

Background Paper

Secondary Education in Sub-Saharan Africa
Teacher Preparation and Support

Case study: Rwanda

MARCH 2019



Secondary Education in Africa:

**PREPARING YOUTH
FOR THE FUTURE
OF WORK**

This paper was prepared for the Mastercard Foundation report, *Secondary Education in Africa: Preparing Youth for the Future of Work*. The opinions, findings, and conclusions stated herein are those of the authors and do not necessarily reflect those of Mastercard Foundation.



*transformation
through knowledge*

CASE STUDY

Secondary Education in Sub-Saharan Africa Teacher Preparation and Support

Case study: Rwanda

Jost Uwase and Nick Taylor
March 2019

CONTENTS

CONTENTS	2
List of Tables	3
Acronyms and abbreviations	4
Background.....	6
Methodology	6
Document overview.....	6
Country context	7
History	7
School reform	8
Language	10
Finance	10
Information and communication technology in education.....	11
Challenges	13
ITE institutions	14
The types and nature of ITE qualifications.....	16
Selection into ITE	18
The content of ITE programmes.....	19
Induction	20
Licence to practice	20
Teacher performance management	20
Continuing Professional Development	21
Promotion	21
Conclusion	22
Improving the quality of ITE candidates and programme content.....	23
Continual Professional Development as standard practice	24
Improving the management and support of teachers	26
ACKNOWLEDGEMENTS.....	27
References.....	29
Appendix 1: Research products	33
Appendix 2: Research questions	34
Appendix 3: Key actors interviewed.....	36
Appendix 4: French-English-education programme structure.....	37



List of Tables

Table 1: Public education expenditure, 2015	10
Table 2: Number of users per computer in Rwandan schools.....	12
Table 3: Public and private tertiary enrolment in education programmes in 2016/2017	14
Table 4: Public and private tertiary graduates from education programmes 2015/2016	15
Table 5: Government support to students at UR	16
Table 6: ITE qualification types	17

Acronyms and abbreviations

A levels	Advanced levels
ADEA	Association for the Development of Education in Africa
B Ed	Bachelor of Education
BPM	best practice model
CPD	continuing professional development
DEO	district education officers
DRC	Democratic Republic of the Congo
EAC	East African Community
ECOWAS	Economic Community of West African States
GCE	general certificate of education
GCSE	general certificate of secondary education
GDP	gross domestic product
HEC	higher education council
INES-Ruhengeri	<i>Institut d'Enseignement Supérieur de Ruhengeri</i> (Ruhengeri Institute of Higher Education)
ITE	initial teacher education
MINALOC	Ministry of Local Government
MINEDUC	Rwanda Ministry of Education
MDGs	millennium development goals
MKU	Mount Kenya University Rwanda
NGO	non-governmental organisation
NTCs	national teacher colleges
NTP	national teacher policy
O levels	Ordinary levels
PASEC	Programme for the Analysis of Education Systems
PCK	pedagogic content knowledge
REB	Rwanda Education Board
RSA	Republic of South Africa
SAQMEC	The Southern and Eastern Africa Consortium for Monitoring Educational Quality
SEA	secondary education in Africa
SK	subject knowledge
SSA	sub-Saharan Africa
SSL	school subject leader
SBM	school-based mentor
TIET	teacher instructor education and training
TMIS	teacher management information system
TSC	teacher service commission
UIS	UNESCO Institute for Statistics
UN	United Nations



UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIK	University of Kibungo
UPE	universal primary education
UR-CE	University of Rwanda – College of Education
USE	universal secondary education
WDA	Workforce Development Authority

Background

Commissioned by the Varkey Foundation, this report is one component of a wide-ranging study on the education of secondary school teachers in sub-Saharan Africa. It informs and provides direct input into the larger study, which culminates in an Overview Report. The Overview Report is one of 13 background papers which contribute to a comprehensive study of secondary education in Africa (SEA) coordinated by the Mastercard Foundation and supported by a number of education partners operating across the continent. The full set of research products produced is given in Appendix 1.

Methodology

Rwanda is one of four case studies selected for this research. The rationale for inclusion was based on both design and practical considerations, weighing up the need to conduct timely, rapid research and an identification of Rwanda as a country with a number of valuable lessons to add. Alongside in-depth research from Senegal, South Africa, and Rwanda the case studies are designed to inform the development of a best practice model for the continent.

The study's theoretical framework was developed out of the Literature Review, which also produced a set of research questions (detailed in Appendix 2) that guided the work of all components, including this case study. The report is structured according to these questions, and following an outline of the context in which teacher education in the country finds itself.

Data for the case study was derived from academic and other literature, as well as interviews with key role players in the field of teacher education in Rwanda. These role players include government officials responsible for teacher education on a national and/or regional basis, teacher educators responsible for initial teacher education (ITE) and Continuous Professional Development (CPD), and teacher unions. Face-to-face interviews were conducted where possible, but some actors provided information via telephonic or electronic means. The list of interviewees is given in Appendix 3.

The researchers were unable to engage stakeholders from the Rwanda Education Board (REB), Ministry of Education (MINEDUC), or Teacher Services Commission (TSC) which presents a large gap in the data, particularly around Teacher Promotion, the status of Continuous Professional Development (CPD), and the Teacher Licensing process.

Document overview

We commence this report with a description of the context in which the country finds itself at present: historical trends, socio-economic climate and an overview of schooling and teacher education.

This is followed by an examination of the preparation, deployment and support of secondary school teachers in the country under the key areas identified in the Literature Review and listed in Appendix 2: institutions which deliver initial teacher education; the programmes they offer and selection criteria applied on entry; the induction, mentoring and certification of new teachers; continuing professional development; performance management; and promotion and career paths.

The conclusion assesses the extent to which the policies and practices described above accord with the ways in which teachers are treated in countries which maintain highly successful school systems, and speculates on the implications of these trends for the future of schooling in the country.

Country context

History

The education system in 2018 needs to be understood in the context of reforms which have taken place in the last three decades since the end of the devastating 1994 genocide which dismantled the education system and its infrastructure and inflicted untold suffering on learners, teachers and communities. Prior to 1994, the education system was characterised by racist and elitist ‘ethnic and regional’ quotas which overrode academic considerations (UNESCO 2015) first under Belgian colonial governments and thereafter under post-independence governments.

Under the Belgian colonial government, the population was classified along ethnic lines, with the numerically smaller Tutsis given preference over the Hutus. After independence in 1960, the focus was on the restructuring of the education system and development of a national curriculum. The primary focus was on expanding access to schooling across the country. From 1962, when Rwanda gained Independence from Belgium, Kinyarwanda – a language spoken by 99.4% of the population (Rosendal, 2009) - was the designated language of instruction from Grades 1-3. By 1978, a general reform of ‘Rwandazation’ was launched and this was extended to the first eight years of schooling (Pearson, 2013).¹

¹ Subsequent reforms have been made, with English becoming an official medium of instruction in 2008. UNICEF (2016) describes the subsequent language of instruction reforms as follows: “In 1991, after a nationwide exam revealed poor overall French language ability among students, MINEDUC announced in 1991 a shift back to the previous system. After the Rwandan genocide of 1994, large numbers of Rwandans began returning from exile in the surrounding Anglophone countries. In response, in 1996 MINEDUC announced a new education reform which designated Kinyarwanda as the medium of instruction from grades 1 to 3, with English joining French as medium of instruction for grades 4 to 6.”

Nevertheless, even under an independent government continuing ethnic tensions culminated in the genocide during which over 800 000 citizens, mainly Tutsis, were slaughtered. More than two decades after the genocide most would agree that the country represents ‘... a remarkable story of renewal and rapid economic development’, but that this peace and prosperity is accompanied by a restriction on media freedom and human rights (VOA News, 2018; BBC, 2018).

An important recent development is the Rwandan government’s plan for social and economic development, with the ultimate goal of being a prosperous nation by 2020 (Harrison, 2005; MINEDUC, 2016a). The Vision 2020 plan is centred on ‘a prosperous knowledge-based economy’. The plan contains six pillars and four cross-cutting domains, one of which is science and technologies, including ICTs. The result of these efforts has been described as ‘... the installation of one of the best information technology networks in Africa’ (Epstein, 2018: 16).

