary education, the ESPoL cites the Education Law, including the phrase “help students to become problem-solvers, develop independence and assume responsibility as members of the Liberian Society” (p. 88). Apart from this, under the heading “Actions to improve secondary education”, the policy document states:

Utilizing lessons learned from other countries and best practices, ensure that curriculum includes elements of relevant technical/vocational skills training as well as entrepreneurial and life skills needed by those who may not be moving to the next level while providing the foundation for those who may wish to pursue TVET at a higher level. (p. 100)

In higher education, the only mention of skills or topics germane to this review is the reference to improving ICT infrastructure, which is mentioned three times in table cells, but not in the body of the text. There is no mention of ICT for any other levels, or any skills or usage of technology in education.

9.6.2. National Curriculum

The national curriculum³⁷ from 2011 consists of 22 documents (syllabi), which cover grades 1–6, 7–9, and 10–12, although with the exception of *Math*, no subject is taught in all 12 grades.

³⁶ globalpartnership.org/content/liberia-education-sector-plan

³⁷ liberiaunitedmethodistchurch.org/ministries/generaleducationandministry/liberia-national-curriculum



For this review six core subjects (eight curricula) have been selected, all of which are likely to be particularly relevant with respect to higher order skills:

- Language Arts (1–6, 7–9)
- English (10–12)
- Literature (10–12)
- Social Studies (1–6, 7–9)
- Science (1–6)
- General Science (7–9)

The subject syllabi are very similar in their structure, starting with a message from the Minister of Education. Some are followed by a brief introduction of the subject in question, while five of the eight reviewed syllabi include the following paragraph in their introduction:

A student-centred approach is emphasized in this curriculum. This is based on the firm belief that learning becomes more permanent, meaningful, and exciting when students themselves take ownership of the learning process. Teachers are, therefore, urged to contrive those classroom strategies that would engage students actively in the teaching/learning process. (p. 3 in multiple documents)

Each syllabus has a list of general and/or specific objectives, and in some cases also intended learning outcomes and/or topics, all in numbered lists. Objectives typically start with some of the following words: “describe”, “identify”, “state”, “write”, “recognize”, or “read”. The remaining part of each document is made up of tables, that outline the outcomes, contents, activities, materials/resources, and how the evaluation of the students is to be conducted, all in short sentences or bullet points.

Apart from the above block quote, there are only a few references to higher order skills, specifically critical thinking. In *Literature* (10–12) this skill is stated in the introduction, before the above quote, while in *English* (10–12) and *Social Studies* (1–6), it is one of the outcomes: “Develop the ability to think critically and make meaningful suggestions or recommendations” (Social Studies 1–6, p. 52). There is no mention of ICT in any of the syllabi. However, the word “discuss” is widely used throughout, a bit more than once per page on average.

9.7. Liberia: Lesson Learnt and Concluding Remarks

Considering that Liberia is recovering from a civil war, the country is making much progress. Challenges abound, however. The pre-war teacher training program that lasted two years has been reduced to one in order to meet the high demand for teachers. This is seen to be a necessary step and a short-term solution for filling the many vacancies in schools around the country. The coaching of teachers introduced in Liberia is an increasingly popular approach, and researchers involved in using coaching in Liberia (and elsewhere) report positive results. Similarly, training teachers in following scripted lesson plans is reported to increase literacy levels in students (RTI International & FHI 360, 2013). This is an important finding, although the question of how scripted lessons compare to other methods is not clear.

Among the countries included in this review, Liberia has the fewest documents available. No policy documents were available from Government sources online – but fortunately they could be accessed through other sources. By the same token, the documents that were available



contained less information about higher order skills, or skills in general, than the other three countries. Some of the syllabi did include a message to teachers about meaningfully engaging students through learner-centred teaching, but this was not repeated, and did not otherwise seem to influence the specific topics of the syllabi. Many syllabi did include the word “discuss” which might be seen as carrying some of the meaning associated with higher order thinking skills (e.g., Kugelman, n.d.).

10: Sierra Leone

10.1. Introduction

Like its neighbour Liberia, Sierra Leone was affected by a civil war that damaged its social, economic, and physical infrastructure, including the education system. Between 1991 and 2002, fifty thousand people lost their lives in a country of four million people in 2000 (now 6.5 million) (World Bank, 2016b). Sierra Leone ranks 179 out of 188 on the human development index (UNDP, 2016), and the literacy rates are among the lowest in the world. Like Liberia, however, thanks to considerable government commitment, Sierra Leone has made tremendous progress in rebuilding its country, restoring security and basic services, including education. Damaged and destroyed schools have been repaired and rebuilt, and student enrolment has had an unprecedented surge. In 2001 the Free Primary Education Policy was introduced, leading to a doubling of enrolment in primary schools within three years, as well as significant increases in both junior and senior secondary schools. School fees for girls in the poorer Northern and Eastern regions have also been abolished (World Bank, 2007). Basic education (primary and junior secondary) became compulsory in 2004, but the shortage of teachers contribute to making this goal a major challenge, with a current student–teacher ratio of 66:1 (Hinton, 2009).



10.2. Pre-Service and In-Service Teacher Education

Since 2006/7 admission to teacher education in different programs has been increasing rapidly, with an average annual growth rate of almost 20 per cent in a five-year period, although this rate is slowly waning (Pôle de Dakar, 2013). In 2014 the Ebola virus outbreak led to the declaration of a state of emergency in July 2014, which meant a ban on public gatherings and the closure of schools, including teacher training programs (UNICEF, 2014).

There are three types of institutions that deliver teacher education for primary and secondary schools: two teacher training colleges, three polytechnics, and two public universities, which are spread across the four regions of the country. This includes both PRESET and INSET, and lecture-based as well as distance education courses (Pôle de Dakar, 2013). Most teacher education programs takes one or three years, depending whether the candidate has completed senior secondary school. In addition, Bachelor, Master, and PhD degrees are available for teaching in the higher levels of the education system (see Table 12).

Table 12. Teacher education programs in Sierra Leone

Qualification	Entry requirements (simplified)	Duration (years)	Training institutions	Target levels
Teacher's certificate (TC)	Senior secondary school (SSS)	1	Teacher colleges and polytechnics	Pre-primary and primary 1–6
Higher teachers certificate (HTC) (primary)	Junior secondary school or TC + 3 years of teaching	3	Teacher colleges and polytechnics	Head and specialist subjects in primary
Higher teachers certificate (HTC) (secondary)	Junior secondary school or TC + 3 years of teaching	3	Teacher colleges and polytechnics	Junior secondary school (JSS)
Bachelor of Education	Junior secondary school	4	Teacher colleges and polytechnics	JSS, SSS, TVET, colleges, and polytechnics
Post-graduate diploma in education	A university first degree	1	Universities	Higher TVET, colleges, and polytechnics
Master's degree in education	A university first degree and teaching experience	1	Universities	Higher TVET, colleges, and polytechnics
PhD	1 st class honor's degree or a Master's degree	3	Universities	Polytechnics and universities

Sources: World Bank, 2007 and Pôle de Dakar, 2013.

10.3. Girls and Traumatized Students

There is a culture of preferring to educate boys rather than girls in Sierra Leone, and 36 per cent of girls do not attend school. Those who do seldom continue to secondary education (WE Charity, 2017), which most families discourage, since girls are expected to marry in early adolescence and have children (McDermott & Allen, 2015). This creates a ripple effect for higher education, including teacher education, leading to a shortage of female teachers who can support and act as role models for female students.

The civil war caused great traumatic stress in many students, which places great demands on teachers to deal with strong emotions and traumatic stress reactions, such as lack of concentration and flashbacks (Gupta & Zimmer, 2008). Violence against children is prevalent in and out of school, and girls are particularly vulnerable. A report on school-related gender-based violence showed that 90 per cent of students have suffered at least one form of physical violence, and psychological violence is also common. Girls in particular are subject to sexual violence, including rape, on a large scale (Concern Worldwide, Catholic Relief Services Sierra Leone Program, IBIS, & Plan Sierra Leone, 2010). Although teachers are the main perpetrators of sexual abuse (Concern Worldwide et al., 2010), they are also integral in helping students overcome the trauma they have experienced:



While extensive individual therapy for youth may be inappropriate or prohibitively expensive, intensive short-term teacher training could give teachers skills in handling sensitive topics with students in the classroom. Such training might also help teachers to instruct students in concrete strategies to deal with frustration, stress, and anger. (Betancourt, Simmons, Borisova, Brewer, Iweala, & de la Soudière, 2008)

10.4. The Diagnostic Teaching Model

One of the few available research articles on teachers in Sierra Leone available is a study on the introduction of the education project *the Diagnostic Teaching Model* (DTM), which has been developed by the International Reading Association (now International Literacy Association) and successfully used in teacher education projects in several African countries. The DTM is used in literacy education with an emphasis on student-centered, interactive and meaning-centered instruction. In this project, DTM was used as the curriculum for the reading and writing methods (McDermott & Allen, 2015) by working with master trainers. Although information on the long-term effects of the program is not available, the master trainers' perception of reading and writing improved, as did their enthusiasm to improve literacy teaching. The workshops that the master trainers organized in rural schools were well received, and activities that connected their social and cultural experiences helped produce engaging learning activities.

10.5. Teacher Education and 21st Century Skills in Sierra Leone

Table 13 provides an overview of the use of certain key terms in the revised Sierra Leonean documents.

Table 13. Key terms in Sierra Leonean research documents

Search terms	Betancourt et al., 2008	Hinton, 2009	McDermott & Allen, 2015	Pôle de Dakar, 2013	UNICEF, 2014	World Bank, 2014	Total
21 st century skills*	0	0	0	0	0	0	0
critical thinking*	0	0	1	0	1	0	2
problem solving*	0	0	0	1	0	0	1
independent thinking*	0	0	0	0	0	0	0
active learning*	0	0	1	0	1	0	2
ICT	0	0	0	0	4	0	4
learner-centred*	0	0	1	1	0	0	2

* And related terms

10.6. Policy Documents

The website of the government of Sierra Leone is not available at the time of writing, so documents that would otherwise be available online are not accessible.³⁸ However, Global Partnership for Education hosts the Education Sector Plan of Sierra Leone (ESPoSL), which is called “Learning to Succeed”, and covers the period 2014–2018. Table 14 provides an overview of the use of certain key terms in the ESPoSL.

Table 14. Key terms in the available Sierra Leonean policy document

Search terms	ESPoSL	Total
21 st century skills*	0	0
critical thinking*	0	0
problem solving*	0	0
independent thinking*	0	0
active learning*	0	0
ICT	8	8
learner-centred*	1	1

* And related terms

10.6.1. Education Sector Plan

The ESPoSL describes the education system in Sierra Leone and outlines the goals regarding access, equity, and completion. It also discusses how the education system can be strengthened and the costs associated with implementing the education sector plan. The document has very little information regarding 21st century skills. The document mentions child-centred learning in the context of curriculum development, which is an on-going process:

Revisions were also made to the primary school curriculum, based on thematic areas of emerging issues, child-centred teaching techniques, reading and child-friendly schooling. The development of a new curriculum framework for basic education is underway. (ESPoSL, p. 37)

10.7. Sierra Leone: Key Findings and Concluding Remarks

Sierra Leone is recovering from both a civil war and the Ebola virus outbreak. Even though the civil war is over, it has traumatized students and is probably contributing to the sexual and other forms of violence many students, particularly girls, face. Despite these difficulties, Sierra Leone enrolment rates are very high, and the Diagnostic Teaching Model is showing promising results. The only policy document available indicates that a new curriculum for basic education is being developed, and child-centred methods have already been introduced.

³⁸ <http://www.education.gov.sl/>



11: Tanzania

11.1. Introduction

Tanzania was one of the first countries in sub-Saharan Africa to reach nearly universal primary education in the 1980s under Nyerere's slogan of education for self-reliance, when school fees were also abolished (Hardman et al., 2011). When school fees were re-introduced in the mid-1980s in order to cut government spending, enrolment dropped to 60 per cent. In the 2000s, new initiatives were introduced to expand primary and secondary schooling, as well as the quality of teaching and teacher training. From 2001 to 2009, enrolment in primary school almost doubled, which required plans to prepare for the expansion of secondary schools and teacher education (Bhalalusesa et al., 2011).



11.2. Pre-Service Teacher Education and Training for Primary School

Junior secondary school leavers can take a course to become Grade A teachers, which qualifies them to teach in primary schools (Bhalalusesa et al., 2011). This was changed from one year of courses plus one year of on-the-job training, to two years of residential training at a teacher training college (TTC). In 2015 this certificate course was turned into the more advanced diploma program, which was previously offered after completion of upper secondary or a certificate in primary school teaching. However, after two years the diploma was dropped, and the TTCs reverted to offering the certificate course (Sam Andema, personal communication).

The TTC curriculum consists of a theoretical part taught at the TTC, and a practical component where the student teachers go to a placement school for their practicum at the end of each year (Bhalalusesa et al., 2011). The theoretical part consists of subject content, pedagogical content (or methods courses), and professional studies, which includes psychology and other areas, but there is no specific course on literacy instruction. The subject content is similar to that of secondary school, but is taught in Kiswahili, which is the language of instruction in primary schools. However, not all students speak Kiswahili when they enter primary school, particularly students from some rural communities. The TTCs are government funded, but also charge school fees (Sam Andema, personal communication). Some TTCs have computer labs and ICT is taught, but it does “not seem to translate into any meaningful practical integration of ICT in teaching and learning due to the manly theoretical nature of teacher training” (Sam Andema, personal communication). The kind of ICT they teach is expected to help the teacher candidates deliver content, not to teach students how to use computers.

The student teachers have to pass a national examination in order to graduate, and passing the examination becomes the criterion for the successful teaching of the teacher educators. This examination covers both subject and pedagogical knowledge across the whole curriculum, but is very theoretical in nature. The large scope of the examination places pressure on the teacher



educators, who often resort to transmission teaching in order to cover all areas, with lectures, independent reading, and demonstration as the main forms of teaching. Large class sizes of student teachers also restricts the teacher educators' opportunities for forming groups and other forms of teaching (Bhalalusesa et al., 2011). What the teacher candidates learn about assessment of students is similarly theoretical and fact-driven, and although they may be aware of more diverse and meaningful ways of continuous assessment and focus on competencies, not facts, in practice they tend to revert to the teaching and assessment practices they experienced themselves as students (Sam Andema, personal communication).

While the policies and curriculum emphasise the need to teachers to be dynamic, creative, innovative, and learner-centred, these documents do not make it clear how teachers can live up to these ideals in their teaching. This disconnect between educational policy, professional practice, theory, and research is the single most important problem in teacher education, and by extension all education, since an education system is only as good as its teachers (see also Chapter 5.1). Problem-solving, critical thinking, active learning, formative assessment, and other skills are often valued, but lack of understanding as to how they translate into practice will make them hard to implement (Sam Andema, personal communication).