School reform

The country has moved rapidly towards universal schooling in the last decade. In 2008, restructuring of schooling was accompanied by the introduction of a policy to provide 9 years of free schooling (the so-called 9YBE) to all children, consisting of 6 years of primary education and the first 3 years of secondary school. In order to reduce the costs and time to complete the roll out the programme, three strategies were adopted: specialization of teachers, reduction of core courses and double-shifting. It was calculated that these measures caused a decline in the pupil teacher ratio of 56: 1 to 45 in Grades 1- 3 and to 37:1 in grades 4-6 (MINEDUC 2008). These figures would indicate that there is no shortage of teachers at primary level. The proportion of trained primary school teachers in the system increased from some 55% in 2000 to close to over 90% 15 years later (UNESCO, 2017; MINEDUC, 2016c).

A very different picture emerges at secondary level, where in 2015 15.4% of schools were private, 29.4% were public and 55.2% were government aided. The highest number of students enrolled was in government aided schools (54.5%) and the lowest number was in private schools (14.9%). Most state-aided schools are under the direction of a variety of churches. The gross enrolment rate is 38% and the net enrolment rate is 28%, with girls outnumbering boys in the ratio 53:47. In Rwanda the gap between trained (50%) and qualified (75%) teachers is narrower than for many other SSA countries (UNESCO, 2017).

The institution of free primary schooling was followed in 2013 by two major developments: the announcement of the intention to make 12 years of free schooling available and the establishment of the University of Rwanda, by merging seven higher education public institutions to form the country’s only public university. The teacher education system has been reformed, with secondary pre-service teacher education largely falling under the auspices of the University of Rwanda College of Education (UR-CE) (UNESCO 2015).

The current strategy with respect to schooling is based on the recognition that “the teacher is the main instrument for bringing about desired improvements in learning, and that adequate teacher management structures, policies and strategies are key factors that determine teacher performance,” set out in the Teacher Development and Management Policy (MINEDUC 2007).

The policy’s main sector strategies include:

- Reorganising the financing of teacher training through a new regulatory framework that would strengthen the support given to primary teacher training, and lower- and upper-secondary teacher training (including other MINEDUC institutions).
- Developing and installing a framework for motivation that will enhance the socio-economic and professional status of teachers, including clearly-defined career guidelines.
- Developing and implementing a well-structured programme of continuous professional development for teachers.
- Carrying out a national projection of teachers aimed at meeting the needs for quality improvement and teacher education budget rationalisation.
- Preparing a teacher appraisal scheme that would streamline the licence renewal system as well as identify potentialities for financing the teaching force.
- Implementing a cost-reduction strategy through improved efficiency and the minimisation of wastage of resources.
- Developing a sustainable system of professional support to teachers that would meet their challenges and enhance their commitment.
- Providing mechanisms that will facilitate equitable placement of all teachers by the District Education Officers (DEOs) in consultation with the Teacher Service Commission (TSC) (MINEDUC 2007).

The Teacher Development and Management Policy lists the following sector programmes:

- Implementation of a teacher development model to guide the promotion of teachers based on performance criteria and agreed career paths.
- Implementation of a core teaching values and competences profile in the assessment of teachers.
- Use of teacher education curriculum and assessment framework for monitoring and evaluation.
- Application of the scheme for teacher training recruitment and selection.
- New scheme for incentive for secondary school teacher training.
- Incorporation of the new patterns of training and certification requirements.
- Improvement of the status of school-based training through an on-the-job mentoring system.
- Establishment of technical training and technical teacher education.
- Establishment of professional training and professional teacher education.
- Establishment and development of continuing professional development (MINEDUC 2007).

The aims of this comprehensive reform programme cannot be faulted but, as we shall see below, implementation is somewhat uneven.

Language

Another major reform initiative undertaken since the genocide is in the area of language, when English was introduced as the language of instruction in schools in 2008. According to Simpson and Muvunyi (2013), the move to make English more central to the educational and economic spheres is driven by the government's emphasis on the development of human capital with the necessary knowledge and skills as vehicles for socio-economic development. This is also in line with the 2003 Constitution, which stipulates that Kinyarwanda, French and English are all official languages. Since becoming a member of the East African Community (EAC), and the country's accession to the Commonwealth of Nations, the use of English has become more prominent and the need for literacy in English greater. This has placed a huge pressure on the rapid upskilling of teachers, with the UK-funded Rwanda English in Action Programme (REAP) which was the main vehicle for the Ministry of Education to address the English language learning needs of more than 85,000 school teachers.

Finance

In terms of spending on education the Education 2030 Framework for Action (UNESCO, 2015) recommends two key targets for the public financing of education: allocating at least 4% to 6% of gross domestic product (GDP) to education, and/or allocating at least 15% to 20% of public expenditure to education. According to the Global Monitoring Report (UNESCO, 2017) in 2013–16 one in four countries failed to meet these targets: Rwanda falls just short of both benchmarks, lagging behind many of its peers with respect to the share of public expenditure allocated to education (Table 3).

Table 1: Public education expenditure, 2015

	As share of GDP (%)	As share of public expenditure (%)	Per capita spend (USD)		
			Primary	Secondary	Tertiary
SSA average	4.1	16.9	246	310	2 094
Low income countries	3.7	17	170	262	1 667
Rwanda	3.7	13	90	500	1 900

Source: UNESCO, 2017

In addition to government funding Rwanda receives significant amounts of donor aid. The largest and most consistent source is the Global Partnership for Education (GPE) which disbursed a total of USD200 million in support of Rwanda Ministry of Education between 2003 and 2017 (GPE, 2018a). In April 2018 GPE announced a new grant of USD139,487 for Rwanda for the scoping and design phase a new education program (GPE, 2018b), the results of which are yet to be announced.

Information and communication technology in education

Rwanda has been at the forefront of the continent's shift to ICTs, and has placed ICTs at the centre of its drive towards achieving middle income status by 2020. ICTs are dominant components of Vision 2020, as crucial components of the development of the education system in Rwanda, following a focus in previous education sector plans on innovation and science. Within the framework of the Vision 2020 and the national strategy on ICT, the Ministry of Education has issued an ICT in Education Policy (Harrison, 2015; MINEDUC, 2016b). As part of the latter, a number of partnership projects between the Ministry, donors and NGOs have been working in the country's schools in the last fifteen years, albeit on a small scale.

The Rwanda Education Commons (REC) another partnership project in the field of ICT, working directly with MINEDUC. Commencing in 2009, REC was a four-year program funded by USAID to promote the effective use of ICTs in education. The program worked in four key areas which set the stage for Rwanda's sustained integration of ICT in education (Lis, 2013):

- Policy: REC was involved in the development of Rwanda's first ICT in Education policy.
- Education Content: REC built a digital library containing materials supporting each unit in Rwanda's secondary school curriculum and some of Rwanda's primary school curriculum. The materials are a mix of locally produced content, regionally adapted content, and relevant, internationally sourced content.
- Hardware and Software: REC connected all of Rwanda's teacher training colleges to the internet and negotiated the subsidy of bandwidth. Plans were made to sustain and support the infrastructure. In partnership with Google, REC build an online teacher community platform in which Rwandan teachers took part.
- Teacher professional development: REC launched the teacher community (Teacher Mate), a training-of-trainers model for improving technological literacy, a television program broadcasting good teaching practices in Rwanda's classrooms, plus a digital library of high-quality resources aligned to the curriculum, discussion boards, social networking tools, and informational tools. Operated by the Rwanda Education Board, it was credited with contributing to the tripling of Early Grade Reading Assessment results early on in the project.

In October 2006, the NEPAD e-Africa Commission launched the e-schools project which further developed ICT in Rwandan schools. The e-Schools project was a continental initiative aimed at equipping young Africans with skills necessary to work and participate in the emerging information society and knowledge-based economy, and benefitted from high-profile partnerships with five

major Information Technology (IT) companies (Cisco, Microsoft, HP, AMD, and Oracle) who enabled the project to equip six demonstration schools in Rwanda with computers as part of a pilot phase involving sixteen countries² (NEPAD, 2005).

Since 2005, the Kigali Institute of Education has been involved in an ICT in education initiative as part of the EdQual project, funded by the UK Department for International Development and involving six universities³ (Equal, 2018). The EdQual initiative in Rwanda has been working with teachers in 12 primary and secondary schools in Rwanda. Through a programme of workshops and activities in schools, teachers have been developing their own ICT skills and using ICT to support teaching and learning of science and mathematics.