11.3. Pre-Service Teacher Education and Training for Secondary School

Teaching in secondary schools requires upper secondary school and a diploma, while B.Ed. courses are also available, which qualifies students to teach advanced secondary school courses and teach at TTCs. There are 34 government and 43 non-government colleges that offer teacher training. At the end each year, a block teaching practice of five weeks takes place, when a tutor visits and fills out an evaluation form. However, the authors remark, "This structure means that practice is disembodied from theory without the opportunity for trainees to discuss their experience back at the TTC with tutors and peers immediately after their training" (Bhalalusesa et al., 2011, p. 13).

During the practicum the student teachers were not allowed to teach lower primary, and hence none of the student teachers got any experience with teaching the lower grades (Bhalalusesa et al., 2011). The student teachers were furthermore largely left to deal with these challenges on their own, with little support from their supervisors. The placement schools did not appear to be designed for student teacher practicum, and a newly introduced teaching approach was used in the placement schools but had not been taught in the TTC. The private TTC sent the student teachers to urban schools, but after graduation most of these student teachers would be sent to schools in rural areas.

11.4. In-Service Education and Training

While there are several courses for teachers who want to upgrade their qualifications, which typically focus on the subject matter, there have been few professional development courses on offer for teachers with a focus on pedagogy (Bhalalusesa et al., 2011). Teacher resource centres were set up in the 1980s, either as buildings attached to TTCs, or as "virtual centres" where teachers would meet and discuss. However, these centres were isolated and poorly coordinated.

The Tanzania Ministry of Education and Vocational Training (MoEVT), with the support of UNICEF, developed an INSET Strategy and Operational Plan based on the Teacher



Development and Management Strategy (TDMS) in 2008 (Hardman et al., 2011). The INSET strategy was an important part of the TDMS, and a baseline study was developed to determine the quality of classroom interaction and the existing INSET, policies, plans, and activities to best inform the TDMS. The findings then resulted in guidelines for the INSET and CPD strategy that were connected to the TDMS.

The baseline findings indicated that more than half the lesson time went to teacher-directed activities (explaining, question and answer, writing on the chalk board, reading to the class, asking pupils to read, lesson summary). Individual student work in exercise books based on assignments written on the blackboard took up one quarter of the time. Activities that were more pupil-centred, such as group or pair work, accounted for 14 per cent, while non-curricular activities amounted to six per cent of the lesson time. There was little variation in classroom interaction, and the opportunities for students to share their ideas were limited.

The baseline further showed that existing INSET was poorly financed and often ad hoc, with little strategic planning and lack of clarity regarding responsibility for teacher employment and professional development. Most INSET was government-supported upgrading of certificates, rather than training that focused on pedagogy through workshops at the schools. Teacher resources centres, intended to serve as venues for INSET, were often not functioning as such, but served as venues for other meetings.

Based on these findings from the baseline, a recommendation for a systemic approach to CPD was put forth, which included (Hardman et al., 2011):

- a national school-based model of INSET delivery with teacher development at the school, classroom and cluster level
- a national framework of teacher competencies for both PRESET and INSET
- an effective CPD framework for use at PRESET and INSET, with flexibility to meet local conditions
- a code of professional conduct and training for teachers
- incentive and accreditation system in support of the implementation of the CPD framework
- a communication strategy to promote and develop understanding of the CPD framework
- a human resource strategy to manage systems at the various levels

The school-based INSET strategy aimed at producing a system where teachers developed a reflective practice through various forms of training, including paper-based, online, and face-to-face meetings with tutors and fellow teachers at cluster meetings. The areas covered include subject and professional knowledge, teaching skills, assessment and evaluation, and professional values and behaviour. Based on experiences from Kenya, reaching all teachers was an important principle for the purpose of achieving equity. Furthermore, teachers who showed themselves to be more effective would be encouraged to take more advanced courses in mentoring, leadership, and management.

11.5. Teacher Education and 21st Century Skills in Tanzania

Table 15 provides an overview of the use of certain key terms in the revised Tanzanian documents.



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Table 15. Key terms in Tanzanian research documents

Search terms	Bhalalusesa et al., 2011	Hardman et al., 2012	Hardman et al., 2015	Total
21 st century skills*	0	0	0	0
critical thinking*	0	0	0	0
problem solving*	4	0	1	5
independent thinking*	0	0	0	0
active learning*	2	0	0	0
ICT	0	0	0	0
learner-centred*	13	4	2	19

* And related terms

11.6. Policy Documents

The Tanzania Government Portal lists 275 files on its download webpage.³⁹ Only the six policy documents that are pertinent to this review have been described below:

- Annual report 2007/8
- Annual report 2008/9
- Annual report 2009/10
- Education Sector Development Programme
- Education in a Global Era: Challenges to Equity, Opportunity for Diversity
- ICT In Education: Situational Analysis

Tanzania's Ministry of Education (www.moe.go.tz) is in charge of the curriculum development and research and provides one policy document on ICT on its website, but not the curriculum itself:

- ICT policy for basic education

Table 16 provides an overview of the use of certain key terms in the policy documents.

Table 16. Key terms in Tanzanian policy documents

Search terms	AR 2007/8	AR 2008/9	AR 2009/10	ESRAM	EGE	ICTESA	ICTPBE	Total
21 st century skills*	0	0	0	0	2	9	0	11
critical thinking*	0	0	0	0	0	0	1	1
problem solving*	0	0	0	0	0	0	1	1

³⁹ <https://tanzania.go.tz/index.php/documents/index>



independent thinking*	0	0	0	0	0	0	0	0
active learning*	0	0	0	0	0	0	0	0
ICT	5	8	5	18	1	508	274	819
learner-centred*	0	0	0	0	3	1	1	5

* And related terms

11.6.1. Annual Reports 2007/8–2009/10

Three annual reports are available through the Tanzania Government Portal.^{40, 41, 42} These documents are very similar in structure, starting with vision and mission statements, and letters from key officials. The annual reports offer an account of audits, investments, investment policies, and other financial matters, but little in terms of actual educational policy.

11.6.2. Education Sector Review Aide Memoire

The Education Sector Review Aide Memoire (ESRAM) provides a summary of the key findings, deliberations and recommendations of the Joint Education Sector Annual review (JESR).⁴³ The JESR is a product of an on-going dialogue between key stakeholders in the education sector, including government and civil society representatives. The ESRAM outlines past achievements, including increased enrolment and infrastructure, but also key issues and challenges facing the education sector, as well as what is needed as Tanzania moves forward. This includes paying attention to quality teacher education with a focus on teachers' capabilities and effectiveness, private public partnerships, increased participation of parents, improved school leadership, and skills development. Regarding *literacy skills*, the document states:

critical need to look at how best to improve the 3Rs [reading, writing, and arithmetic] particularly at the pre and primary levels as the foundation for improved learning skills, establish -specialization [*sic*] in teacher colleges for early grade teaching and in the 3Rs. (ESRAM, p. 6)

The ESRAM does not elaborate on this, and makes no reference to any of the 21st century skills, apart from brief mention of ICT for teacher training, and phrases like “Enhancing the use of ICT in teaching and learning” (ESRAM, p. 54).

11.6.3. Education in a Global Era: Challenges to Equity, Opportunity for Diversity

The Education in a Global Era (EGE) was written by the Ministry of Education for the Fourteenth Conference of Commonwealth Ministers in Halifax, Nova Scotia, in 2000.⁴⁴ The

⁴⁰ https://tanzania.go.tz/egov_uploads/documents/annual_report2007_en.pdf

⁴¹ https://tanzania.go.tz/egov_uploads/documents/annual_report2008_en.pdf

⁴² https://tanzania.go.tz/egov_uploads/documents/annual_report_en.pdf

⁴³ https://tanzania.go.tz/egov_uploads/documents/Aide_Memoire_JESR_29-2012_en.pdf

⁴⁴ https://tanzania.go.tz/egov_uploads/documents/EDUCATION_IN_GLOBAL_ERA_en.pdf

https://tanzania.go.tz/egov_uploads/documents/EDUCATION_IN_GLOBAL_ERA_en.pdf



document outlines policies, strategies, practices, trends, critical concerns, and aspirations of Tanzania, particularly with respect to the global HIV/AIDS crisis. With regards to meeting the needs of the new century, the document notes:

The education for the 21st century need to respond more effectively to changing needs of learners. Reforms of educational management is urgently needed to move from highly centralized, standardized and command-driven forms of management to more decentralized and participatory decision making, implementation and monitoring at lower levels of accountability. (EGA, pp. iv–v)

In terms of the skills associated with the changes of the 21st century, there is less information. ICT is only mentioned once, but since this document was written in 2000, that is perhaps not surprising. Learner-centred education is mentioned three times (including a duplicate sentence): Under the heading *Adult Education and Non-formal Education*, the EGE states, “The reform of this area will include development of a learner-centered [*sic*] and community-based approach for adult and out of school youths” (EGE, pp. 34 and 57).

11.6.4. ICT in Education: Situational Analysis

The ICT in Education: Situational Analysis from 2010 is a report prepared by Dr. Patti Swarts and Ms. Esther Mwiyeria Wachira from the Global e-Schools and Communities Initiative (GeSCI).⁴⁵ GeSCI provides technical assistance to developing countries on the effective use of ICT in education. The situational analysis showed that the government was aware of an committed to the use of ICT in education, and that a number of ICT initiatives were being implemented at the time of the report. Teacher education colleges are the priority for deployment of computers. With support from the Swedish International Development Cooperation Agency (Sida), all public teacher colleges were given computers with the purpose of improving the quality of education.

There is little mention to skills apart from ICT, but the role of ICT in supporting 21st century learning is clear: “ICT, if appropriately used can assist in addressing the key educational challenges, [such as] the inclusion of ICT skills in the curriculum and the use of ICT to support 21st century learning can increase relevance” (ICTESA, p. 7).

11.6.5. ICT Policy for Basic Education

The ICT Policy for Basic Education from 2007 outlines the educational objectives of the use of ICT and priorities for sustainably implementing the ICT policy.⁴⁶ The document lists 58 short policy statements, including the following – which is the only reference to critical thinking:

The MoEVT will ensure that ICT is used in the teaching and learning process to support the mastery of subject matter while addressing individual learner’s differences, critical

⁴⁵ https://tanzania.go.tz/egov_uploads/documents/Situational_Analysis_Tanzania_en.pdf

⁴⁶ www.moe.go.tz/index.php/sw/publications/send/27-policy-sera/219-ict-policy-for-basic-education-2007



thinking skills, and language, through interactive and participatory learning. (ICTPBE, p. 15)

11.7. Tanzania: Key Findings and Concluding Remarks

Tanzania was approaching full enrolment when it was forced to introduce school fees to cut government spending, and enrolment went down. Teacher education programs are available for people with junior secondary school. The content of the teacher education program, as well as the final exam, are more theoretically than practically oriented, which raises questions about how well the program prepares teacher candidates for teaching. There is a disconnect between educational policy, professional practice, theory, and research, which is arguably one of the most pressing issues in teacher education in Tanzania.

The practicum part of the teacher education program is also a concern. In one study the teacher candidates were not permitted to teach lower primary, and the placement schools were not designed for student teacher practicum. Lessons were described as having being teacher dominated and with little variation. In-service training was focused on upgrading certificates rather than pedagogy.

In terms of educational policies, Tanzania's seven documents is similar in number to the other reviewed countries. But the fact that three are annual reports with little policy content, and two specifically cover ICT, means they provide less information on the countries educational policies than do the documents from other countries. Overall there is scant mention of any 21st century skills, or how the education system can help students develop these skills.

12: Recommendations for Research and Practice Based on the Case Studies

Key findings and recommendations for research and practice

- Research how to strengthen connections between theory and practice in teacher education programs
- Research the implementation of policies on teacher education
- Review entry requirements into teacher education programs
- Strengthen the practicum period
- Promote training of secondary school teachers who can teach two subjects

Although the six countries in this review have many differences in terms of policy and practice, the following recommendations are provided in an effort to address commonalities, while at the same time acknowledging that individual countries are different, with their own local conditions and needs, and the recommendations should be considered in light of national and local contexts.

12.1. Recommendations

12.1.1. Research how to strengthen connections between theory and practice in teacher education programs

The disconnect between theory and practice is not only a problem to be addressed between policy and practice, but also within teacher education programs. While subject matter is important, there is broad agreement that teachers need to be better trained to teach specific subjects. In other words, pedagogical knowledge is as important as subject knowledge. Research should investigate how teacher candidates can develop pedagogical content knowledge. Possible avenues for this include action research where tutors and student candidates model principles and elements of teaching, such as word recognition or anticipating story development. Video might be used in documenting and disseminating such enhanced practices that have been developed and tried out through research.

12.1.2. Research the implementation of policies on teacher education

Policies on teaching and teacher education should maintain a vision for a better education, but should not lose sight of the fact that the current social and economic conditions of teaching and learning, both in the school system and the teacher education system, are not aligned with the vision upheld in policy documents. In the making of curriculum and policy, there is a need to take into account the realities of teaching, including large class sizes, scarcity of textbooks, storybooks, and other literacy and educational materials, teachers' workloads, teaching facilities, and other conditions that circumscribe teaching and learning opportunities. Specifically, while policy documents may often be visionary, if the visions they champion are not aligned with resources, revised curricula, and teacher training, they will likely remain an abstract ideal rather than a set of principles for guiding teaching practice. Research is needed to investigate how



policies on teacher education are translated into practice, and how the realization of the goals put forth in policies can best be fulfilled. many policies mention 21st century skills, but very few outline how these can be integrated into teacher education programs. Research that specifically addresses this issue would contribute to making these policies more relevant and help achieve their aim of higher quality education.

12.1.3. Review entry requirements into teacher education programs

Recruiting teachers with only lower secondary school education into teacher education programs is controversial in Ethiopia, and long established in Tanzania. As primary school enrolment is getting close to the goal of full enrolment, it might be pertinent to consider raising the requirements for entry to teacher education programs. The trade-off between securing an adequate number of teachers and encouraging high educational attainment of new teacher candidates can make this a difficult choice, and national conditions need to be considered. It is also important to distinguish between short-term requirements to boost enrolment when demand for new teachers is very high, and long-term goals for the development of a sustainable provision of well-qualified teachers.

12.1.4. Strengthen the practicum period

The practicum period has in some countries been expanded and changed, which is promising. The practicum period is an important part of teacher education that allows teacher candidates to reflect on and put into practice what they have learnt, and to bring their experiences back to the teacher training college or university to discuss. However, support and evaluation is often inadequate. The practicum system should be strengthened through improved follow-up from the teacher training college tutors and classroom teachers, and better opportunities for the teacher candidates to reflect on and discuss their experiences. Assessment of the practicum solely or mainly through rubrics runs the risk of reducing the evaluation of teaching, and hence teaching itself, to a mechanical activity that may have little meaning to the student teachers. Furthermore, the relationship between the primary teacher training college and the placement schools should be strengthened and roles and responsibilities clarified.

12.1.5. Promote training of secondary school teachers who can teach two subjects

Educating secondary school teachers who can teach two subjects is already taking place to some extent. Continuing this practice promotes better utilization of teachers, particularly in smaller schools in rural areas.