Finally, a much-maligned but publicised partnership is with the One Laptop Per Child Project (OLPC), a non-profit organisation which distributes low-cost, low-power laptops to children in poor countries, which launched in 2008 and within 4 years had connected over 100,000 learners in 500 schools to a device. There is some evidence suggesting that teachers are the primary beneficiaries of laptops in the classroom, particularly when combined with teacher training (Fajebe et al, 2013).

As a result of the many initiatives focused on ICT, the ratio of users per computer is high by Sub-Saharan African standards, where in the vast majority of countries this metric is not seemingly tracked (Table 2).

Table 2: Number of users per computer in Rwandan schools

	Students	Teachers	Administrators
Primary schools	16	6	1
Secondary schools	28	11	2

Source: MINEDUC, 2016c

On a more sober note, research conducted as part of the EDQual Project mentioned above concluded that the potential of ICT will not be realised by the mere introduction of computers and ICT infrastructure in schools (Rubagiza et al, 2011). This work surmised that the ICT policy initiatives appear to be disadvantaging particular groups, such as girls and those living in rural communities, and argued that without a shift in practices of teaching and learning with ICT in schools young people are not likely to learn how to exploit the capabilities offered by access to ICT. The conclusions of the EDQual research accord with those of a major review of ICT in schools published by the OECD in 2015, which was unequivocal about the dangers of investing in technology under conditions of poor teaching:

² Algeria; Burkina Faso; Cameroon; Egypt; Gabon; Ghana; Kenya; Lesotho; Mali; Mauritius; Mozambique; Nigeria; Rwanda; Senegal; South Africa; and Uganda.

³ Universities of Bristol, Witwatersrand, Cape Coast, Dar es Salaam, Bath and the Kigali Institute of Education

In the end technology can amplify great teaching, but great technology cannot replace poor teaching. (OECD, 2011: 17)

Under such conditions, the OECD authors conclude that:

...to reduce inequities in the ability to benefit from digital tools, countries need to improve equity in education first. Ensuring that every child attains a baseline level of proficiency in reading and mathematics will do more to create equal opportunities in a digital world than can be achieved by expanding or subsidising access to high tech devices and services. (ibid: 16)

In view of these strong findings, it would be advisable for the country to evaluate the implementation and impact of the ICT initiative introduced in 2000 in the interests of improving the effectiveness of the programme and, where conditions are not conducive to its success, to focus rather on the more fundamental needs of teachers and schools, such as the strengthening of teachers' disciplinary and pedagogical knowledge and skills.

Challenges

Despite the many excellent initiatives in place, the Rwandan government continues to combat illiteracy and to provide the material human resources needed for the country's socio-economic development. Shortages of books are common, many schools lack electricity and tap, and teacher salaries are low (IBRD/WB, 2011). Urban/rural inequalities are stark (MINEDUC, 2016c). As primary school enrolment nears 100%, completion rates remain low and repetition rates high (Williams et al, 2015). An investigation into these disappointing results suggest that children continue to contend with a range of school-related costs that impact attendance, performance and completion: examination fees, after-school coaching and 'voluntary' parent-teacher association dues; these factors have serious consequences for children's educational experience, and may be a key factor explaining why children do not complete their schooling once enrolled (Williams et al, 2015).

Some of the difficulties facing the country's school system are illustrated by the fact that Rwanda is ranked at 157 out of a total of 178 countries, on the 2018 Human Development Index⁴ (UNDP, 2018), suggesting that barriers to education such as health and poverty may play a critical role in preventing students from reaching their learning potential, particularly in rural areas.

Further, Rwanda has placed a huge emphasis not only on the shift to ICTs in the classroom but also to a trilingual system of instruction. This has placed a huge amount of pressure on teachers, and an education system that must now play catch-up in order to fulfil the promises of the ICT in

⁴ Based on a range of indicators, including expected years of schooling (11.2 in the case of Rwanda) and mean years of schooling (4.1).

education policy and redress some of the teacher training gaps found in previous projects designed to facilitate a smooth transition (Byurahanga, 2017).

In summary, while much has been achieved in a short space of time many challenges to reaching Vision 2020 remain.

ITE institutions

By 2015, there were 44 tertiary education institutions in Rwanda, 12 of them public and 32 private (MINEDUC, 2016c). In the public sector there are ten teacher training colleges (TTCs), two colleges of education (CoEs) and one university level higher education institution, the Kigali Institute of Education (KIE).

- The TTCs prepare certificate level teachers for primary schools, offering secondary level education for would-be teachers with a school leaving certificate.
- The CoEs train diploma level teachers for *tronc commun* (Grades 7-9); and
- The KIE, which is UR-CE, trains mainly degree holding teachers for upper secondary education (Grades 10-12).

For the TTC's, curriculum development, assessment and certification is the responsibility of the University of Rwanda's College of Education (UR-CE) (IBRD/WB, 2011). Both public and private institutions offer ITE. The UR-CE is the primary public provider, and specialises in social sciences and languages. Private institutions include the University of Kibungo (UNIK), Kavumu College (specialising in the sciences), Ruhengeri Institute of Higher Education and the Mount Kenya University Rwanda (MKU). See Table 6 for a summary of qualifications provided by these different institutions.

All students are taught via a face-to-face mode of instruction (the UR-CE used to provide distance learning but this ceased due to a lack of demand – in-service teachers prefer to attend weekend face-to-face programmes).

Enrolment and graduation data for high school teachers provided by the MINEDUC Statistics Department are shown in Table 3 and Table 4.

Table 3: Public and private tertiary enrolment in education programmes in 2016/2017

Number of students			Percentage	
Male	Female	Total	% Male	% Female
6 892	4 014	10 906	63,2	36,8
Students enrolled in public institutions				
3 822	729	4 551	84	16
Students enrolled in private institutions				
3 070	3 285	6 355	48,3	51,7

Source: MINEDUC (2017)

Two points stand out in Table 3. First, regarding enrolment males outnumber females in the ratio 3:2, an imbalance due entirely to males outnumbering females by 5:1 in the public sector; the numbers are evenly balanced between the genders in the private sector. Second, enrolments in private institutions of higher education outnumber those in the public sector by 3:2.

Regarding graduates (Table 4), the patterns noted above do not remain entirely intact, with the gap between male and female graduates reduced to 5:4 overall, and 2.5:1 in the public sector; the balance between the genders in private institutions is largely maintained, as is the total number of graduates from the public and private sectors respectively.

Table 4: Public and private tertiary graduates from education programmes 2015/2016

Number of graduates			Percentage	
Male	Female	Total	% Male	% Female
2 565	2 001	4 566	56,2	43,8
Students graduated in public institutions				
1 374	699	2 073	66,3	33,7
Students graduated in private institutions				
1 191	1 302	2 493	47,8	52,2

Source: MINEDUC (2017)

Teaching is somewhat different in private to public, where private have more weekend and evening programmes while most of the public institutions have day-programs. Regarding performance, according to the Unirank system⁵ only two of the top 23 universities in the country are public, the University of Rwanda (ranked first) and the Institute of Legal Practice and Development (ninth), suggesting that the private sector institutions – while variable – may offer better quality instruction.

The Rwandan government subsidises students' tuition fees through direct payments to their institutions to the amount of some RWF1 200 000 (approximately US\$1 380) for science courses, and RWF800 000 (approximately US\$920) for non-science courses per academic year. For a student to benefit from this scholarship, they must first be accepted to study in a public university or college, and also be in Ubudehe category I and II⁶, as described by the Ministry of Local Government (MINALOC).

⁵ The Unirank system ranks universities world-wide which meet the following criteria: are officially recognized, licensed and/or accredited by national or regional; are officially licensed or authorised to grant at least four-year undergraduate degrees and/or postgraduate degrees; provide higher education courses mainly in a traditional face-to-face learning format delivered through on-site facilities. See <https://www.4icu.org/rw/>

⁶ The Rwandan population is classified into four Ubudehe categories reflecting their degree of social and economic vulnerabilities. Categories I and II comprise the poorest groups and make up nearly half the population.

Additionally, the government provides living allowances including meals and accommodation to students in the form of loans through the Rwanda Development Bank (BRD). The loans are repaid on a monthly basis once the student graduates and obtains employment without interest.

In 2015/16, 76% of University of Rwanda students were supported by government. Of these, 17% were in the College of Education (CE), as indicated in Table 5. This is on par with the proportion of government-supported students studying for a Business and Science & Technology qualification, and over four times the proportion of arts and humanities students.

Table 5: Government support to students at UR

Source: MINEDUC (2017)

Sponsor	Gender							Grand total	
		CASS	CAVM	CBE	CE	CMHS	CST		
Government sponsored	Female	312	965	1 918	1 505	853	1 296	6 849	23%
	Male	976	1 943	3 622	3 610	1 915	3 965	16 031	53%
	Total	1 288	2 908	5 540	5 115	2 768	5 261	22 880	76%
	%	4	10	18	17	9	17	76	
Private (not supported by government)	Female	336	164	1 449	327	645	191	3 112	10%
	Male	757	237	1 424	465	721	544	4 148	14%
	Total	1 093	401	2 873	792	1 366	735	7 260	24%
	%	4	1	10	3	5	2	24	
Grand total		2 381	3 309	8 413	5 907	4 134	5 996		
%		8	11	28	20	14	20		100%

Notes: CASS = College of Arts and Social Sciences; CAVM = College of Agriculture, Animal Sciences and Veterinary Medicine; CBE = College of Business and Economics; CE = College of Education; CMHS = College of Medicine and Health Sciences; and CST = College of Science and Technology

It is worth noting that UR-CE hosts the Centre of Excellence for Innovative Teaching and Learning in Mathematics and Science (ACEITLMS), funded by the World Bank. An indication of Rwanda's status as a continent leader in teacher education, the centre offers a postgraduate educational program in maths and science education to students largely from the East Africa region. It aims at producing graduates to international standards with local relevance, and is looking at continued expansion in the region (ACEITLMS, 2018). This will place Rwanda firmly at the centre of teacher education in Africa.

The types and nature of ITE qualifications

ITE qualifications consist of diplomas and degrees. While their durations vary among institutions, at the UR-CE a diploma is two full years with six months of internship and a dissertation (either included, or in addition), while the degree is three full years plus one full year of internship and a dissertation. ITE programmes for upper (Advanced or 'A' Level) and lower (Ordinary or 'O' Level) secondary school teachers differ primarily in terms of duration. To teach A Levels a teacher

requires at least a university degree (three or more years), while to teach O Levels they require a diploma (at least two years).

Table 6: ITE qualification types

University/College	Private or public	Qualification	Study duration
UR College of Education (UR-CE)	Public	Degrees and Diplomas	Two to four years
Kavumu College	Public	Diploma	Three years
UNIK	Private	Diploma	Three years
INES	Private	Diploma and degree	Three to four years
Mount Kenya University	Private	Degree	Four years

Table 6 hides a wealth of detail in terms of the varied qualifications on offer. For example, UR-CE offers a wide variety of post-graduate and undergraduate qualifications. Here is a list of the latter, one of which is offered as a distance programme:

- Bachelor of Education (Hons), (Named Subject) (Secondary)
- Bachelor of Education (Hons), (Named Subject) (Primary Teacher Education)
- Bachelor of Education (Hons) in Early Childhood Education
- Certificate of Education for Diploma Holders
- Diploma in Education (Named Subject) (Upper Basic)
- Diploma in Education (Named Subject) (Upper Basic), by distance learning [The Diploma remains listed in the university's prospectus, but it appears to have been discontinued.]
- Bachelor of Education (Hons) (Special Needs Education) (Primary Teacher Education) [BEd (Hons) (SNE) (PTE)]
- Diploma in Education (Special Needs Education) [Dip. Ed (SNE)]
- Continuing Professional Development Diploma in Special Needs Education (CPDD SNE)
- Diploma in Education (Named Subject) (Upper Basic)

Pupils undertaking these qualifications are assessed continuously and relatively rigorously. In Rwandan universities assessments take the form of assignments, tests and examinations, and may include essays, role-plays, practical tasks, laboratory-based tasks and research projects, and the above degrees are no exception. The most common form of assessment is the Continuous Assessment Test, which constitutes 30% of the marks for each module, with assignments constituting 20% and the final examination 50%.

Selection into ITE

Admission criteria vary between institutions and across the public-private divide. Admission into UR-CE, which is where candidates looking to become secondary school teachers would enter, requires that candidates complete A2 (secondary school) with at least 18 points in the National Examination. It is not known how this requirement compares to those for other higher education programmes, but it is estimated that the required number of points are obtainable through a relatively modest examination result⁷.

Candidates with international qualifications require the approval of the Rwanda Education Board (REB), the Workforce Development Authority (WDA) (for secondary school qualifications), or the Higher Education Council (HEC) (for post-secondary qualifications), and comparable marks.

The selection of candidates is based primarily on the marks obtained in their final school-leaving (S6) National Examination, taking into account candidates' choice of teaching subjects. For example, for acceptance into science subjects, consideration is given to candidates' secondary school results in biology, chemistry, mathematics, physics and general communication skills. For acceptance into the mathematics, physics and geography combination, candidates' results in mathematics, physics, geography, entrepreneurship and general communication skills are considered. There are no ITE entry examinations as such.

Students choose to specialise in three teaching subjects. Possible subject combinations include:

- Mathematics, physics, geography;
- Mathematics, chemistry, biology;
- Physics, chemistry, biology;
- Physics, chemistry, mathematics;
- Mathematics, economics, geography;
- Literature, economics, geography; and
- Literature, Kinyarwanda and Kiswahili.

Admission criteria for private institutions are less rigorous with regard to both the minimum marks required and the permitted secondary subject combinations – it is rather candidates' ability to pay fees that is of paramount importance. However, private ITE institutions seldom permit candidates with backgrounds in social studies or literature to study science subjects. The French and English

⁷ Pupils take exams in at least 3 predetermined subjects from their chosen specialisation. They are also required to write a *General Paper* and take the subject of *Entrepreneurship*. Examination subjects are graded A - F, with each grade representing a specific number of points: A (6), B (5), C (4), D (3), E (2), F (0). Thus, the required 18 points may be obtained by scoring 2 subjects at C grade and 2 at D (Nuffic, 2015).

Department of the private *Institut d'Enseignement Supérieur de Ruhengeri* (Ruhengeri Institute of Higher Education, or INES-Ruhengeri) accepts candidates with secondary school certificates specialising in languages, humanities and social sciences, among others.

The content of ITE programmes

Although courses and course contents vary from one programme and institution to another, two are indicative for the purposes of this case study: the French-English education programme at INES-Ruhengeri, and the diploma programme at the Rukara campus of the UR-CE.

The French-English education programme at INES-Ruhengeri (from which students graduate with a BA Honours with specialisation in French-English education) prepares trainee teachers for instruction in both French and English. A four-year programme in which students must complete all modules at 120 credits per year (where each credit equates to 10 notional learning hours). The courses comprising the INES-Ruhengeri French-English education programme are listed in Appendix 4. Subject content courses constitute approximately half of the total number of 480 credits, and the majority of these credits are in French and English. Teaching practice and a dissertation together account for a quarter of all credits, and most of the remaining credits consist of methodology courses.

The diploma programme at UR's Rukara campus is a two-year course which offers various combinations of courses in two subject specialisations. The first year and a half are devoted to campus-based teaching and learning, followed by a six-month internship (supervised by both school- and campus-based mentors) at a lower secondary school together with an action research project (Iwakuni 2017).

Interviews with student teachers and lecturers at the UR-CE and at INES-Ruhengeri revealed the perennial tension between theory and practice: on one hand, they consider practical training to be an effective way of acquiring knowledge, but on the other, practical training can have a conformist and conservative influence on student teachers. In theory, student teachers are expected to receive mentoring, but this seldom occurs. An earlier study of the intended, implemented and attained Rukara diploma curriculum found it fragmented and unintegrated, disregarding student teachers' prior knowledge and learning styles, lacking opportunities for reflective practice, and ultimately producing qualified but not quality teachers who will continue to teach in a traditional, teacher-dominated manner (Iwakuni 2017).