13: Conclusion

Education in Africa has undergone much change in a short time, and many countries have made great progress, particularly in terms of enrolment in primary school, and to some extent secondary school. The quality of education that students receive, however, is still not satisfactory. Quality education has been the focus of attention in the global drive for education, most notably through the MDGs and SDGs, but it is also central to the Canadian government's policy on international assistance. Attention is also increasingly directed beyond primary school – to ECE and secondary schools. In all areas, the notion of what quality education entails needs to be interrogated further, and research, particularly on effective teaching practices, needs greater attention. The field of ECE should consider what African realities and childcare practices mean for the burgeoning professionalization and institutionalization of ECE. Support for vulnerable children is also important, both through specialized programs and as an integral part of all efforts to improve literacy and education in Africa. Research would contribute to strengthening these areas and provide guidelines for policy and practice.

Language is one area of particular importance, since language is the key for all education in general (Bamgbose, 2014; Norton, 2014; Romaine, 2013). In Africa the language issue is also controversial, since most teaching, particularly from the middle of primary school, takes place in colonial, not African, languages. Although research clearly demonstrates that students learn better when they are taught in a language they understand (Cummins, 2007), this principle is often not reflected adequately in practice. Language policies favouring mother tongue instruction are contested by parents and other stakeholders (Tembe & Norton, 2008). Much more work is needed to strengthen African languages, both specifically for educational purposes and in society more generally. Exams are also often an obstacle in the way of promoting mother tongue instruction, since the language of the exam is often English or French (Rea-Dickins et al., 2009). Supporting current efforts that use students' own languages as the medium of instruction in primary school requires concerted efforts at many levels, and research on this topic could inform future policies on language of instruction.

Supporting African languages for use in the classroom, as well as all teaching and learning, requires the availability of literacy materials, particularly textbooks and storybooks. These are often lacking – a major obstacle to quality literacy instruction (Results for Development, 2016). There is thus a great need for more materials, and equally important is to support teachers using these materials. Helping teachers use textbooks and storybooks in ways that are pedagogically sound but also resonate with conventional practices that are familiar to teachers, will ensure that books are put to good use (Stranger-Johannessen & Norton, 2017). Effective use of literacy materials, and digital devices where available, is more likely to help students prepare for the challenges of the 21st century.

Textbooks and storybooks are still the most familiar technology to teachers. That is not always the case with computers, tablets, smartphones, and other digital devices that are increasingly praised as means of improving education. The literature on ICT is more cautiously optimistic, however. OERs have a potential and should be supported, but infrastructure, skills, and localization efforts need to be developed further for ICT to realize its promise. ICT still plays an important role, such as enabling sharing and creation of stories through the African Storybook and other resources online (Welch & Glennie, 2016). As costs go down and skills increase, electronic devices might increasingly be the most viable way of promoting literacy.

Teacher education is in rapid transformation, with great expansion of PRESET and development of new programs for INSET. Yet there are many challenges, not least with regards to the quality of teacher education. The literature on teacher education as well as teaching practices indicate that there is considerable need for additional research, and the teaching and learning of assessment practices receive little mention in the existing literature. Supporting NQTs has been suggested as a way forward, while increasing salaries and reviewing teacher placement policies might also be of some help. Irrespective of the measures taken to improve teaching and teacher education, care should be taken to consider existing practices, and how these fit with suggestions for improvement. Research that explores how to build on teachers' practices is more likely to lead to a practice that ensures uptake and long-term viability of a program.

The six focal countries differ in how many documents they make available online, and to some extent also how these policy documents cover 21st century skills (see Table 17). Ethiopia's main website states a wish to make as many documents available online as possible, and urges the users of its website to contact them to make additions or improvements. Kenya also offers many documents online, but the absence of the national curriculum stands out in what is otherwise an abundance of information. Tanzania offers some documents, and Ghana lists several key policy documents, but few of these are linked, and thus not available online. However, since some documents have been re-hosted on other websites, they are available through an Internet search. Liberia and Sierra Leone are in a similar situation, with few or no policy documents on government websites, but some available through third-party websites.

Table 17. Key terms in reports and the academic literature

Search terms	General	Ethiopia	Ghana	Kenya	Liberia	Sierra Leone	Tanzania	Total
21 st century skills*	0	0	0	0	1	0	0	1
critical thinking*	3	5	30	0	0	2	0	40
problem solving*	10	12	21	4	1	1	5	54
independent thinking*	0	0	0	0	0	0	0	0
active learning*	7	28	0	1	0	2	0	38
ICT	47	18	3	3	82	4	0	157
learner-centred*	19	26	19	10	2	2	19	97

* And related terms

A few documents make explicit references to 21st century skills, or more often the needs and challenges of the 21st century generally. References to specific skills vary, and most documents only refer to some skills, such as *critical thinking*, *problem solving*, and *active learning*. The majority of documents make only brief references to these, such as in bullet points, lists, or in tables, or in a single sentence with no further elaboration. The clearest exception to this is Kenya's *Basic Education Curriculum Framework*, which first describes these in their own right,

and then proceeds with examples and their use within the different subject areas. *Entrepreneurship* is mostly mentioned in the context of TVET, but in Kenya's BECF, entrepreneurship is valued as a skill in its own right and not just in the context of vocational training. *Problem solving* is widely used in math and science education, but much less as a general skill or outside these subjects. Overall, the Kenyan documents paint a picture of considerable focus on 21st century skills and attention to quality education more generally, and the *Basic Education Curriculum Framework*, in particular, substantiates this focus by providing comprehensive details.

However, there is hardly any description or discussion of how these skills vary across grades in any of the documents, or how teachers should address these differently in primary and secondary school. Rather, they are advanced as goals in their own right, and by and large readers are left with the task of determining how these general ideas should be translated into practice. While most of these policy documents are not necessarily directed at teachers, the question of how these ideas are promoted and formulated in teachers' guides, textbooks, and other documents teachers will read, is an open question. Perhaps these policy documents are best kept somewhat general, whereas other written work targeting teachers will provide more guidance on what these principles entail in practice. In most cases the curricula seem to provide teachers with little support on how to integrate higher order skills into their teaching, even though this goal is often stated in general terms. In any event, what these policy documents and curricula ask teachers to do may not be implemented in the classroom.

The reviewed documents reveal considerable optimism about ICT, and great plans for the expansion of ICT in schools, in terms of infrastructure, software, and training. While many documents, especially the older ones, tend to focus on infrastructure and access to ICT, some documents also underline the role of ICT in supporting quality education and the integration of ICT into curricular content.

As this review shows, there are both differences and similarities across the six countries, some of which are recovering from the catastrophe of civil war, while others have been steadily developing and making great progress for a number of years. It is with such differences in mind that it is important to stress the need for attention to the local in literacy and teacher education reforms and interventions.

Comparative research shows that teacher reform needs to combine the culturally or nationally unique with what is universal in classroom pedagogy, if internationally driven reforms to teacher education are to be embedded in the classroom reforms. (Hardman et al., 2012, p. 827)

In sum, it is clear from the research on language and literacy education in sub-Saharan Africa that context does indeed matter a great deal as we navigate the challenges and possibilities of the 21st Century and develop research to inform future policy and practice.



References

- Abban, J. (2016, April 15). Liberia: Govt., EU Launch ‘B’ Certificate Program for Teachers. *The New Dawn*. Retrieved from <http://allafrica.com/stories/201604150944.html>
- Abd-Kadir, J., & Hardman, F. (2007). The discourse of whole class teaching: A comparative study of Kenyan and Nigerian primary English lessons. *Language and Education*, 21(1), 1–15. <https://doi.org/10.2167/le684.0>
- Abiria, D. M. (2011). Exploring cultural resources as pedagogical tools for language education: A case of two primary schools in Uganda (Master’s thesis). University of British Columbia, Vancouver, Canada.
- Abuya, B. A., Oketch, M., Ngware, M. W., Mutisya, M., & K. Musyoka, P. (2015). Experiences of parents with the Reading to Learn approach: A randomised control trial initiative to improve literacy and numeracy in Kenya and Uganda. *Education 3-13*, 43(5), 514–529. <https://doi.org/10.1080/03004279.2013.829859>
- Abuya, B., Oketch, M., & Musyoka, P. (2013). Why do pupils dropout when education is “free”? Explaining school dropout among the urban poor in Nairobi. *Compare: A Journal of Comparative and International Education*, 43(6), 740–762. <https://doi.org/10.1080/03057925.2012.707458>
- Adu-Yeboah, C. (2011). Teacher preparation and continuing professional development in Africa (TPA): Learning to teach reading and mathematics and its influence on practice in Ghana (Report). University of Sussex, Centre for International Education.
- Africa Ranking. (n.d.). Top 10 most technologically advanced countries in Africa. Retrieved from <http://www.africaranking.com/most-technologically-advanced-countries-in-africa>
- Africa-America Institute. (2015). State of Education in Africa Report 2015. Retrieved from <http://www.aaionline.org/wp-content/uploads/2015/09/AAI-SOE-report-2015-final.pdf>
- African Storybook. (2015). Guide for making and using stories.
- African Storybook. (n.d.). *African Storybook Project annual report 2015*. Retrieved from <http://www.saide.org.za/sites/default/files/African%20Storybook%20Annual%20Report%202015.docx>
- Ahmad, S. (2013). Teacher education in Ethiopia: Growth and development. *African Journal of Teacher Education*, 3(3).
- Akyeampong, K., & Lewin, K. M. (2002). From student teachers to newly qualified teachers in Ghana: Insights into becoming a teacher. *Researching Teacher Education: The Multi Site Teacher Educations Project (MUSTER)*, 22(3–4), 339–352. [https://doi.org/10.1016/S0738-0593\(01\)00059-1](https://doi.org/10.1016/S0738-0593(01)00059-1)



- Akyeampong, K., Lussier, K., Pryor, J., & Westbrook, J. (2013). Improving teaching and learning of basic maths and reading in Africa: Does teacher preparation count? *Educating the Poorest*, 33(3), 272–282. <https://doi.org/10.1016/j.ijedudev.2012.09.006>
- Akyeampong, K., Pryor, J., & Ampiah, J. G. (2006). A vision of successful schooling: Ghanaian teachers' understandings of learning, teaching and assessment. *Comparative Education*, 42(2), 155–176. <https://doi.org/10.1080/03050060600627936>
- Altinyelken, H. K. (2010). Curriculum change in Uganda: Teacher perspectives on the new thematic curriculum. *International Journal of Educational Development*, 30(2), 151–161.
- Andema, S., Kendrick, M., & Norton, B. (2010). ICT, cultural knowledge, and teacher education in Africa. In *Proceedings of the 7th International Conference on Cultural Attitudes Towards Technology and Communication* (pp. 450–457).
- Andema, S., Kendrick, M., & Norton, B. (2013). Digital literacy in Ugandan teacher education: Insights from a case study. *Reading & Writing*, 4(1), 1–8. <https://doi.org/10.4102/rw.v4i1.27>
- Asare, K. B., & Nti, S. K. (2014). Teacher Education in Ghana. *SAGE Open*, 4(2), 1–8. <https://doi.org/10.1177/2158244014529781>
- Asselin, M., Abebe, A., & Doiron, R. (2014). Applying an ecological model for library development to build literacy in rural Ethiopian Communities.
- Athanassiou, N., McNett, J. M., & Harvey, C. (2003). Critical thinking in the management classroom: Bloom's taxonomy as a learning tool. *Journal of Management Education*, 27(5), 533–555.
- Babaci-Wilhite, Z. (2010). Why is the choice of the language of instruction in which students learn best seldom made in Tanzania? In Z. Desai, M. A. S. Qorro, & B. Brock-Utne (Eds.), *Educational challenges in multilingual societies: LOITASA Phase Two Research* (pp. 281–305). Cape Town, South Africa: African Minds. Retrieved from <http://books.google.ca/books?id=7q6qUEjADWwC>
- Babaci-Wilhite, Z. (2015). Zanzibar's curriculum reform: Implications for children's educational rights. *PROSPECTS*, 1–15. <https://doi.org/10.1007/s11125-015-9341-6>
- Bamgbose, A. (2014). The language factor in development goals. *Journal of Multilingual and Multicultural Development*, 35(7), 646–657. <https://doi.org/10.1080/01434632.2014.908888>
- Bamgbose, A. (n.d.). Language of instruction policy and practice in Africa. Retrieved from http://www.unesco.org/education/languages_2004/languageinstruction_africa.pdf
- Banda, F. (2000). The dilemma of the mother tongue: Prospects for bilingual education in South Africa. *Language, Culture and Curriculum*, 13(1), 51–66. <https://doi.org/10.1080/07908310008666589>

- Barrett, A. M., Ali, J., Sajidand Clegg, Hinostroza, J. E., Lowe, J., Nickel, J., Novelli, M., ... Yu, G. (2007). *Initiatives to improve the quality of teaching and learning: A review of recent literature* (EdQual Working paper No. 11). University of Bristol. Retrieved from <http://www.edqual.org/publications/workingpaper/edqualwp11.pdf>
- Barrett, A. M., Chawla-Duggan, R., Lowe, J., Nickel, J., & Ukpo, E. (2006). The concept of quality in education: A review of the “international” literature on the concept of quality in education.
- Barton, A., & Sakwa, L. N. (2012). The representation of gender in English textbooks in Uganda. *Pedagogy, Culture & Society*, 20(2), 173–190.
- BDS Center for Development Research. (2016). Analysis of teacher demand and supply of the general education sector in Ethiopia: Magnitude, determinant factors and possible remedies. Addis Ababa, Ethiopia.
- Bellanca, J. A., & Brandt, R. (Eds.). (2011). *21st century skills: Rethinking how students learn*. Bloomington, IN: Solution Tree Press.
- Benson, C. J. (2000). The primary bilingual education experiment in Mozambique, 1993 to 1997. *International Journal of Bilingual Education and Bilingualism*, 3(3), 149–166.
- Benson, C., & Young, C. (2016). How can MTB-MLE be carried out in classrooms where three or more local languages are represented as mother tongues? In B. Trudell & C. Young (Eds.), *Good answers to tough questions in mother tongue-based multilingual education* (pp. 8–14). SIL International.
- Benson, P. (2012). Learner-centered teaching. In A. Burns & J. C. Richards (Eds.), *The Cambridge guide to pedagogy and practice in second language teaching* (pp. 30–37). Cambridge, England: Cambridge University Press.
- Bernsten, J. (1998). Runyakitara: Uganda’s “new” language. *Journal of Multilingual and Multicultural Development*, 19(2), 93–107. <https://doi.org/10.1080/01434639808666345>
- Betancourt, T. S., Simmons, S., Borisova, I., Brewer, S. E., Iweala, U., & de la Soudière, M. (2008). High hopes, grim reality: Reintegration and the education of former child soldiers in Sierra Leone. *Comparative Education Review*, 52(4), 565–587. <https://doi.org/10.1086/591298>
- Bhalalusesa, E., Westbrook, J., & Lussier, K. (2011). Teacher preparation and continuing professional development in Africa (TPA): The preparation of teachers in reading and maths and its influence on practices in Tanzanian primary schools (Report). University of Sussex, Centre for International Education.
- Biersteker, L., Ngaruiya, S., Sebatane, E., & Gudyanga, S. (2008). Introducing preprimary classes in Africa: Opportunities and challenges. In M. H. Garcia, A. Pence, & J. Evans (Eds.), *Africa’s future, Africa’s challenge: Early childhood care and development in Sub-Saharan Africa* (pp. 227–248). Washington, DC: World Bank. <https://doi.org/10.1596/978-0-8213-6886-2>



- Bloom, B. S. (1956). *Taxonomy of educational objectives: The classification of educational goals, by a committee of college and university examiners*. New York: Longmans.
- Brock-Utne, B. (2000). *Whose education for all?: The recolonization of the African mind*. New York: Falmer Press.
- Brock-Utne, B. (2012). Language policy and science: Could some African countries learn from some Asian countries? *International Review of Education*, 58(4), 481–503.
<https://doi.org/10.1007/s11159-012-9308-2>
- Buckler, A. (2011). Reconsidering the evidence base, considering the rural: Aiming for a better understanding of the education and training needs of Sub-Saharan African teachers. *International Journal of Educational Development*, 31(3), 244–250.
<https://doi.org/10.1016/j.ijedudev.2010.04.003>
- Bunyi, G. (1997). Language in education in Kenyan schools. In J. Cummins & D. Corson (Eds.), *Encyclopedia of language and education* (Vol. 5, pp. 33–42). Dordrecht, Netherlands: Kluwer Academic.
- Bunyi, G., Wangia, J., Magoma, C., Limboro, C., & Akyeampong, K. (2011). *Teacher preparation and continuing professional development in Africa (TPA): Learning to teach reading and mathematics and its influence on practice in Kenya (Report)*. University of Sussex, Centre for International Education.
- Burns, M., & Lawrie, J. (Eds.). (2015). *Where it's needed most: Quality professional development for all teachers*. New York: Inter-Agency Network for Education in Emergencies. Retrieved from <http://www.ineesite.org/en/blog/new-publication-where-its-needed-most-quality-professional-development-for>
- Butcher, N., Hoosen, S., Levey, L., & Moore, D. (2016). *The impact of open licensing on the early reader ecosystem*. Neil Butcher and Associates. Retrieved from <http://www.nba.co.za/impact-open-licensing-early-reader-ecosystem>
- Canagarajah, A. S. (1999). *Resisting linguistic imperialism in English teaching*. Oxford, UK: Oxford University Press. Retrieved from http://books.google.ca/books?id=8RQ_v9GoHsYC
- Canagarajah, S. (2004). Subversive identities, pedagogical safe houses, and critical learning. *Critical Pedagogies and Language Learning*, 116–137.
- Çayir, K. (2009). Preparing Turkey for the European Union: Nationalism, national identity and “otherness” in Turkey’s new textbooks. *Journal of Intercultural Studies*, 30(1), 39–55.
<https://doi.org/10.1080/07256860802579436>
- Chapman, D. W., Burton, L., & Werner, J. (2010). Universal secondary education in Uganda: The head teachers’ dilemma. *International Journal of Educational Development*, 30(1), 77–82.
<https://doi.org/10.1016/j.ijedudev.2009.08.002>



- Chisholm, L., & Leyendecker, R. (2008). Curriculum reform in post-1990s sub-Saharan Africa. *International Journal of Educational Development*, 28(2), 195–205.
<https://doi.org/10.1016/j.ijedudev.2007.04.003>
- CIA. (n.d.). The world factbook. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/fields/2103.html> and <https://www.cia.gov/library/publications/the-world-factbook/fields/2046.html> and <https://www.cia.gov/library/publications/the-world-factbook/geos/et.html>
- Clark, C., & Rumbold, K. (2006). *Reading for pleasure: A research overview*. National Literacy Trust London.
- Concern Worldwide, Catholic Relief Services Sierra Leone Program, IBIS, & Plan Sierra Leone. (2010). 'Give Us a Chance': *National study on school-related gender-based violence in Sierra Leone*. Retrieved from <http://hivhealthclearinghouse.unesco.org/library/documents/give-us-chance-national-study-school-related-gender-based-violence-sierra-leone>
- Conn, K. (2014). Identifying effective education interventions in Sub-Saharan Africa: A meta-analysis of rigorous impact evaluations (Doctoral dissertation). Columbia University, New York.
- Crystal, D. (2012). *English as a global language* (2nd ed.). Cambridge, England: Cambridge University Press.
- Cummins, J. (2007). Pedagogies for the poor? Realigning reading instruction for low-income students with scientifically based reading research. *Educational Researcher*, 36(9), 564–572.
- Czerniewicz, L., Deacon, A., Small, J., & Walji, S. (2014). Developing world MOOCs: A curriculum view of the MOOC landscape. *Journal of Global Literacies, Technologies, and Emerging Pedagogies*, 2(3), 122–139.
- Dahlström, L., & Lemma, B. (2008). Critical perspectives on teacher education in neo-liberal times: Experiences from Ethiopia and Namibia. *Southern African Review of Education with Education with Production*, 14(1–2), 29–42.
- Davidson, M., & Hobbs, J. (2013). Delivering reading intervention to the poorest children: The case of Liberia and EGRA-Plus, a primary grade reading assessment and intervention. *International Journal of Educational Development*, 33(3), 283–293.
<https://doi.org/10.1016/j.ijedudev.2012.09.005>
- Dembélé, M. (2005). Improving the effectiveness of schools: The African experience. In A. M. Verspoor (Ed.), *The challenge of learning: Improving the quality of basic education in sub-Saharan Africa* (pp. 195–218). Paris: Association for the Development of Education in Africa (ADEA).

- Dembélé, M., & Lefoka, P. (2007). Pedagogical renewal for quality universal primary education: Overview of trends in Sub-Saharan Africa. *International Review of Education / Internationale Zeitschrift Für Erziehungswissenschaft / Revue Internationale de l'Education*, 53(5/6), 531–553. <https://doi.org/10.2307/27715416>
- Dent, V. F., & Yannotta, L. (2005). A rural community library in Africa: A study of its use and users. *Libri*, 55(1), 39–55.
- Diallo, Y. S. (2011). Publications in African languages and the development of bilingual education. In A. Ouane & C. Glanz (Eds.), *Optimising learning, education and publishing in Africa - the language factor: A review and analysis of theory and practice in mother-tongue and bilingual education in sub-Saharan Africa* (pp. 291–309). Hamburg, Germany: Unesco Institute for Lifelong Education.
- Dubeck, M. M., Jukes, C. H., Matthew, & Okello, G. (2012). Early primary literacy instruction in Kenya. *Comparative Education Review*, 56(1), 48–68. <https://doi.org/10.1086/660693>
- Dubeck, M. M., Jukes, M. C. H., Brooker, S. J., Drake, T. L., & Inyega, H. N. (2015). Designing a program of teacher professional development to support beginning reading acquisition in coastal Kenya. *International Journal of Educational Development*, 41, 88–96. <https://doi.org/10.1016/j.ijedudev.2014.11.022>
- Duflo, E., Dupas, P., & Kremer, M. (2015). School governance, teacher incentives, and pupil–teacher ratios: Experimental evidence from Kenyan primary schools. *Journal of Public Economics*, 123, 92–110. <https://doi.org/10.1016/j.jpubeco.2014.11.008>
- Edwards, V., & Ngwaru, J. M. (2010). *African language publishing for children: Where next?* Reading, UK: National Centre for Language and Literacy, University of Reading.
- Edwards, V., & Ngwaru, J. M. (2011). African language books for children: Issues for authors. *Language, Culture and Curriculum*, 25(2), 123–137. <https://doi.org/10.1080/07908318.2011.629051>
- Edwards, V., & Ngwaru, J. M. (2014). Language capital and development: the case of African language publishing for children in South Africa. *International Journal of the Sociology of Language*, 2014(225), 29–50. <https://doi.org/10.1515/ijsl-2013-0064>
- Ethnologue. (n.d.). Ethiopia. Retrieved from <https://www.ethnologue.com/country/ET>
- Fajebe, A. A., Best, M. L., & Smyth, T. N. (2013). Is the one laptop per child enough? Viewpoints from classroom teachers in Rwanda. *Information Technologies & International Development*, 9(3), 29–42.
- Fehling, M., Nelson, B. D., & Venkatapuram, S. (2013). Limitations of the Millennium Development Goals: A literature review. *Global Public Health*, 8(10), 1109–1122. doi:10.1080/17441692.2013.845676

- FHI 360. (n.d.-a). Liberia teacher training program: Annual report project year II.
- FHI 360. (n.d.-b). Ethiopia. Retrieved from http://www.epdc.org/sites/default/files/documents/EPDC%20NEP_Ethiopia.pdf
- FHI. (2015). Building the capacity of Liberia's Ministry of Education to harness the power of information. Retrieved from <https://www.fhi360.org/sites/default/files/media/documents/igl-success-stories.pdf>
- Fletcher, J., & Shepherd, S. (2016). An evaluation of T-TEL's teaching and learning materials.
- Foulds, K. (2013). The continua of identities in postcolonial curricula: Kenyan students' perceptions of gender in school textbooks. *International Journal of Educational Development*, 33(2), 165–174.
- Frölich, M., & Michaelowa, K. (2005). *Peer effects and textbooks in primary education: Evidence from francophone sub-Saharan Africa* (Discussion Paper No. 1519). Bonn, Germany: Institute For Study of Labor. Retrieved from <http://ftp.iza.org/dp1519.pdf>
- Fuchs, C., & Horak, E. (2008). Africa and the digital divide. *Telematics and Informatics*, 25(2), 99–116. <https://doi.org/10.1016/j.tele.2006.06.004>
- Garan, E. M., & DeVoogd, G. (2008). The benefits of sustained silent reading: Scientific research and common sense converge. *The Reading Teacher*, 62(4), 336–344. <https://doi.org/10.1598/RT.62.4.6>
- Garcia, M. H., Pence, A., & Evans, J. (Eds.). (2008). *Africa's future, Africa's challenge: Early childhood care and development in Sub-Saharan Africa*. World Bank. <https://doi.org/10.1596/978-0-8213-6886-2>
- GhanaWeb. (2005). Training of untrained teachers. Retrieved from <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/Training-of-Untrained-Teachers-96740>
- Glewwe, P., Kremer, M., & Moulin, S. (1998). *Textbooks and test scores: Evidence from a prospective evaluation in Kenya*. Retrieved from http://www.econ.yale.edu/egcenter/infoconf/kremer_paper.pdf
- Glewwe, P., Kremer, M., & Moulin, S. (2009). Many children left behind? Textbooks and test scores in Kenya. *American Economic Journal: Applied Economics*, 1(1), 112–35. <https://doi.org/10.1257/app.1.1.112>
- Gove, A., & Wetterberg, A. (2011). *The early reading assessment: Applications and interventions to improve basic literacy*. Research Triangle Institute. <https://doi.org/10.3768/rtipress.2011.bk.0007.1109>

- Government of Canada. (n.d.-a). Canada's feminist international assistance policy. Retrieved from http://international.gc.ca/world-monde/issues_development-enjeux_developpement/priorities-priorites/policy-politique.aspx?lang=eng#5.2
- Government of Canada. (n.d.-b). Health and rights of women and children. Retrieved from http://international.gc.ca/world-monde/issues_development-enjeux_developpement/priorities-priorites/what_we_heard-que_nous_entendu.aspx?lang=eng
- Guerrettaz, A. M., & Johnston, B. (2013). Materials in the classroom ecology. *The Modern Language Journal*, 97(3), 779–796. <https://doi.org/10.1111/j.1540-4781.2013.12027.x>
- Gulliver, T. (2011). Banal nationalism in ESL textbooks. *Canadian Journal of Education/Revue Canadienne de L'éducation*, 34(3), 119–135.
- Gupta, L., & Zimmer, C. (2008). Psychosocial intervention for war-affected children in Sierra Leone. *The British Journal of Psychiatry*, 192(3), 212–216. <https://doi.org/10.1192/bjp.bp.107.038182>
- Guthrie, G. (1990). To the defence of traditional teaching in lesser-developed countries. In V. D. Rust & P. Dalin (Eds.), *Teachers and teaching in the developing world* (pp. 219–232). New York: Springer.
- Guthrie, G. (2011). *The progressive education fallacy in developing countries: In favour of formalism*. New York: Springer. <https://doi.org/10.1007/978-94-007-1851-7>
- Hadebe, S. (2009). From Standardisation to Harmonisation: a survey of the sociolinguistic and political conditions for the creation of Nguni in Southern Africa. In B. Brock-Utne & I. Skattum (Eds.), *Languages and Education in Africa: A comparative and transdisciplinary analysis* (pp. 275–284). Oxford, England: Symposium Books.
- Hardman, F., Abd-Kadir, J., & Tibuhinda, A. (2012). Reforming teacher education in Tanzania. *International Journal of Educational Development*, 32(6), 826–834. <https://doi.org/10.1016/j.ijedudev.2012.01.002>
- Hardman, F., Abd-Kadir, J., Agg, C., Migwi, J., Ndambuku, J., & Smith, F. (2009). Changing pedagogical practice in Kenyan primary schools: The impact of school-based training. *Comparative Education*, 45(1), 65–86. <https://doi.org/10.1080/03050060802661402>
- Hardman, F., Ackers, J., Abrishamian, N., & O'Sullivan, M. (2011). Developing a systemic approach to teacher education in sub-Saharan Africa: Emerging lessons from Kenya, Tanzania and Uganda. *Compare: A Journal of Comparative and International Education*, 41(5), 669–683. <https://doi.org/10.1080/03057925.2011.581014>
- Hardman, F., Hardman, J., Dachi, H., Elliott, L., Ihebuzor, N., Ntekim, M., & Tibuhinda, A. (2015). Implementing school-based teacher development in Tanzania. *Professional Development in Education*, 41(4), 602–623. <https://doi.org/10.1080/19415257.2015.1026453>