The replacement (c.2008) of French with English as the language of instruction from upper primary schools through to university, including teacher education, has required substantial training and re-training of teachers at both in-service and pre-service levels. All teacher educators are being equipped with English proficiency and contemporary training methods (UNICEF 2016; Simpson & Muvunyi, 2013). Early prognoses were pessimistic, however, suggesting that "the much-

anticipated outcomes of a rapid and early switch to English as the medium instruction are unlikely to be realized by the majority of Rwandan youth, just as most never learned French” (Samuelson & Freedman 2010).

There is no special or additional academic support for students with poor school results. While there are ‘tutorial assistants’ who support students especially in practical courses, the onus is on the individual student to devote more time to their studies, visit the library and engage with lecturers and other students.

Induction

There is no formal induction process in addition to the internships which form an integral part of the ITE degrees and diplomas discussed above. However, during their first (or probationary) year, new secondary school teachers benefit from inspection and oversight by both a Head Teacher and a School Subject Leader (SSL). Thereafter, teachers participate in annual performance evaluation processes.

Licence to practice

A formal licensing process for qualified in-service teachers was initiated in 2018, under the auspices of the REB and managed through the Teacher Management Information System (TMIS) which is supported by UNICEF. Licensing of pre-service teachers is expected to follow. Licences will be valid for a five-year period, and renewal will depend on the results of a teacher's annual performance evaluation during this time.

In theory prospective teachers, whether of primary or secondary schools, must apply to the relevant school district and pass an examination prepared and organised by the district authorities before they are allowed to teach. The examination consists of mostly knowledge tests of pedagogy and methodology, but may also include questions on the subject/s that the candidate plans to teach (e.g. mathematics, languages, biology, etc.) No interview takes place after the written examination: the candidates with the highest scores are appointed to the vacant posts. It should be noted, however, that in the recent past (2012), the teacher recruitment process included has only application documents and interviews – written examinations were not usually part of the process (JICA 2012).

Teacher performance management

A formal appraisal and performance management system is in place. It takes into account teachers’ planning skills, their decision-making capacity, pedagogical management, motivation, communication and coordination skills, students’ success rates, control skills and school

cleanliness. Performance appraisal sheets, highlighting the tasks to be accomplished during the year, are completed and signed by teachers at the start of each year. At the end of the year, teachers are evaluated first by the Head Teacher/School Director and then by the Sector Education Officer operating at District level. Teachers must respond to any findings within a specified timeframe. Teachers may be eligible for horizontal promotion (i.e. a salary increase) on the basis of these findings.

The pass-out from the probation period refers seriously to this performance evaluation. In the case the teacher is not satisfied with the evaluation results; he/she may claim to the direct evaluator/the School Director for more clarification and agreement on the results. However, judging from a completed evaluation form, the assessment of performance does appear to be very open-ended and can be rather perfunctory.

Continuing Professional Development

The Rwanda Education Board discontinued Continuing Professional Development for teachers some years ago and replaced it with school-based in-service mentoring. Initially, the School-Based Mentor (SBM) was selected by the REB and required at least a degree in Education (ideally in languages). Selection now takes place at school level, with school Subject Leaders choosing one candidate with good communication skills among themselves.

Between 2013-2015, the Teacher Service Commission in conjunction with international donors, non-governmental organisations (NGOs) and district education officers trained 800 teachers as SBMs. SBMs were not paid but met in Kigali for three to five days annually for methodological training. They continue to teach their classes, but for only 30 hours a week – the remaining 15 hours are reserved for mentoring. Mentoring involves monthly sessions with teachers according to their departments or subjects. The priority areas were science, mathematics, English proficiency and teaching methodology support and school management training for head teachers (UNESCO 2015; Muvunyi & Simpson 2013). School-based mentoring was accompanied by peer mentoring, where two teachers exchange views and support each other on their specific challenges then report back on these to the SBM. The programme was discontinued in 2015 and restructured in order to encompass a wider focus on ICTs, school leadership, and pedagogy.

Promotion

The principal mechanism through which promotion and job postings are managed is through the TMIS. There is no training specifically aimed at improving teachers' promotion prospects. Good performance is the primary basis for promotion. Successful performance evaluations in the order of 80% and above translate into a 5% salary bonus, while 70% to 79% result in a 3% bonus. An evaluation of less than 50% may result in disciplinary action. Promotion to leadership positions

(such as Head Teacher) is competitive, as candidates must apply for these positions and pass examinations.

Conclusion

What we have called a ‘best practice model’ in teacher preparation, deployment and support is condensed from the Literature Review (Taylor and Robinson, 2018; see Appendix 1) which provides the framework for our study of secondary level teacher education in sub-Saharan Africa. It is from the perspective of this model that we attempt to answer the following questions:

- Given the constraints of finances and institutional capacity, how should teacher education in sub-Saharan Africa proceed?
- In particular, how should Rwanda proceed in crafting a teacher policy which places the school system onto a high-performing track?

A number of countries and smaller jurisdictions have managed to affect a revolution in their school systems, lifting them from situations of low-performance/high-inequity to efficient producers of quality education which equalizes opportunity across society. While conditions in SSA countries are very far from those which pertain in high performing systems, in many of the latter this has not always been the case, and where reform has been successful it has often occurred under initial conditions of resource deprivation and taken at least a generation of dedicated and coordinated effort to achieve. The principal components which contribute to these outcomes are:

1. the selection of the best graduates from the school system into ITE programmes;
2. intensive pre-service education in disciplinary and pedagogic knowledge accompanied by extensive in-school work under experienced mentors;
3. a focus on continuous in-service education which is linked to teachers’ daily work, and coordinated by curriculum leaders within the school; and
4. a management and promotion regime which systematically identifies, nurtures and rewards talent in the allocation of leadership responsibilities.

These factors are not all of the same status, with the latter two being path dependent on the first two. The first priority must be to improve the quality of ITE, through a combination of points 1 and 2 above. This is because subsequent steps are dependent on the existence of well-educated and experienced curriculum leaders and administrators in schools and higher levels of the system, able and willing to mentor and guide younger teachers, coordinate meaningful CPD within and across schools, and identify and develop the best candidates as future leaders. Building a high-performing system is a slow process, taking several decades to achieve, as a critical mass of competent educators builds up in the system.

We suggest that there are three main areas of focus which, our theory predicts, are likely to exert maximal leverage in effecting a sea change in low-performing school systems: strengthening ITE through better selection of student teachers and more intensive education in both disciplinary and pedagogical knowledge; supplementing the focus of ITE with a vision of teaching as a life-long career which requires continuous and effective professional development; and building career paths which make optimal use of talented educators in leadership and support positions.

Improving the quality of ITE candidates and programme content

The quality of ITE candidates shapes a lot of what teacher educators can achieve, and the types of teachers that eventually end up in classrooms and leadership positions in the system. It is, therefore, important that sufficient numbers of teachers are trained, that those teachers have strong literacy skills in the language of teaching and learning as well as a solid foundation at least in the subject matter that they will be expected to teach. These are foundation skills, and without proficiency in them, talk of strategies for raising the numbers of graduates in the sciences and engineering, or preparing schools for Twenty-first Century skills are castles in the sky.

Selecting students into ITE programmes on the basis of academic skills and motivation are a very important starting point for improving the quality of ITE. Given the low status of the teaching profession in Rwanda, there may simply not be enough qualified graduates to merit entry into ITE. In these cases, we suggest that provision be made to build academic literacy and re-teach these teacher trainees the high school curriculum content, before they progress to teacher training: evidence shows that the content of ITE will have limited effect if subject matter has not previously been acquired.

A number of approaches can be taken to improve the number and quality of ITE applicants. At the most basic level, teaching conditions can be improved. This would involve increasing teacher salaries, reducing class sizes, improving teacher housing etc. However, we recognise that these are structural issues which require large amounts of financing, and which may not be realistic at this stage in the development of many sub-Saharan African education systems. A number of sub-Saharan African countries struggle to pay teachers a living wage, let alone finance their education and promotions. Targeted donor support is making a difference, but sustainability can only be achieved by a growing fiscus.

While a certain threshold of funds is necessary to achieving an acceptable standard, research evidence indicates that the availability of funds does not guarantee success, and that teacher salaries, while comfortable, are not elevated compared with professionals at a similar level of education and responsibility. It seems that a successful school system is a necessary but insufficient condition for national development and must be accompanied by and support an economic strategy tailored to optimising the natural and strategic resources of the country. Most

important, once the economy picks up, it generates additional funds for social spending, and in particular for education. Success breeds success in a virtuous cycle.