- Hedges, J. P. (2000). *The importance of posting in becoming a teacher in Ghana*. Centre for International Education, University of Sussex.
- Heugh, K. (2011). Cost implications of the provision of mother-tongue and strong bilingual models of education in Africa. In A. Ouane & C. Glanz (Eds.), *Optimising learning, education and publishing in Africa - the language factor: A review and analysis of theory and practice in mother-tongue and bilingual education in sub-Saharan Africa* (pp. 255–289). Hamburg, Germany: UNESCO Institute for Lifelong Education.
- Heugh, K., & Mulumba, B. M. (2014). Implementing local languages medium education in the early primary curriculum of Ugandan schools (Report). Literacy and Adult Basic Education.
- Heugh, K., Benson, C., Bogale, B., & Yohannes, M. A. G. (2007). *Final report: Study on medium of instruction in primary schools in Ethiopia* (Research report commissioned by the Ministry of Education, Addis Ababa, September to December 2006).
- Hilgendorf, S. K. (2007). English in Germany: Contact, spread and attitudes. *World Englishes*, 26(2), 131–148. <https://doi.org/10.1111/j.1467-971X.2007.00498.x>
- Hinton, S. (2009). Questions in the answers to primary school educational reconstruction in Sierra Leone. *US-China Education Review*, 6(7), 79–84.
- Hollow, D. (2010). *Evaluating ICT for education in Africa* (Doctoral dissertation). University of London.
- IBE-UNESCO. (2010/2011). World data on education: Ghana. Retrieved from http://www.ibe.unesco.org/fileadmin/user_upload/Publications/WDE/2010/pdf-versions/Ghana.pdf
- Indoshi, F. C. (2003). Teachers' experiences of the probation period of teaching in Kenya: Implications for teacher induction policies and programmes. *Journal of In-Service Education*, 29(3), 473–488. <https://doi.org/10.1080/13674580300200218>
- International Monetary Fund. (2016). World economic outlook. Retrieved from <https://www.imf.org/external/pubs/ft/weo/2016/02/>
- Janks, H., & Harley, K. (2015). *Mid-term review of African Storybook Project* (Report). Retrieved from <http://www.saide.org.za/sites/default/files/Executive%20Summary%20ASP%20Mid-term%20Review.docx>
- JBS International. (2014a). Mobiles for reading: A landscape research review. USAID.
- JBS International. (2014b). The power of coaching: Improving early grade reading instruction in developing countries: Final report.
- Jere-Folotiya, J., Chansa-Kabali, T., Munachaka, J. C., Sampa, F., Yalukanda, C., Westerholm, J., ... Lyytinen, H. (2014). The effect of using a mobile literacy game to improve literacy levels of grade one students in Zambian schools. *Educational Technology Research and Development*, 62(4), 417–436. <https://doi.org/10.1007/s11423-014-9342-9>

- Jere, C. M. (2014). Addressing educational access and retention of orphaned and vulnerable children in high HIV prevalence communities in rural Malawi: A flexible approach to learning. University of London, London.
- Johnston, D. (2011). Shooting for the wrong target? *Revista de Economía Mundial*, 27, 95–116.
- Jones, J. M. (2012). The effect of language attitudes on Kenyan stakeholder involvement in mother tongue policy implementation. *Journal of Multilingual and Multicultural Development*, 33(3), 237–250. <https://doi.org/10.1080/01434632.2012.661736>
- Kachru, B. B. (1985). Standards, codification and sociolinguistic realism: The English language in the outer circle. In R. Quirk & H. G. Widdowson (Eds.), *English in the World: Teaching and Learning the Language and Literatures* (pp. 11–30). Cambridge, England: Cambridge University Press.
- Kamwangamalu, N. M. (2016). Language policy and economics: The language question in Africa. London: Palgrave Macmillan.
- Kaplan, R. B., Baldauf, R. B., & Kamwangamalu, N. (2011). Why educational language plans sometimes fail. *Current Issues in Language Planning*, 12(2), 105–124. <https://doi.org/10.1080/14664208.2011.591716>
- Kendrick, M., Chemjor, W., & Early, M. (2012). ICTs as placed resources in a rural Kenyan secondary school journalism club. *Language and Education*, 26(4), 297–313. <https://doi.org/10.1080/09500782.2012.691513>
- Kendrick, M., Early, M., & Chemjor, W. (2013). Integrated literacies in a rural Kenyan girls' secondary school journalism club. *Research in the Teaching of English*, 47(4), 391–419.
- Khanare, F. (2012). Schoolchildren affected by HIV in rural South Africa: schools as environments that enable or limit coping. *African Journal of AIDS Research*, 11(3), 251–259. <https://doi.org/10.2989/16085906.2012.734985>
- Khejari, M. (2014). Teachers' attitudes towards the use of mother tongue as a language of instruction in lower primary schools in Hamisi District, Kenya. *International Journal of Humanities and Social Science*, 4(1), 75–85.
- KICD. (2014). KICD starts process to review basic education curriculum [press release]. Retrieved from <https://www.kicd.ac.ke/images/corpcomm/NEEDSASSESSMENT.pdf>
- Kim, Y.-S. G., Boyle, H. N., Zuilkowski, S. S., & Nakamura, P. (2016). *Landscape report on early grade literacy*. Washington, DC: USAID. Retrieved from <https://globalreadingnetwork.net/publications-and-research/landscape-report-early-grade-literacy-skills>

- Kirk, J., & Dembélé, M. (2013). Teachers and teacher issues in the drive towards quality UPE/UBE: An introduction. In J. Kirk, M. Dembélé, & S. Baxter (Eds.), *More and better teachers for quality education for all: Identity and motivation, systems and support [e-book]* (pp. 1–12). Collaborative Works.
- Krashen, S. D. (2004). *The power of reading: Insights from the research* (2nd ed.). Westport, CT: Libraries Unlimited.
- Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory into Practice*, 41(4), 212–218.
- Kugelman, F. (n.d.). Bloom's Taxonomy. Retrieved from <http://www.bloomstaxonomy.org/Blooms%20Taxonomy%20questions.pdf>
- Kyeyune, R., Baleeta, M., Sentongo, J., Nambi, R., Katende, G., Westbrook, J., & Lussier, K. (2011). Teacher preparation and continuing professional development in Africa (TPA): Learning to teach reading and mathematics and its influence on practice in Uganda (Report). University of Sussex, Centre for International Education.
- Laguarda, A. I., & Woodward, W. P. (2013). They own this: Mother tongue instruction for indigenous Kuku Children in Southern Sudan. *School Psychology International*, 34(4), 453–469.
- Lauglo, J. (2001). Engaging with adults: the case for increased support to adult basic education in sub-Saharan Africa. Washington, DC: ERIC.
- Lekule, S. C., & Beckford, L. C. (2013). Conceptualizing vulnerability among Tanzanian school children. *International Journal for Cross-Disciplinary Subjects in Education*, 4(1), 1067–1075.
- Lewin, K. M., & Stuart, J. M. (2003). Insights into the policy and practice of teacher education in low-income countries: The Multi-Site Teacher Education Research Project. *British Educational Research Journal*, 29(5), 691–707.
- Lewis, M. P. (Ed.). (2009). *Ethnologue: Languages of the world* (16th ed.). Dallas, TX: SIL International.
- Lubben, F., Campbell, B., Kasanda, C., Kapenda, H., Gaoseb, N., & Kandjeo-Marenga, U. (2003). Teachers' use of textbooks: Practice in Namibian science classrooms. *Educational Studies*, 29(2–3), 109–125. <https://doi.org/10.1080/03055690303276>
- Lucas, A. M., McEwan, P. J., Ngware, M., & Oketch, M. (2014). Improving early-grade literacy in East Africa: Experimental evidence from Kenya and Uganda. *Journal of Policy Analysis and Management*, 33(4), 950–976. <https://doi.org/10.1002/pam.21782>
- Malone, D. (2016). What is the most effective approach to transition to the use of a second language as medium of instruction when classroom policy and practice has used the learner's home language/first language in the early primary years? Which school year is best for



implementing this transition? In B. Trudell & C. Young (Eds.), *Good answers to tough questions in mother tongue-based multilingual education* (pp. 15–20). SIL International.

- McDermott, P., & Allen, N. (2015). Successes and challenges of implementing a teacher education project in rural Sierra Leone. *International Journal of Educational Research*, 71, 16–25. <https://doi.org/doi.org/10.1016/j.ijer.2015.02.001>
- McGill-Franzen, A., Allington, R. L., Yokoi, L., & Brooks, G. (1999). Putting books in the classroom seems necessary but not sufficient. *The Journal of Educational Research*, 93(2), 67–74. <https://doi.org/10.2307/27542250>
- McKay, S. L. (2002). *Teaching English as an international language: Rethinking goals and approaches*. Oxford, England: Oxford University Press.
- McKay, S. L. (2010). English as an international language. In N. H. Hornberger & S. McKay (Eds.), *Sociolinguistics and language education* (pp. 89–115). Bristol, UK: Multilingual Matters.
- Mekonnen, D. M. (2008). Reflections on the Teacher Education System Overhaul (TESO) program in Ethiopia: Promises, pitfalls, and propositions. *Journal of Educational Change*, 9(3), 281–304. <https://doi.org/10.1007/s10833-008-9070-1>
- Michaelowa, K. (2001). Primary education quality in francophone Sub-Saharan Africa: Determinants of learning achievement and efficiency considerations. *World Development*, 29(10), 1699–1716. [https://doi.org/10.1016/S0305-750X\(01\)00061-4](https://doi.org/10.1016/S0305-750X(01)00061-4)
- Ministry for Foreign Affairs of Finland. (2007). *Teacher Development Programme*. Retrieved from <http://www.finland.org.et/public/default.aspx?contentid=70673>
- Ministry of Education, Sports, & Technology. (2015). *Education for all 2015 national review report: Kenya*. Ministry of Education, Science and Technology, Kenya. Retrieved from <http://unesdoc.unesco.org/images/0023/002316/231637e.pdf>
- Ministry of Gender and Development. (2009). *Gender and statistics in Liberia*. Retrieved from https://unstats.un.org/unsd/gender/Ghana_Jan2009/ppt7.ppt
- Moon, B. (2007). *Research analysis: Attracting, developing and retaining effective teachers: A global overview of current policies and practices* (Working paper). UNESCO.
- Mtika, P., & Gates, P. (2010). Developing learner-centred education among secondary trainee teachers in Malawi: The dilemma of appropriation and application. *International Journal of Educational Development*, 30(4), 396–404. <https://doi.org/10.1016/j.ijedudev.2009.12.004>
- Mulkeen, A. (2010). *Teachers in Anglophone Africa: Issues in teacher supply, training, and management*. Washington, DC: World Bank.

- Mustapha, A. S. (2014). Sex roles in English language textbooks in Nigerian schools. *Journal of ELT and Applied Linguistics*, 2(2), 69–81.
- Muwanga, N. K., Aguti, J. N., Mugisha, J. F., Ndidde, A. N., & Siminyu, S. N. (2007). *Literacy practices in primary schools in Uganda: Lessons for future interventions*. Kampala, Uganda: Fountain Publishers.
- Nassimbeni, M., & Desmond, S. (2011). Availability of books as a factor in reading, teaching and learning behaviour in twenty disadvantaged primary schools in South Africa. *South African Journal of Libraries & Information Science*, 77(2), 95–103.
- Ngware, M. W., Abuya, B., Oketch, M., Admassu, K., Mutisya, M., & Musyoka, P. (2014). Randomized impact evaluation of education interventions: Experiences and lessons from a reading to learn intervention in East Africa. *International Journal of Research & Method in Education*, 1–22. <https://doi.org/10.1080/1743727X.2014.965252>
- Norton, B. (2014). Introduction: The Millennium Development Goals and multilingual literacy in African communities. *Journal of Multilingual and Multicultural Development*, 35(7), 633–645. <https://doi.org/10.1080/01434632.2014.908887>
- Norton, B., & Williams, C.-J. (2012). Digital identities, student investments and eGranary as a placed resource. *Language and Education*, 26(4), 315–329.
- Norton, B., Early, M., & Tembe, J. (2010). eGranary as a digital resource in Uganda: Preliminary findings. In F. Sudweeks, H. Hrachovec, & C. Ess (Eds.), *Proceedings of the 7th International Conference on Cultural Attitudes Towards Technology and Communication* (pp. 35–41). Retrieved from <http://www.educ.ubc.ca/faculty/norton/N,%20E,%20and%20T%20in%20CATAC%202010.pdf>
- Norton, B., Jones, S., & Ahimbisibwe, D. (2011). Learning about HIV/AIDS in Uganda: Digital resources and language learner identities. *Canadian Modern Language Review/La Revue Canadienne Des Langues Vivantes*, 67(4), 568–589. <https://doi.org/10.1353/cml.2011.0026>
- Nyaga, S., & Anthonissen, C. (2012). Teaching in linguistically diverse classrooms: Difficulties in the implementation of the language-in-education policy in multilingual Kenyan primary school classrooms. *Compare: A Journal of Comparative and International Education*, 42(6), 863–879. <https://doi.org/10.1080/03057925.2012.707457>
- O’Sullivan, M. (2006). Lesson observation and quality in primary education as contextual teaching and learning processes. *International Journal of Educational Development*, 26(3), 246–260. <https://doi.org/10.1016/j.ijedudev.2005.07.016>
- Oates, L. (2009). Coming up short in the OER movement: African language OERs. *Access to Knowledge: A Course Journal*, 1(2), 1–16.

- Oates, L. (2012). *ICT, multilingual primary education and classroom pedagogy in Northern Uganda* (Doctoral dissertation). University of British Columbia, Vancouver, Canada.
- Obondo, M. A. (2007). Tensions between English and mother tongue teaching in post-colonial Africa. In J. Cummins & C. Davison (Eds.), *International handbook of English language teaching* (Vol. 15, pp. 37–50). New York: Springer.
- Oduor, A. (2016). Report: Verdict of Kenyans on end of 8-4-4 education system. Retrieved from <https://www.standardmedia.co.ke/article/2000196630/report-verdict-of-kenyans-on-end-of-8-4-4-education-system>
- Oketch, M., & Rolleston, C. (2007). Policies on free primary and secondary education in East Africa: Retrospect and prospect. *Review of Research in Education*, 31, 131–158. <https://doi.org/10.3102/0091732X06298014>
- One Laptop Per Child. (n.d.). Worldwide over 3 million children and teachers have xo laptops. Retrieved from <http://one.laptop.org/map>
- Opoku-Amankwa, K. (2009). English-only language-in-education policy in multilingual classrooms in Ghana. *Language, Culture and Curriculum*, 22(2), 121–135. <https://doi.org/10.1080/07908310903075159>
- Opoku-Amankwa, K. (2010). What happens to textbooks in the classroom? Pupils' access to literacy in an urban primary school in Ghana. *Pedagogy, Culture & Society*, 18(2), 159–172.
- Opoku-Amankwa, K., Edu-Buandoh, D. F., & Brew-Hammond, A. (2014). Publishing for mother tongue-based bilingual education in Ghana: Politics and consequences. *Language and Education*, 29(1), 1–14. <https://doi.org/10.1080/09500782.2014.921194>
- Osborn, D. (2010). *African languages in a digital age: Challenges and opportunities for indigenous language computing*. Cape Town, South Africa: HSRC Press. Retrieved from http://www.hsrcpress.ac.za/downloadpdf.php?pdf=file%2Ffiles%2FPDF%2F2269%2FeBook_African_Languages.pdf&downloadfilename=African%20Languages%20in%20a%20Digital%20Age%20-%20Entire%20Ebook
- Ouane, A., & Glanz, C. (2010). Why and how Africa should invest in African languages and multilingual education: An evidence- and practice-based policy advocacy brief. Hamburg, Germany: UNESCO Institute for Lifelong Education.
- Oyo, B., & Kalema, B. (2014). Massive open online courses for Africa by Africa. *The International Review of Research in Open and Distributed Learning*, 15(6), 1–13.
- Paul, R. (1985). Bloom's taxonomy and critical thinking instruction. *Educational Leadership*, May, 36–39.
- Pence, A. R., & Marfo, K. (2008). Early childhood development in Africa: Interrogating constraints of prevailing knowledge bases. *International Journal of Psychology*, 43(2), 78–87. <https://doi.org/10.1080/00207590701859143>



- Pennycook, A. (1994). *The cultural politics of English as an international language*. London: Longman.
- Pennycook, A. (2001). *Critical applied linguistics: A critical introduction*. Mahwah, NJ: Lawrence Erlbaum.
- Pennycook, A. (2007a). ELT and colonialism. In J. Cummins & C. Davison (Eds.), *International Handbook of English Language Teaching* (Vol. 15, pp. 13–24). New York: Springer. https://doi.org/10.1007/978-0-387-46301-8_2
- Pennycook, A. (2007b). Language, localization, and the real: Hip-hop and the global spread of authenticity. *Journal of Language, Identity, and Education*, 6(2), 101–115.
- Phillipson, R. (1992). *Linguistic imperialism*. Oxford, England: Oxford University Press.
- Phillipson, R. (2009). *Linguistic imperialism continued*. New York: Routledge.
- Piper, B. (2010a). Ethiopia early grade reading assessment: Data analytic report: Language and early learning (Report). RTI International.
- Piper, B. (2010b). Uganda early grade reading assessment findings report: Literacy acquisition and mother tongue (Report). RTI International.
- Piper, B., & Korda, M. (2010). *EGRA Plus: Liberia. Program evaluation report*. RTI International and the Liberian Education Trust. Retrieved from <https://www.rti.org/publication/early-grade-reading-assessment-egra-plus-liberia-program-evaluation-report>
- Piper, B., & Miksic, E. (2011). Mother tongue and reading: Using early grade reading assessments to investigate language-of-instruction policy in East Africa. In A. Gove & A. Wetterberg (Eds.) (pp. 139–182). RTI. doi:10.3768/rtipress.2011.bk.0007.1109
- Piper, B., & Zuilkowski, S. S. (2015). Teacher coaching in Kenya: Examining instructional support in public and nonformal schools. *Teaching and Teacher Education*, 47, 173–183. <https://doi.org/10.1016/j.tate.2015.01.001>
- Piper, B., Jepkemei, E., Kwayumba, D., & Kibukho, K. (2015). Kenya's ICT policy in practice: The effectiveness of tablets and e-readers in improving student outcomes. *FIRE: Forum for International Research in Education*, 2(1), 3–18.
- Piper, B., Zuilkowski, S. S., & Mugenda, A. (2014). Improving reading outcomes in Kenya: First-year effects of the PRIMR Initiative. *International Journal of Educational Development*, 37, 11–21. <https://doi.org/10.1016/j.ijedudev.2014.02.006>
- Piper, B., Zuilkowski, S. S., & Ong'ele, S. (2016). Implementing mother tongue instruction in the real world: Results from a medium-scale randomized controlled trial in Kenya. *Comparative Education Review*, 60(4), 776–807. <https://doi.org/10.1086/688493>

- Plonski, P. J. (2009). Use of test score and interview data in a comparative case study of the influence of donated English language books upon reading fluency and comprehension scores for Tanzanian secondary school students (Doctoral dissertation). University of Minnesota. Retrieved from http://conservancy.umn.edu/bitstream/55919/1/Plonski_umn_0130E_10628.pdf
- Plonski, P. J. (n.d.). Providing books for schools and libraries in Africa: What is the impact on literacy? Retrieved from <http://www.booksforafrica.org/assets/documents/SanFranciscoAfricanStudiesAssnpaperNov10.pdf>
- Pôle de Dakar. (2013). *Sierra Leone: Education country status report*. Dakar, Senegal: Pôle de Dakar, UNESCO-Dakar Office.
- Pouezevara, S., Costello, M., & Banda, O. (2012). *Malawi national early grade reading assessment survey: Final assessment – November 2012*. Creative Associates International, RTI International, and Seward Inc.
- Prah, K. K. (2003). Going native: Language of instruction for education, development and African emancipation. In B. Brock-Utne, Z. Desai, & M. A. S. Qorro (Eds.), *Language of instruction in Tanzania and South Africa (LOITASA)* (pp. 14–34). Dar es Salaam, Tanzania: E & D Publishers.
- Prah, K. K. (Ed.). (2002). *Writing African: The harmonisation of orthographic conventions in African languages*. Cape Town: Casas.
- Pretorius, E. J., & Machet, M. P. (2008). The impact of storybook reading on emergent literacy: Evidence from poor rural areas in Kwazulu-Natal, South Africa. *Mousaion*, 26(2), 261–289.
- Rea-Dickins, P., Yu, G., & Afitska, O. (2009). The consequences of examining through an unfamiliar language of instruction and its impact for school-age learners in sub-Saharan African school systems. In L. Taylor & C. J. Weir (Eds.), *Language testing matters: Investigating the wider social and educational impact of assessment* (pp. 190–204). Cambridge, England: Cambridge University Press.
- Reiner, P. (2011). Promise and pitfalls – a commercial view of publishing in African languages. In A. Ouane & C. Glanz (Eds.), *Optimising learning, education and publishing in Africa - the language factor: A review and analysis of theory and practice in mother-tongue and bilingual education in sub-Saharan Africa* (pp. 311–339). Hamburg, Germany: Unesco Institute for Lifelong Education.
- Results for Development. (2016). *Global Book Fund feasibility study*. Results for Development Institute (R4D) and International Education Partners (IEP). Retrieved from http://www.r4d.org/sites/resultsfordevelopment.org/files/resources/R4D-IEP_GBF_ExecSummary_web.pdf
- Romaine, S. (2013). Keeping the promise of the Millennium Development Goals: Why language matters. *Applied Linguistics Review*, 4(1), 1–21. <https://doi.org/10.1515/applirev-2013-0001>



- RTI International (2016). Survey of children's reading materials in African languages in eleven countries – final report.
- RTI International, & FHI 360. (2013). Midterm assessment of the impact of early grade reading and math interventions.
- Rubagumya, C. M. (2009). The politics of language and literacy in Africa: The experience of Tanzania. In K. Parry (Ed.), *Reading in Africa, beyond the school* (pp. 11–23). Kampala, Uganda: Fountain Publishers.
- Sailors, M., & Flores, M. (2014). Cost effectiveness of a complementary reading program. *Journal of Education and Human Development*, 3(4), 1–20. <https://doi.org/10.15640/jehd.v3n4a1>
- Sailors, M., & Price, L. (2015). Support for the Improvement of Practices through Intensive Coaching (SIPIIC): A model of coaching for improving reading instruction and reading achievement. *Teaching and Teacher Education*, 45, 115–127. <https://doi.org/10.1016/j.tate.2014.09.008>
- Sailors, M., & Shanklin, N. L. (2010). Introduction: Growing evidence to support coaching in literacy and mathematics. *The Elementary School Journal*, 111(1), 1–6. <https://doi.org/10.1086/653467>
- Sailors, M., Hoffman, J. V., Pearson, P. D., Beretvas, S. N., & Matthee, B. (2010). The effects of first- and second-language instruction in rural South African schools. *Bilingual Research Journal*, 33(1), 21–41. <https://doi.org/10.1080/15235881003733241>
- Sailors, M., Hoffman, J. V., Pearson, P. D., McClung, N., Shin, J., Phiri, L. M., & Saka, T. (2014). Supporting change in literacy instruction in Malawi. *Reading Research Quarterly*, 49(2), 209–231. <https://doi.org/10.1002/rrq.70>
- Schubert, J. (2005). The reality of quality improvement: Moving toward clarity. In A. M. Verspoor (Ed.), *The challenge of learning: Improving the quality of basic education in sub-Saharan Africa* (pp. 53–68). Paris: Association for the Development of Education in Africa (ADEA).
- Schweisfurth, M. (2011). Learner-centred education in developing country contexts: From solution to problem? *International Journal of Educational Development*, 31(5), 425–432. <https://doi.org/10.1016/j.ijedudev.2011.03.005>
- Semela, T. (2014). Teacher preparation in Ethiopia: A critical analysis of reforms. *Cambridge Journal of Education*, 44(1), 113–145. <https://doi.org/10.1080/0305764X.2013.860080>
- Skutnabb-Kangas, T. (2000). Linguistic genocide in education—or worldwide diversity and human rights? Mahwah, NJ: Lawrence Erlbaum.
- Skutnabb-Kangas, T. (2008). Human rights and language policy in education. In N. H. Hornberger (Ed.), *Encyclopedia of Language and Education* (2nd ed., pp. 107–120). New York: Springer. https://doi.org/10.1007/978-0-387-30424-3_9

- Stranger-Johannessen, E. (2015). Constructing English as a Ugandan language through an English textbook. *Language, Culture and Curriculum*, 28(2), 126–142.
<https://doi.org/10.1080/07908318.2014.987296>
- Stranger-Johannessen, E. (2017). The African Storybook, teachers' resources, and pedagogical practices. *International Journal of Educational Development*, 52, 26–36.
<https://doi.org/10.1016/j.ijedudev.2016.10.003>
- Stranger-Johannessen, E. (forthcoming). The African Storybook and teacher identity. Doctoral dissertation.
- Stranger-Johannessen, E., & Norton, B. (2017). The African Storybook and language teacher identity in digital times. *The Modern Language Journal*, 101(S1), 45–60.
<https://doi.org/10.1111/modl.12374>
- Sunderland, J., Cowley, M., Abdul Rahim, F., Leontzakou, C., & Shattuck, J. (2000). From bias “in the text” to “teacher talk around the text.” *Linguistics and Education*, 11(3), 251–286.
[https://doi.org/10.1016/S0898-5898\(00\)00034-6](https://doi.org/10.1016/S0898-5898(00)00034-6)
- T-TEL. (n.d.). About us. Retrieved from <http://www.t-tel.org/about/about-us.html>
- Teemant, A., Wink, J., & Tyra, S. (2011). Effects of coaching on teacher use of sociocultural instructional practices. *Teaching and Teacher Education*, 27(4), 683–693.
<https://doi.org/10.1016/j.tate.2010.11.006>
- Tembe, J., & Norton, B. (2008). Promoting local languages in Ugandan primary schools: The community as stakeholder. *Canadian Modern Language Review/La Revue Canadienne Des Langues Vivantes*, 65(1), 33–60.
- Tembe, J., & Norton, B. (2011). English education, local languages and community perspectives in Uganda. In H. Coleman (Ed.), *Dreams and realities: Developing countries and the English language* (pp. 114–136). London: British Council.
- Tessema, K. A. (2006). Contradictions, challenges, and chaos in Ethiopian teacher education. *Journal for Critical Education Policy Studies*, 4(1), 195–224.
- Tessema, K. A. (2007). The teacher education reform process in Ethiopia: Some consequences on educators and its implications. *Teaching Education*, 18(1), 29–48.
<https://doi.org/10.1080/10476210601151532>
- The Standard. (2016). Review of 8-4-4 has been long overdue. Retrieved from <https://www.standardmedia.co.ke/article/2000196351/review-of-8-4-4-has-been-long-overdue>
- Theodora. (2017). Liberia people 2017. Retrieved from http://www.theodora.com/wfbcurent/liberia/liberia_people.html
- Tilson, T., Kamlongera, A., Pucilowski, M., & Nampota, D. (2013). Evaluation of the Malawi teacher professional development support (MTPDS) program: Final evaluation report. USAID.

- Trading Economics. (n.d.). Ghana - Urban population (% of total).
<http://www.tradingeconomics.com/ghana/urban-population-percent-of-total-wb-data.html>
- Trilling, B., & Fadel, C. (2013). *21st century skills: Learning for life in our times*. San Francisco: Jossey-Bass.
- Trivette, C. M., Simkus, A., Dunst, C. J., & Hamby, D. W. (2012). Repeated book reading and preschoolers' early literacy development. *Center for Early Literacy Learning*, 5(5), 1–13.
- Trudell, B. (2013). Early grade literacy in African schools: Lessons learned. In H. McIlwraith (Ed.), *Multilingual education in Africa: Lessons from the Juba language-in-education conference* (pp. 155–161). London: British Council. Retrieved from
<https://www.teachingenglish.org.uk/article/multilingual-education-africa-lessons-juba-language-education-conference>
- UNDP. (2016). Human Development Data (1990-2015). Retrieved from <http://hdr.undp.org/en/data>
- UNDP. (n.d.). Goal 4 targets. Retrieved from
<http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-4-quality-education/targets/>
- UNESCO. (2000). The Dakar Framework for action. Retrieved from
<http://unesdoc.unesco.org/images/0012/001211/121147e.pdf>
- UNESCO. (2012). Kenya EFA Profile. Retrieved from
<http://www.unesco.org/fileadmin/MULTIMEDIA/FIELD/Dakar/pdf/KenyaEFAprofileoct2012.pdf>
- UNESCO. (2014). Assessment of teacher education and development needs to ensure education for all (EFA): Needs assessment report.
- UNESCO. (2015). Ghana: Education for All 2015 National Review. Retrieved from
<http://unesdoc.unesco.org/images/0023/002314/231429e.pdf>
- UNICEF. (2009). Child friendly schools. Retrieved from
https://www.unicef.org/publications/files/Child_Friendly_Schools_Manual_EN_040809.pdf
- UNICEF. (2014). The Republic of Sierra Leone.
- UNICEF. (n.d.). Statistics. Retrieved from
https://www.unicef.org/infobycountry/kenya_statistics.html