Once students have been selected into ITE, it is important to provide them with the highest quality of disciplinary studies, familiarity with the research literature on teaching and extensive school experience under the mentorship of experienced and dedicated teachers. Regarding the content of ITE programmes, there is strong evidence that teacher development is more likely to improve student learning outcomes if it increases teachers' understanding of the content they teach, how students learn that content and how to represent and convey that content in meaningful ways.

There are many ways in which teacher education in Rwanda accords with international best practice. The Rwanda education authorities have a clear vision for teacher education, and clearly-articulated teacher education policies. Although admission criteria into teacher education institutions vary, the selection of prospective teachers takes into account their school-leaving academic results as well as their general communication skills.

The University of Rwanda, the main teacher training provider, has a reputation for excellence. Some 17% of University of Rwanda student teachers are being supported by government, which is among the highest number of subsidised students relative to field of study at the university.

While it has not been possible to examine all the teacher qualifications on offer in this case study, much can be learnt from the two for which data have been obtained. It is important to note that a degree is required to teach at upper secondary school level. The BA Honours degree in Education at INES-Ruhengeri is equivalent in duration to teacher education programmes in many other countries, and emphasises subject content knowledge. The allocation of an entire quarter of the degree and the diploma (in terms of both time and credits) to the teaching practice component bodes well for bridging the theory/practice divide and the requirement that both degree and diploma programmes include a research component is in line with the highest-performing education systems globally. Further analysis of the nature of, and the inter-connections between, the subject knowledge and methodology modules would be needed in order to comment on the quality of these ITE qualifications.

Continual Professional Development as standard practice

There is wide agreement in the research literature that ITE and CPD should be integrated into a continuum which supports teachers' capacity throughout their careers. However, the two serve different purposes and are not interchangeable: ITE provides teachers with a solid base of the knowledge and the skills that they will need for their task, while CPD allows them to update their knowledge and skills, and to adapt these to changes in the teaching environment.

Account needs to be taken of the research findings that CPD in the form of short workshops has little effect on teaching practice, and that an effective programme should last at least for several days, it must be subject-matter specific, and its content and emphasis must be articulated taken into account the instructional goals and the challenges faced by the school in which the teacher is working.

Furthermore, there is a growing realisation that, in addition to subject-focused study, an important form of CPD places the work of the school at the centre of the programme and is designed around the challenges teachers face in their classrooms. Research indicates that programmes that are linked to specific school needs are more effective, especially activities based on demonstration and peer-review. School-focused CPD provides opportunities for synergies to develop among the teachers and the staff of the school. Teamwork of this kind has also been found to improve teachers' sense of job satisfaction, which in turn reduces teacher attrition. In this respect the school-based mentoring system recently introduced in Rwanda is in line with the latest research evidence, providing that school-based mentors (SBMs) are selected according to expertise and a successful track record, an area which the country would do well to give close attention to.

In the best performing systems that have a rigorous and lengthy ITE programme, CPD forms an integral part of a teacher's career, and is linked to issues of motivation and career progression. In the case of sub-Saharan Africa, where significant numbers of teachers are unqualified, CPD might fulfil a different approach. In this context, CPD might be essential for helping teachers become qualified, and equipping them with the approaches that they would have received from ITE. Again, we emphasise that this is not the approach that we would advocate. However, the number of unqualified teachers, particularly at the secondary school level, is a reality, and it is not a problem that will be solved by simply removing them from the classroom. But this will require substantive courses, for which teachers could perhaps be given time off to attend, and combine face-to-face instruction and support by distance.

CPD in this context should help teachers work towards a qualification in a way that is connected to their work in the classroom. At its most basic level, this might involve helping teachers to learn the content knowledge that they are expected to teach, as evidence shows that many teachers, particularly in mathematics and science, could not pass high school examinations. Only once a threshold of content knowledge has been grasped can pedagogical content knowledge, and an understanding of how to teach be developed.

One of the most urgent needs with respect to CPD is to continue training in English for teachers. Effective teaching is only possible when teachers are proficient in the language of instruction and there is evidence that this is far from being the case in Rwanda. A review of the literature the use of English as medium of instruction (MOI) in SSA countries, concludes that many learners in primary school and beyond do not have sufficient ability in English to achieve grade-appropriate

subject knowledge, which restricts their access to effective classroom practice and thus to the curriculum (Clegg and Simpson, 2016). This is a particular problem in Rwanda (Milligan et al, 2016), which is unsurprising given the novelty of the radical change in language policy, not only in education but across the society. Low levels of English proficiency among learners and teachers is another factor which disproportionately negatively affects marginalised communities, including the very poor living in rural areas, where little or no English is likely to be spoken.

Clegg and Simpson (ibid) note that pedagogical and organisational expertise appropriate to education for learners working in a second language is available both in Africa and other parts of the world, but rarely widely applied in SSA. Strategies to effect 'language supportive learning' under such conditions include ways of easing the transition from early years education in an African language, multilingual classroom practice, the pedagogy of language-supportive subject teaching, accessible textbook design, appropriate curriculum for learners working in a second language, language-appropriate assessment and the management of multilingual education.

A final point on educator professional development concerns quality assurance. Programmes which appear to be well designed and follow a set of standards do not necessarily lead to knowledgeable and skilled teachers. In recognition of this problem, in half of the OECD countries, a teacher education qualification is not sufficient to get a certification to teach. In these countries aspirant teachers have to pass a competitive exam to be certified and enter the profession. The institution of a teacher licensing in Rwanda has the potential to provide an important quality assurance mechanism, not only to improve the quality of teachers but also in ITE programmes offered by higher education institutions.

Improving the management and support of teachers

Improving teacher motivation is essential both for the status of the teaching profession, as well as the rates of teacher retention. We have argued that teacher motivation isn't necessarily linked to higher salaries or raises. As such, it does not necessarily require a significant investment of financial resources, but is improved by clean and well-maintained school environments, supportive school leadership, a management system that rewards good teaching practice and punishes poor teaching practice and a promotion framework which is transparent and offers room for personal growth.

There is a formal teacher licensing process with a renewal period, accompanied by developmental support and incentives. A formal appraisal and performance management system is in place (with incentives), and these appraisals take into account teachers' general communication skills. School-based mentors are accorded release time from their other duties, allowing them to give appropriate attention to supporting other teachers. Incentives for good teacher performance are in place. The existence of peer mentoring is a sign that collaboration between teachers is taking

place, and that teacher professional learning communities exist either in embryo or in fact, and these mechanisms should be supported and encouraged.

Performance appraisals could be further strengthened by involving external independent assessors. Career pathways have been laid out, which is an important mechanism in keeping good practitioners in the classroom, and enabling those seeking leadership positions (such as school principal) to work towards career goals. However, it seems that appropriate training is not required for promotion to specialist positions, and consideration should be given to providing specialist training before promotion to school principal and other specialist positions.

The three reforms described above are dependent for their successful implementation on strong institutional capacity rather than financial capacity, and so require system management and sufficient human resources to achieve. Building these resources requires systematic and consistent policy over an extended period: in successful system school leadership is something which teachers prepare for through CPD, and which is earned through demonstrated competency in the classroom. School leaders who have been selected on this basis are more likely to be supportive of good pedagogy and teacher development, rather than simply see themselves in an administrative capacity. They are also more likely to be respected by their staff members for their expertise in teaching. The same principles should be applied in appointing teacher mentors and other curriculum leaders within the school, and subject advisors and school inspectors at higher levels of the system.

Any thorough-going reform initiative of the kind envisaged above requires a long-term view – of at least two decades – in which the different components of teacher preparation and deployment discussed in this report are carefully aligned and rolled out. It will take time before efficiency gains through better teacher education begin to provide the dividend required to address financial constraints, but in the meantime, much more can be done with what exists. Both the more efficient use of resources and building smart institutional capacity are dependent on good governance, and without the political will to exercise it no reforms are possible.

ACKNOWLEDGEMENTS

The project was led by Nick Taylor and the research team included Jean Adotavi, Jacklyn Arinaitwe, Roger Deacon, Avrielle Fonseca, Raymond Matlala, Maureen Mosselson, Tadiwanashe Murahwi, Charlotte Oloya, Natasha Robinson, Aynur Sahin, Jost Uwase and Zaahedah Vally.