- van der Veen, R., & Preece, J. (2005). Poverty reduction and adult education: Beyond basic education. *International Journal of Lifelong Education*, 24(5), 381–391.
<https://doi.org/10.1080/02601370500169723>
- van Lier, L. (2004). *The ecology and semiotics of language learning*. Norwell, MA: Kluwer Academic Publishers.
- van Lier, L. (2010). The ecology of language learning: Practice to theory, theory to practice. *Procedia - Social and Behavioral Sciences*, 3(0), 2–6.
<https://doi.org/10.1016/j.sbspro.2010.07.005>
- Vavrus, F. (2009). The cultural politics of constructivist pedagogies: Teacher education reform in the United Republic of Tanzania. *International Journal of Educational Development*, 29(3), 303–311. <https://doi.org/10.1016/j.ijedudev.2008.05.002>
- Vavrus, F., Thomas, M., & Bartlett, L. (2011). *Ensuring quality by attending to inquiry: Learner-centered pedagogy in sub-Saharan Africa*. Addis Ababa, Ethiopia: UNESCO: International Institute for Capacity Building in Africa.
- Wagner, D. A., Castillo, N. M., Murphy, K. M., Crofton, M., & Zahra, F. T. (2014). Mobiles for literacy in developing countries: An effectiveness framework. *PROSPECTS*, 44(1), 119–132.
<https://doi.org/10.1007/s11125-014-9298-x>
- Walter, S. L., & Chuo, K. G. (2012). *The Kom Experimental Mother Tongue Education Pilot Project: Report for 2012*. Retrieved from <http://www.mlenetwork.org/content/kom-experimental-mother-tongue-education-pilot-project>
- Walter, S. L., & Trammell, K. (2010). *The Kom experimental mother tongue education project report for 2010* (Project report). Mother Tongue Based–MultiLingual Education Network. Retrieved from <http://www.mlenetwork.org/content/kom-experimental-mother-tongue-education-project-report-2010>
- Wane, N. (2009). Sexual violence and HIV/AIDS risks in Kenyan & Ugandan schools: Social implications for educational policy development. *Journal of Contemporary Issues in Education*, 4(1), 71–91.
- Warschauer, M. (2003). *Technology and social inclusion: Rethinking the digital divide*. Cambridge, MA: MIT Press.
- Warschauer, M., & Matuchniak, T. (2010). New technology and digital worlds: Analyzing evidence of equity in access, use, and outcomes. *Review of Research in Education*, 34(1), 179–225. doi:10.3102/0091732X09349791
- Waruingi, G. (2009). Book donations: What are East Africans reading? In K. Parry (Ed.), *Reading in Africa, beyond the school* (pp. 29–34). Kampala, Uganda: Fountain Publishers.
- WE Charity. (2017). Sierra Leone. Retrieved from <https://www.we.org/we-villages/where-we-work/sierra-leone/>

- Weber, D. (2016). How can instructional materials and supplementary reading materials be effectively developed for target populations speaking multiple dialects? In B. Trudell & C. Young (Eds.), *Good answers to tough questions in mother tongue-based multilingual education* (pp. 31–35). SIL International.
- Welch, T., & Glennie, J. (2016). Open educational resources for early literacy in Africa: The role of the African Storybook Initiative. In F. Miao, S. Mishra, & R. McGreal (Eds.), *Open educational resources: Policy, costs and transformation*. Paris: UNESCO.
- Williams, S. E. (2010). Exploring the viability of school-based support for vulnerable children: A case study of two township schools in Johannesburg. Brighton, UK: Consortium for Educational Access, Transitions and Equity (CREATE).
- Williams, T. P., Abbott, P., & Mupenzi, A. (2015). “Education at our school is not free”: The hidden costs of fee-free schooling in Rwanda. *Compare: A Journal of Comparative and International Education*, 45(6), 931–952. <https://doi.org/10.1080/03057925.2014.938611>
- World Bank. (2002). *World Bank support for provision of textbooks in Sub-Saharan Africa 1985–2000*. African Region Human development Working Paper Series. Washington, DC: The World Bank. Retrieved from http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2002/08/09/000094946_0207270405422/Rendered/PDF/multi0page.pdf
- World Bank. (2007). Education in Sierra Leone: Present challenges, future opportunities. World Bank.
- World Bank. (2008). *Textbooks and school library provision secondary education in Sub-Saharan Africa*. Washington, DC: World Bank. <https://doi.org/10.1596/978-0-8213-7344-6>
- World Bank. (2016a). Net enrolment rate, primary, both sexes (%). Retrieved from <http://data.worldbank.org/indicator/SE.PRM.NENR?locations=GH>
- World Bank. (2016b). Population, total. Retrieved from <http://data.worldbank.org/indicator/SP.POP.TOTL?locations=SL>
- World Bank. (n.d.). Gross enrollment ratio, primary, both sexes (%). Retrieved from <http://data.worldbank.org/indicator/SE.PRM.ENRR>
- Zell, H. M. (1993). Publishing in Africa: The crisis and the challenge. In O. Owomoyela (Ed.), *A history of twentieth century African literatures* (pp. 369–387). Lincoln, NE: University of Nebraska Press.
- Zell, H. M. (2013). Print vs. electronic, and the “digital revolution” in Africa. *The African Book Publishing Record*, 39(1), 1–19. <https://doi.org/10.1515/abpr-2013-0001>

Appendix A: 21st Century Skills

Based on p21.org/storage/documents/docs/P21_Framework_Definitions_New_Logo_2015.pdf

Learning and Innovation Skills

Creativity and Innovation

- Create new and worthwhile ideas
- Elaborate, refine, analyze and evaluate their own ideas

Critical Thinking and Problem Solving

- Effectively analyze and evaluate evidence, arguments, claims and beliefs
- Reflect critically on learning experiences and processes
- Use various types of reasoning as appropriate to the situation; Identify and ask questions that clarify points of view

Communication and Collaboration

- Articulate thoughts and ideas effectively in a variety of forms and contexts
- Demonstrate ability to work effectively and respectfully with diverse teams
- Exercise flexibility and willingness to be helpful in making compromises

Information, Media and Technology Skills

Information Literacy

- Evaluate information critically and competently

Media Literacy

- Understand both how and why media messages are constructed
- Examine how media can influence beliefs and behaviours

ICT Literacy

- Use digital technologies to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy

Life and Career Skills

Flexibility and Adaptability

- Adapt to varied roles, jobs responsibilities, schedules and contexts

Initiative and Self-Direction

- Monitor, define, prioritize and complete tasks without direct oversight
- Explore and expand one's own learning and opportunities to gain expertise

Social and Cross-Cultural Skills

- Leverage social and cultural differences to create new ideas and increase both innovation and quality of work

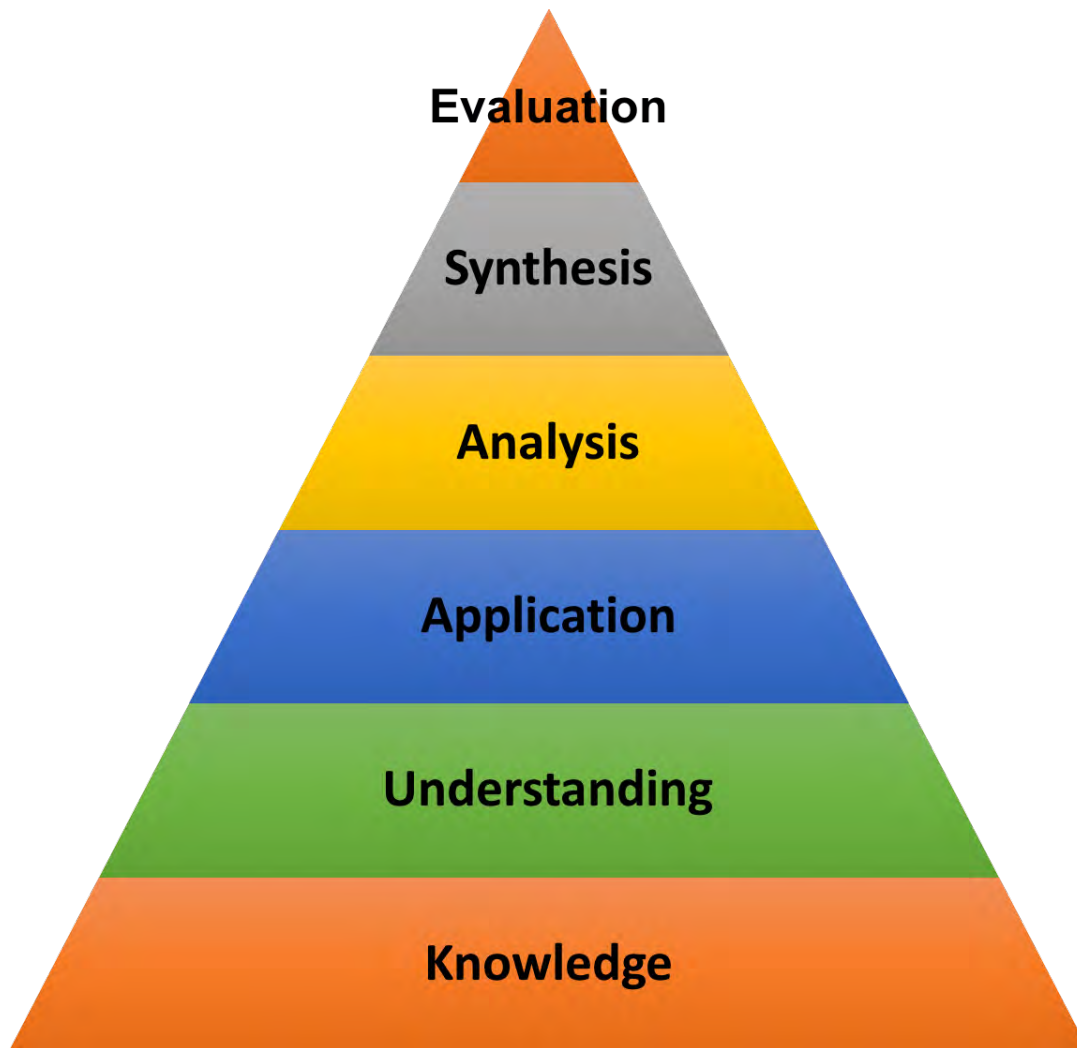
Productivity and Accountability

- Prioritize, plan and manage work to achieve the intended result

Leadership and Responsibility

- Use interpersonal and problem-solving skills to influence and guide others toward a goal

Appendix B: Bloom's Taxonomy



Source: <https://commons.wikimedia.org/wiki/File:Blooms-pyramid.png>



Appendix C: Questionnaire on Teacher Education in Ethiopia

Written by Haregewoin Fantahun Eshete

1. Based on your own experience, please give a brief overview of pre-service teacher education in Ethiopia, such as teaching methods, literacy teaching component, funding, and duration.

Regarding teacher education in Ethiopia, I'd like to begin with the status of teaching as a profession. In the past, it was a very prestigious one. These days, only those who do not have any other options have joined teaching. It is the least chosen, least paid and least prestigious. The donor driven ever changing teacher training program is the other contributing factor. In the past, the country implemented the TESO program, without a thorough study on the benefits and drawbacks, now GEQIP (General Education Quality Improvement Program) which promotes the add-on training system has been in place.

2. Based on your own experience, please give a brief overview of in-service teacher education in Ethiopia, such as teaching methods, literacy teaching component, funding, and frequency/duration.

To begin with, the recruitment of teachers who are supposed to join in-service teacher education program is not based on the efficiency, or performance of teachers. Primarily they are given this opportunity simply because they are cadres or otherwise. Secondly, they are sometimes forced to join the program just to meet the millennium development goal. As far as the teaching methods are concerned, they are there. Attempts are made to implement them but due to shortage of time (two summers) is comparatively short. The teacher education program is donor driven. That is probably why there has not been any significant change. The program is not based on needs assessment.

3. What policies are there (if any) on teacher education in Ethiopia? What do they emphasise?

There is an Education Policy and ESDPs (1-4). They all emphasize the promotion of quality education to all Ethiopians. The recruitment policy is also there. The policies as polices do not have any problem. They incorporate elements that a sound policy needs to have. However, there is a problem of operationalizing them. Things have not been done in line with what the policies promise. What we preach and what we do are different.

4. Please provide a (rough) timeline and overview of key developments in teacher education, such as institutional or curriculum changes.

What has been an encouraging development is the fact that there has been a change in the physical structure. We can see changes in the infrastructure only. The curriculum has been reviewed or updated every time. Nevertheless, as mentioned earlier, it has not been fully materialized. The problem is that since teaching is not a rewarding profession, those who join the profession are those who are least achievers or those who can not join other fields of study. That is may be why there has been observable challenges to implement the curriculum as intended as the capacity of the trainees is sometimes low.

5. Please state some current and/or planned initiatives/changes regarding teacher education (if any), such as source, rationale, funding, and implementation.

Always, there have been initiatives. The concerned bodies have been propagating to provide quality education, for example. Everybody knows that the quality of education has been deteriorating from time to time. So, 'quality' has been the discourse of the time. Contrary to this, we can see things that hinder quality, for example, recruitment, material preparation, class size,



inconvenient learning environment (school environment), incentives etc. In brief, we have been told that there are changes regarding teacher education but the changes are not visible in terms of bringing change of behaviour on the part of students. Teachers are engaged in other activities that make them earn additional income. This is because they feel that they are less paid.

Currently, the government has shown an attempt to provide houses to teachers, which is one of the problems they are facing. Even then some teachers complain that the provision of houses in some cases is not fair due to a number of reasons one of which is political loyalty.

6. Please describe the role of ICT in teacher education, in policy and practice, as applicable, such as underlying views of ICT (e.g., more effective learning, technology skills, communication skills, critical thinking, media literacy, etc.).

There is no question about the role of ICT in teacher education. ICT plays significant roles in teacher education. But it has not been fully executed in our case. Attempts have been made to acquaint teachers with the role of ICT in teacher education. What is paradoxical is that there is no easy access to computers, internet or websites etc. In some cases teachers are occupied by running their own business or doing other part time jobs such as tutoring. So, they don't have time to log into their computers.

7. Please describe teacher education from a pedagogical perspective – in terms of content and how it connects to actual classroom practice, such as the relationship between assessment and instruction, purposes of student assessment, formative and summative methods, and frequency.

The teacher education in terms of content is smart. Almost every integral element is included in the content. Everything mentioned in the question are there in the content theoretically speaking. In short, the teacher education has no problem when we see it from pedagogical perspective. The problem is its operationalization on the ground.

8. Please describe how pre-service teachers are assessed, and what teacher education teaches about assessment of students.

Pre-service teachers are assessed continuously. For example, they are assessed through tests, exams, paper work, micro teaching and practicum. They also carry out action research and present their findings.

9. In your opinion, what are the major challenges for teacher education in Ethiopia, and how should these be addressed?

Recruitment is the major challenge. Only those who are devoted to the profession and those who are able to do should join the profession. It shouldn't be a stop and go job as some teachers think. It is not a prestigious profession in our society. The mind set up of our society is another challenge. Some people think that this is lowest and least privileged job. Teachers do not have their own say. They are not encouraged to take part in the process of curriculum development. So there is sense of belongingness. The behaviour of students is going from bad to worse. In some cases no disciplinary measures are taken. Teachers are always in confrontation with their students concerning their grades, promotion and the like. No one backs teachers. The relationship between teachers and parents is almost none. How should these be addressed is a difficult question to answer because there are a number of contributing factors. But to mention few, teachers have to be paid a better wage. More attempts have to be made to privilege teachers in terms of health care and other social benefits.

10. Do you have any other comments regarding teacher education that are not already covered in this questionnaire?

I think the key points have been already covered in the questionnaire.



Appendix D: Questionnaire on Teacher Education in Ghana

Written by Mumuni Thompson

1. Based on your own experience, please give a brief overview of pre-service teacher education in Ghana, such as teaching methods, literacy teaching component, funding, and duration.

There are two types of pre-service teacher education programmes in Ghana namely; diploma and degree. The diploma programmes are run by colleges of Education while the degree programmes are run by two universities in Ghana (University of Cape Coast, University of Education, Winneba). The activities of the colleges of education in terms course content, methods of teaching, summative evaluation are determined by the Institute of Education in Ghana which is sited at the University of Cape Coast. The duration of the diploma programme is 3 years while the degree is 4 years. The programmes are fully funded by the government of Ghana. However, in recent times, a British NGO, T-TEL (Transforming Teacher Education and Learning), has injected huge financial resources to enhance and improve the quality of pre-service education in the country in terms of content and methods of teaching.

2. Based on your own experience, please give a brief overview of in-service teacher education in Ghana, such as teaching methods, literacy teaching component, funding, and frequency/duration.

The Ghana Education service organises periodic in-service training for teachers in all the subject areas including language and literacy to upgrade their knowledge regarding modern trends in teaching. The government of Ghana and Non-Governmental organisations such as Action Aid fund it.

3. What policies are there (if any) on teacher education in Ghana? What do they emphasise?

The entry requirements have recently been reviewed. Thus, prospective candidates are expected to have grades ranging from A to C with respect to the core subjects (Mathematics, English Language, Integrated science) as well as grades ranging from A to C in other subject areas before they can be admitted to the colleges of education.

4. Please provide a (rough) timeline and overview of key developments in teacher education, such as institutional or curriculum changes.

The Institute of Education in partnership with a British NGO(T-TEL) has reviewed the teacher programme. Currently, the tutors at the colleges of education are going through training with respect to how to implement the new curriculum. Also, funding has been provided by the NGO to enable the colleges to procure teaching and learning resources to enhance and promote effective teaching and learning.

5. Please state some current and/or planned initiatives/changes regarding teacher education (if any), such as source, rationale, funding, and implementation.

Currently, the teacher education programme which is under the auspices of the Institute of Education has received substantial funding and technical support from a British Non-Governmental Organisation (T-TEL).

6. Please describe the role of ICT in teacher education, in policy and practice, as applicable, such as underlying views of ICT (e.g., more effective learning, technology skills, communication skills, critical thinking, media literacy, etc.).

ICT is a driving force in the teacher education programme in Ghana. However, it is only tutors in the ICT sector who would be able to provide the requisite information you need.



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7. Please describe teacher education from a pedagogical perspective – in terms of content and how it connects to actual classroom practice, such as the relationship between assessment and instruction, purposes of student assessment, formative and summative methods, and frequency.

The teacher education programme in Ghana is based on four cardinal principles namely; given students in-depth knowledge in content courses and their corresponding instructional strategies, how to develop teaching and learning materials and how to construct various levels of questions for formative and summative assessment purposes and practical hand-on experiences. Formative evaluation is done by the tutors at the colleges of education while the Institute of Education in Ghana superintends over the conduct of summative evaluation.

8. Please describe how pre-service teachers are assessed, and what teacher education teaches about assessment of students.

The assessment regime at the colleges of education and at the universities comprised formative and summative. The total examination score of a student is, therefore, determined by the scores one obtained from formative assessment (40%) and summative assessment (60%) determine the grade a student gets at end of a course session.

9. In your opinion, what are the major challenges for teacher education in Ghana, and how should these be addressed?

There used to be inadequate funding but the British NGO (T-TEL) has come to bridge the gap a bit.

10. Do you have any other comments regarding teacher education that are not already covered in this questionnaire?

No.



Appendix E: Questionnaire on Teacher Education in Liberia

Written by Yvonne Capehart

1. Based on your own experience, please give a brief overview of pre-service teacher education in Liberia, such as teaching methods, literacy teaching component, funding, and duration.

Pre-service teacher training in Liberia is provided by Universities and teacher training institutions. The methods of teaching is usually lecture style. There is a course called “teaching strategy/method” or “teaching methodology.” The instructors usually use this course to tell students about the different styles of teaching and the teacher centered and student centered method of teaching. There is no “Literacy teaching” component at the universities. They have language arts or English grammar. The rural teacher training curriculum has “Basic Literacy” components in English, Math and Science.

At the church-run universities students pay tuition, donations and other support come from foreign aid. The public university is the cheapest but is being subsidized by government.

The rural teacher training institutes are tuition free. Over the past 8 years they were supported by USAID and the government. They were catering to both in-service and pre-service teachers and the duration of training was 9 months. This program awards “C” certificate and it qualifies teachers to teach at the primary level (grades 1-6).

There are other teacher training institutes that are providing training focus on teaching practice (pedagogy) and content. Students pay minimum fees and other funding comes from grants and donations. The duration of these programs are 12 to 18 months.

2. Based on your own experience, please give a brief overview of in-service teacher education in Liberia, such as teaching methods, literacy teaching component, funding, and frequency/duration.

In-service teacher education in Liberia are provided by non-profit organizations and the government through the rural teacher training institutions (RTTI). As mentioned above, the RTTI has a course referred to as Basic Literacy. These institutions are funded by USAID and the government. It is a residency program. Government provide funding for the payment of the staff while USAID provided funding for the general operation of the 3 institutions.

The Non-profit Organizations in Liberia that are providing teacher training in teaching methods and literacy teaching for in-service teachers are few. There are organizations that would hold literacy workshops for a couple of schools (2 teachers from each school) in an area for only three to four days and gave some handout to the participants. There are three programs on literacy teaching that are systematic:

- Reading Liberia – WE-CARE/CODE
- ERGA – USAID
- Liberia Reads – US based funding

The largest in terms of reach (800 schools, 8 counties) is the USAID funded program: early grade reading and math, EGRA and EGMA. The EGRA training is done over the period of one academic year through 4 five day workshop and teacher support in the classroom by coaches. Phonic and math books along with teacher guide are supply to the schools in the project.

Reading Liberia is the most comprehensive literacy program that combines teaching methods for activity and participatory learning and critical thinking with literacy teaching. Library with culture relevant books are provided along with support for teachers in the classroom by monitors



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and mentors. The duration of the program is two years. 4 five day workshops with mentoring of teachers in the classroom between workshops, forming of teacher clubs to keep them motivated.

3. What policies are there (if any) on teacher education in Liberia? What do they emphasise?
Policies on teacher education in Liberia are:

Liberia Education Administration, Regulations and Management policies – this policy emphasis is on teacher qualification and legibility criteria, recruitment, deployment and professional development of teachers; salary and benefits. And evaluation of teachers (focus on code of conduct). This policy was written and validated more than 8 years ago but its implementation has not been enforced. The reality is that many component of this policy have not been implemented and more than 80 percent of teachers in Liberia have not read the policy nor have they seen it.

4. Please provide a (rough) timeline and overview of key developments in teacher education, such as institutional or curriculum changes.

Three years ago the C certificate curriculum for primary teachers was reviewed and upgraded to include more content and increase the duration of study from 9 months to 18 months. Teachers are trained at this level to teach the core subjects (language arts, science, math and social studies). Up to present the full implementation of this upgraded curriculum has not been done. All teacher training institutions in Liberia awarding C certificate are required to use this curriculum.

The Early Childhood Education (ECE) materials development has been going on for the last five years. It is in the following category:

- ECD policy
- Early childhood development community education awareness program (ECDCEAP)
- Early childhood development skill training education program (ECDSTEP)
- Teacher Planner
- Early Childhood higher education (courses, credits, standards and duration of study is develop)

However, each institution of higher education must develop their own curriculum conforming to the standards set.

The training of trainers started in 2014 but was disrupted due to the Ebola outbreak. Training of trainers are being conducted through three 5 day workshop at intervals. Two of the three workshops have been conducted. The third workshop is coming up in August 2017. In-service ECE teacher training is planned to be implemented in batches starting with four south eastern counties and one western county in September 2017.

5. Please state some current and/or planned initiatives/changes regarding teacher education (if any), such as source, rationale, funding, and implementation.

Since the civil war that started 1989, the B certificate program for junior high teachers was reinstated 2016. The curriculum was reviewed and updated. It is presently being piloted at the Kakata Rural Teacher Training Institute (KRTTI). The duration of study is 2 years. At the B certificate level teacher study in specialize course area. Funding for this program is coming from the European Union and the government.

6. Please describe the role of ICT in teacher education, in policy and practice, as applicable, such as underlying views of ICT (e.g., more effective learning, technology skills, communication skills, critical thinking, media literacy, etc.).



There is very little going on with ICT in teacher education. WE-CARE was providing a 6 weeks computer literacy training for teachers that were in the Reading Liberia program but 95 percent of the teachers did not have access to computers after the training. There is also a large number of teachers that are 50 years and above that cannot even browse the internet on their phones. Presently, the Ministry of Education is providing a 2 weeks computer literacy training for instructors of the rural teacher training institutes with funding from UNESCO. Teaching strategies that develop Critical thinking skills are provided to teachers presently by WE-CARE Reading Liberia and Critical Thinking programs.

There are very few media literacy programs. One of them came about as a result of the Ebola crisis when schools were closed indefinitely.

7. Please describe teacher education from a pedagogical perspective – in terms of content and how it connects to actual classroom practice, such as the relationship between assessment and instruction, purposes of student assessment, formative and summative methods, and frequency.

The RTTI's curriculum is scripted. The instructors teach directly from these scripted texts. This do not develop the skills of Creativity and innovation. When teachers leave teacher training and go into the classrooms they are expected to teach the required text. Most time they do not have the skills that are needed to plan and implement lessons taking into consideration individual learners. Creating the learning environment where learners can explore and experiment or having learners to make connections with their home or community. All the assessment of students are assessment of learning, whether formative or summative. These assessments are done to evaluate students' progress for promotion or retention. Teachers pay little attention to assessment for learning. Most time teachers do not spent the require time in class with students on task and they want to complete at least 80 percent of the syllabus. A lot of teachers skip topics and term them irrelevant.

8. Please describe how pre-service teachers are assessed, and what teacher education teaches about assessment of students.

At the universities besides the usual quizzes, mid-term and finals per semester, teachers are assessed at the end of the fourth year by a special committee. Students of the graduating class have to plan a 45 minutes lesson and teach it to their colleagues while the committee observe the process. The student is interviewed after his or her presentation. The student is graded based on his or her performance by the committee. If the telly of the scores are low the student will not be legible for graduation.

At the RTTI, students go through a basic skills training (English and math) for 2 months. An assessment is done. Students that do not meet the passing mark (70%) is dropped from the training. After another 4 months of study students are assigned to primary schools to practice teach for 6 weeks to 2 months. Students sit mid-term and final exams. I have not heard of a student that repeated the training because of low performance in the classroom during practicum.

Other teacher training programs providing pre-service and certificate level training assessment are similar to the universities but are operated for 9 to 12 months.

9. In your opinion, what are the major challenges for teacher education in Liberia, and how should these be addressed?

Education is a field that produces its own work force. Sub-standard education today will produced sub-standard teachers tomorrow. The major challenge for teacher education in Liberia is the lack of qualified, competent, efficient and effective instructional staff. Monitoring and supervision is also a challenge.



I think that this situation should be address through professional development along with a robust monitoring and supervision to ensure that teachers are applying what have been taught. Teachers should also be awarded based on merit and not blanket awards without performance. E.g., over the past 10 years teachers' salaries are increase annually while students learning outcomes have decreased or remain the same. Teacher education policies should be implemented or enforced. Student teacher radio should be addressed in most schools classes are overcrowded. Teachers that do not reach the minimum standards after professional development should be weeded out of the teaching field.

10. Do you have any other comments regarding teacher education that are not already covered in this questionnaire?

I think you did a good job with the questions.



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Appendix F: Questionnaire on Teacher Education in Tanzania

Written by Sam Andema

1. Based on your own experience, please give a brief overview of pre-service teacher education in Tanzania, such as teaching methods, literacy teaching component, funding, and duration.

Tanzania has a two-year pre-service teacher-training program. The minimum requirement for intake into the two-year pre-service program is that the candidate should have passed O-level in division 1, 2, or 3. The teaching method commonly used is mainly the lecture method. There is no explicit literacy-teaching component in the TTC curriculum. The main components of the TTC curriculum include education subjects (Foundations of Education, Curriculum, Research Measurement and Evaluation, ICT, Communication Skills); the academic subjects (Kiswahili, English, Science, Geography, History, Mathematics); and pedagogy subjects (Kiswahili pedagogy, English Pedagogy etc.). The medium of instruction at TTC is Kiswahili except in the teaching of English and Communication Skills. The students who complete the two-year course obtain certificate in teaching, which qualifies them to teach in primary schools. The main source of funding for teacher training is from government. However, students are required to cost share to complement the limited funding from government. They are charged some fees to pay.

2. Based on your own experience, please give a brief overview of in-service teacher education in Tanzania, such as teaching methods, literacy teaching component, funding, and frequency/duration.

See response above.

3. What policies are there (if any) on teacher education in Tanzania? What do they emphasise?

There is no specific policy on teacher education. However, issues to do with teacher education are addressed in other policy documents e.g. Education and Training Policy, government circulars, teacher education curriculum etc.

4. Please provide a (rough) timeline and overview of key developments in teacher education, such as institutional or curriculum changes.

Initially the TTCs offered certificate in teaching course. In 2015 Diploma in primary education was introduced in TTCs, which were under National Council for Technical Education (NATE). This year 2017, the diploma course has been abandoned and TTCs have gone back to reintroduce the 2 yrs. Certificate program.

5. Please state some current and/or planned initiatives/changes regarding teacher education (if any), such as source, rationale, funding, and implementation.

6. Please describe the role of ICT in teacher education, in policy and practice, as applicable, such as underlying views of ICT (e.g., more effective learning, technology skills, communication skills, critical thinking, media literacy, etc.).

ICT is taught as a course unit in PTCs. Some PTCs have computer laboratories that had Internet connectivity when external funding existed. There is a subject called “TEHAMA” (Information and technology). However these components of ICT training do not seem to translate into any meaningful practical integration of ICT in teaching and learning due to the mainly theoretical nature of teacher training

7. Please describe teacher education from a pedagogical perspective – in terms of content and how it connects to actual classroom practice, such as the relationship between assessment and instruction, purposes of student assessment, formative and summative methods, and frequency.



The training of teachers is largely knowledge based with minimal engagement of students in practical learning activities. Practicum is only two months a year, which does not give students enough exposure to practice during training.

8. Please describe how pre-service teachers are assessed, and what teacher education teaches about assessment of students.

TTCs have college-based end of term examinations. They also have national examinations at the end of the two years training administered by the National Examination Council of Tanzania. If students fail foundations of education subject (walim) in the national examination, they do not qualify to become teachers. If they fail 5 other subjects they are also disqualified from becoming teachers. This means examinations have a greater influence on the training of teachers in TTCs.

9. In your opinion, what are the major challenges for teacher education in Tanzania, and how should these be addressed?

The major challenges include: enrolment of students with low grades into TTCs, many tutors still have diplomas in teacher education and their knowledge base is narrow, inadequate funding, inadequate infrastructure, no mentoring of newly qualified teachers, limited professional development opportunities for tutors and teachers, no studies on the performance of tutors and teachers.

10. Do you have any other comments regarding teacher education that are not already covered in this questionnaire?