The support of the Varkey Foundation in the planning and execution of this research study is gratefully acknowledged. In particular, the patience, wise guidance and perceptive editorial comment provided by Emma Broadbent contributed significantly to the success of the exercise.

The authors acknowledge the work of anonymous reviewers, whose comments led to significant improvements in the manuscript.

References

- ACEITLMS. (2018). *About ACEITLM*. Accessed 27 November 2018 from <http://aceitlms.ur.ac.rw/>
- Barber, M. and Mourshed, M. (2007). *How the world's best-performing school systems come out on top*. New York: McKinsey and Company.
- BBC. (2018). *Rwanda profile – Media*. Accessed on 27 November 2018 from <https://www.bbc.com/news/world-africa-14093244>
- Byurahanga, F. (2017, May 03). Are schools ready to implement digital education? *The New Times*. Accessed 12 December 2018. <https://www.newtimes.co.rw/section/read/211701>
- City, E., Elmore, R., Fiarman, S., and Teitel, L. (2009). *Instructional rounds in education: A network approach to improving teaching and learning*. Cambridge, Mass.: Harvard Educational Press.
- Clegg, J. & Simpson, J. (2016) Improving the effectiveness of English as a medium of instruction in sub-Saharan Africa. *Comparative Education*, 52:3, 359-74, DOI: [10.1080/03050068.2016.1185268](https://doi.org/10.1080/03050068.2016.1185268)
- Epstein, B. (2018). The mass murder we don't talk about. *New York Review of Books*, 7 June 2018.
- EdQual. (2018). *A research programme consortium on implementing education quality in low-income countries*. Accessed on 28 November 2018 from <https://www.edqual.org/>
- EdQual. (2010). Using ICT to Support Science and Mathematics Education in Rwanda. *EdQual Policy Brief No. 3*. Accessed on 28 November 2018 from https://www.edqual.org/publications/policy-briefs/pb3.pdf/at_download/file.pdf
- 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.
- Fhi360 (2018). *Rwanda Education Commons*. Accessed 11 December 2018. <https://www.rencp.org/about/member-organizations-1/rwanda-education-commons-rec/>
- GPE. (2018a). *Education in Rwanda*. Accessed on 28 November 2018 from <https://www.globalpartnership.org/country/rwanda>
- GPE. (2018b). *2018 program development grant for Rwanda*. Accessed on 28 November 2018 from <https://www.globalpartnership.org/news-and-media/news/2018-program-development-grant-rwanda>



Harrison, B. (2015). *Information and Communication Technology Policy in Rwanda*. Accessed on 27 November 2018 from https://ocw.mit.edu/courses/global-studies-and-languages/21g-034-media-education-and-the-marketplace-fall-2005/projects/MIT21G_034F05_ictrwanda.pdf

IBRD/WB. (2011). Rwanda Education Country Status Report Toward Quality Enhancement and Achievement of Universal Nine Year Basic Education: An Education System in Transition; a Nation in Transition. Washington DC: The International Bank for Reconstruction and Development / The World Bank. Accessed on 28 November 2018 from <http://documents.worldbank.org/curated/en/677741468107072073/pdf/579260SR0P11151353788B01PUBLIC10Web.pdf>

Iwakuni, S. 2017. Impact of initial teacher education for prospective lower secondary school teachers in Rwanda. *Teaching and Teacher Education*, 67: pp. 538-549.

JICA. (2012). *Basic Education Sector Analysis Report: Rwanda*. August. Tokyo: Japan International Cooperation Agency. Accessed from: http://open_jicareport.jica.go.jp/pdf/12083317.pdf

Lis, J. (2013). How 3 Technology Initiatives Are Improving Education in Rwanda. 3 December 2013. Accessed 12 December 2018. <http://technologysalon.org/how-3-technology-initiatives-are-improving-education-in-rwanda/>

Milligan, L.; Clegg, J. & Tikly, L. (2016) Exploring the potential for language supportive learning in English medium instruction: a Rwandan case study, *Comparative Education*, 52:3, 328-342, DOI: [10.1080/03050068.2016.1185258](https://doi.org/10.1080/03050068.2016.1185258)

MINEDUC. (2007). *Teacher Development and Management Policy in Rwanda*. Kigali: Ministry of Education. http://www.reb.rw/fileadmin/user_upload/documents/teacher_development_and_management_policy_final_2.pdf

MINEDUC. (2008). Nine years basic education implementation: Fast track strategies. Accessed on 27 November 2018 from http://mineduc.gov.rw/fileadmin/user_upload/9_year_B_E.pdf

MINEDUC. (2013). Education Sector Strategic Plan 2013/14 – 2017/18. Accessed on 27 November 2018 from http://mineduc.gov.rw/fileadmin/user_upload/Education_Sector_Strategic_Plan_2013_-_2018.pdf

MINEDUC. (2016a). Implementation framework for ICT in education. Accessed on 27 November 2018 from http://mineduc.gov.rw/fileadmin/user_upload/pdf_files/ICT_in_Education_Implementation_plan_April12016_approved.pdf

MINEDUC. (2016b). ICT in Education Policy. Accessed on 28 November 2018 from [http://mineduc.gov.rw/fileadmin/user_upload/pdf_files/ICT in Education Policy approved.pdf](http://mineduc.gov.rw/fileadmin/user_upload/pdf_files/ICT_in_Education_Policy_approved.pdf)

MINEDUC. (2016c). 2015 Statistical Education Yearbook. Accessed on 29 November 2018 from http://www.mineduc.gov.rw/fileadmin/user_upload/Amatangazo/2015%20Education%20Statistical%20YearbookF.pdf

MINEDUC. (2018). The role of education in the realization of Vision 2020. Accessed on 27 November 2018 from [http://mineduc.gov.rw/fileadmin/user_upload/VISION 2020 IN EDUCATION-2.pdf](http://mineduc.gov.rw/fileadmin/user_upload/VISION_2020_IN_EDUCATION-2.pdf)

Muvunyi, E., and Simpson, J. (2013). *Teacher training in Rwanda and the shift to English-medium education. Commonwealth Education Partnerships 2012/13*. Cambridge: Commonwealth Education Online.

NEPAD. (2005). Monitoring and Evaluation plan for NEPAD e-Schools demonstration project, e-Africa Commission.

Nuffic. (2015). Education system: Rwanda. Described and compared with the Dutch system. Accessed on 27 November 2018 from <https://www.nuffic.nl/documents/455/education-system-rwanda.pdf>

OECD. (2015). *Students, Computers and Learning: Making the connection*. OECD Publishing. http://www.keepeek.com/Digital-Asset-Management/oecd/education/students-computers-and-learning_9789264239555-en#.Wgrw12iCw2w#page4 Downloaded 14 November 2017

Pearson, E. (2013). Policy without a plan: English as a medium of instruction in Rwanda. *Current Issues in Language Planning*. 15. 39-56. 10.1080/14664208.2013.857286.

Rosendal, T. (2009). Linguistic markets in Rwanda: Language use in advertisements and on signs. *Journal of Multilingual and Multicultural Development*, 30(1), 19-39.

Rubagiza, J. & Were, E. & Sutherland, R. (2011). Introducing ICT into schools in Rwanda: Educational challenges and opportunities. *International Journal of Educational Development*. 31. 37-43. 10.1016/j.ijedudev.2010.06.004.

Samuelson, B., and Freedman, S. (2010). Language policy, multilingual education, and power in Rwanda. *Language Policy*, 9: pp. 191–215.

UNDP. (2018). *Human Development Indices and Indicators: 2018 Statistical Update*. New York: United Nations Development Program. Accessed on 28 November 2018 from http://hdr.undp.org/sites/default/files/2018_human_development_statistical_update.pdf

UNESCO. (2015a). Education For All 2015 National Review Report: Rwanda. Paris: UNESCO.
<http://unesdoc.unesco.org/images/0023/002317/231725e.pdf>

UNESCO. (2015b). Education 2030 Incheon Declaration and Framework for Action: Towards Inclusive and Equitable Quality Education and Lifelong Learning for All. Paris: UNESCO.

UNESCO. (2017). Global education monitoring report 2017/18: Accountability in education. Paris: UNESCO. Downloaded on 12 August 2018 from
<http://unesdoc.unesco.org/images/0025/002593/259338e.pdf>

UNICEF. (2016). Rwanda Country Review: The impact of language policy and practice on children's learning: Evidence from Eastern and Southern Africa 2016. Paris: UNICEF.

VOA News. (2018). 20 Years After Genocide, Rwanda Prospers but Political Freedom Remains Elusive. Accessed on 27 November 2018 from <https://www.voanews.com/a/years-after-genocide-rwanda-prospers-but-political-freedom-remains-elusive/1889977.html>

Wikipedia. (2018). Education in Rwanda. Accessed on 27 November 2018 from https://en.wikipedia.org/wiki/Education_in_Rwanda

Williams, T. Abbott, P. & Mupenzi, A. (2015). 'Education at our schools is not free': the hidden costs of fee-free schooling in Rwanda. *Compare: A Journal of Comparative and International Education*. 45 (6): 931–952.

Wojcikiewicz, S. (2005). *Perspectives on Support and Development: Teacher Induction Practices in Selected Foreign Countries as Seen through North American Lenses*. US-China Center for Research on Educational Excellence, Michigan State University.

Appendix 1: Research products

The investigation into the education and support of secondary school teachers in SSA produced seven research reports:

1. Literature Review

Taylor, N. and Robinson, N. (2019). SECONDARY EDUCATION IN SUB-SAHARAN AFRICA: Teacher Preparation and Support. LITERATURE REVIEW

2. Market Scan Report

Robinson, N. and Taylor, N. (2019). SECONDARY EDUCATION IN SUB-SAHARAN AFRICA: Teacher Preparation and Support: MARKET SCAN REPORT

3. Four Case Study Reports:

Adotavi, J. & Taylor, N. (2019). SECONDARY EDUCATION IN SUB-SAHARAN AFRICA: Teacher Preparation and Support. CASE STUDY: SENEGAL.

Arinaitwe, J., Taylor, N., Broadbent, E., and Oloya, C. (2019). SECONDARY EDUCATION IN SUB-SAHARAN AFRICA: Teacher Preparation and Support: CASE STUDY: UGANDA.

Taylor, N. and Robinson, N. (2019). SECONDARY EDUCATION IN SUB-SAHARAN AFRICA: Teacher Preparation and Support. CASE STUDY: SOUTH AFRICA.

Uwase, J. & Taylor, N. (2019). SECONDARY EDUCATION IN SUB-SAHARAN AFRICA: Teacher Preparation Support. CASE STUDY: RWANDA.

4. Overview Report

Taylor, N., Deacon, R. and Robinson, N. (2019). SECONDARY EDUCATION IN SUB-SAHARAN AFRICA: Teacher Preparation Support. OVERVIEW REPORT.



Appendix 2: Research questions

A set of research questions was formulated to probe policies and practices in each of the eight areas of interest:

1. Selection into ITE:

- What criteria are applied in selecting prospective teachers into ITE programmes?
- What is known about the knowledge and skills they bring from school?

2. ITE institutions

- What kinds of institutions train teachers (colleges/universities/schools)?
- What are the delivery modalities (face-to-face/distance/mixed)?
- What is the size and shape of the ITE system in terms of:
 - number of institutions;
 - enrolment numbers, through-put and drop-out rates, number graduating;
 - spend per teacher on teacher training;
 - the nature and extent of financial support offered to students;
 - percentage of the education budget allocated to teacher education; and
 - regional differences in provision and capacity?

3. The nature and content of ITE programmes:

- Describe the content of ITE courses in terms of the subject mix, the balance between content and pedagogical knowledge, the breadth and depth of subject content addressed, the pedagogical strategies advocated, and the nature of the teaching practice component.
- Are there differences between programmes for upper and lower secondary teachers? If so, how do they differ?
- Describe the content of the various programmes.
- To what extent are academic support programmes offered to assist learners with poor school results?
- If these academic support programmes are offered, what is the nature of these programmes and what are their success rates?
- What kinds of qualifications are offered (degree/diploma, length of study)?
- How is assessment done?
- What are the through-put rates and graduation numbers?

4. Induction

- Is there a formal induction process? If so, what is its nature?
- Are the schools used for induction selected? What about mentors?
- Do teachers feel they are adequately prepared for teaching in the schools in which they are placed, not only during formal induction (if this exists) but also during their first school placement as a certified teacher?

5. License to practice

- Is there a formal licensing process?
- If so, who undertakes this?
- How are prospective teachers assessed?

6. Performance management of teachers

- Is there a formal performance management system?
- If so, how does it work?

7. Continuous Professional Development (CPD)

- Is CPD formal (in terms of teachers being required to acquire CPD points over a certain period) or is it ad hoc?
- If CPD is formal, how does it work, and is it linked to re-licensing?
- What types of programmes are typically offered (in-school/out-of-school, length, frequency, content)?
- Are these programmes research-based? If so, describe kinds of research evidence available and the findings.
- Describe the content and duration of the various programmes.

8. Promotion

- Does promotion depend on further training?
- If so, what types of training programmes are required (qualification types, content, duration)?
- If not, how are teachers promoted into leadership positions?

Appendix 3: Key actors interviewed

1. Alphonse Hakizimana, Ngoma District Education Officer
2. Judith Murekatete, Ngoma District Director of Education
3. Robert Muvunangabo, Rusuma High School Director
4. Martin Habumugisha, Rusumo High School School Based Mentor
5. Samuel Karasira, Nyamugali Sector Education Officer
6. Josiane Ingabire, UR College of Education student
7. Noeline Gakuba, UR College of Education graduate
8. Dr Ignace Kabano, UR Lecturer
9. Ing. Germain Muvunyi, INES Ruhengeri Lecturer
10. Miss Benitha Nyampundu, MINEDUC Statistician

Appendix 4: French-English-education programme structure

Level	Semester	Code	Module	CU	
ONE	I	ENG 101	Introduction to English language and linguistics	20	
		FRA 101	Introduction à la langue française	20	
		COS 101	Communication skills	10	
		IRS 101	ICT and research skills	10	
	<i>Sub-total number of credits</i>				60
	II	ENG 102	Introduction to world literature	10	
FRA 102		Panorama de la littérature française	10		
EDC 101		Foundations of education	15		
EDC 102		Educational orientations	15		
PAS 101		Philosophical and anthropological studies	10		
<i>Sub-total number of credits</i>				60	
TOTAL NUMBER OF CREDITS PER LEVEL				120	
TWO	I	ENG 201	Language skills development	15	
		ENG 202	Language contrastive studies	10	
		FRA 201	Langue Française et institutions	20	
		EDC 201	Introduction to cognitive studies	15	
	<i>Sub-total number of credits</i>				60
	II	ENG 203	English literature	15	
FRA 202		Grammaire et expression française approfondies	20		
EDC 202		Educational evaluation	15		
EDC 203		Educational planning and technology	10		
<i>Sub-total number of credits</i>				60	
TOTAL NUMBER OF CREDITS PER LEVEL				120	
ENGLISH MAJOR					



THREE	I	ENG301	English language structure	15
		ENG302	Applied linguistics	15
		FRA 301	Structure de la langue française	15
		EDC 301	Educational policy	15
		TOTAL NUMBER OF CREDITS PER LEVEL		
FRENCH MAJOR				
FOUR	II	FRA 301	Structure de la langue française	15
		FRA 302	Littérature française et francophone	15
		ENG 301	English language structure	15
		EDC 301	Educational policy	15
		TOTAL NUMBER OF CREDITS PER LEVEL		
ENGLISH MAJOR				
FOUR	II	ENG 303	Language and society	15
		ENG 304	Meaning and use of language	15
		FRA 303	Sens et Usage de la langue française	15
		EDC 302	English language teaching methodology	15
		TOTAL NUMBER OF CREDITS PER LEVEL		
FRENCH MAJOR				
FOUR	II	FRA 303	Sens et usage de la langue française	15
		FRA 304	Etude des genres littéraires	15
		ENG 304	Meaning and use of language	15
		EDC 302	Didactique du français	15
		TOTAL NUMBER OF CREDITS PER LEVEL		
TOTAL NUMBER OF CREDITS FOR LEVELS THREE AND FOUR				120
FIVE	Internship and dissertation			120
PROGRAMME TOTAL NUMBER OF CREDITS				480

