Mapping the emergence of a gender gap in English in Rwandan primary and secondary schools

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There is very limited evidence globally of the impact that learning in an unfamiliar language has on girls' educational outcomes. In Rwanda, children learn in English medium instruction (EMI) classrooms throughout the basic education cycle, with a recent policy change removing Kinyarwanda as the medium of instruction for the first three years. This paper maps the trends between girls' results in English examinations, their wider educational metrics and the rurality, poverty and gender bias of the district where they live. Results suggest that English results at the primary level cluster around a low pass for boys and girls. However, gender differences become apparent by the secondary 3 English examinations where boys are outperforming girls in every district. Gender differences cannot be explained in our analysis by how rural, poor or gender biased the district is. Our conclusions suggest the importance of going beyond linear assumptions between rurality, poverty, gender bias and girls' performance and we suggest further, in-depth, research of classroom dynamics, English development and out-of-school factors to explore how learning in English is particularly affecting girls.

Introduction

Sustainable Development Goal (SDG) 4 calls on all countries to provide inclusive and equitable quality basic education for all children by 2030, with four targets specifically focused on girls' access and learning outcomes (United Nations, n.d.). From 2000, we have witnessed a significant improvement in girls' enrolment, but in most countries in the Global South, girls are more likely than boys to drop out early, not complete the basic education cycle and fail in national examinations (Global Monitoring Report Team, 2019). There is increasing policy understanding that dominant language-of-instruction is a major barrier to learning with UNESCO (2016) recently questioning, 'if you don't understand, how can you learn?' It is clear from evidence across many countries, that dominant language-of-instruction policies, such as English medium of instruction (EMI), impact some groups of children more than others – for example, those who do not use English outside of the classroom environment (Erling, Adinolfi & Hultgren, 2017; Essien & Msimanga, 2021; Milligan, Desai & Benson, 2020). However, little is known about the ways that such policies may specifically impact on girls' learning experiences and outcomes.

This paper begins to build the evidence base for the relationship between girls' education and learning in English through a national review of Rwanda, primarily based on the 2018 English examination results at primary and lower secondary level. We map the trends

across educational indicators (such as enrolment and progression rates), community gendered attitudes, English national examination results for girls and boys by districts. We also map these results against the poverty rates and relative rurality of each district. Through this we add new evidence to the literature focused on EMI within this journal, specifically in basic education, building on previous studies by Ghaith (2020) and Ozer (2020).

Literature review

Research evidence from Sub-Saharan Africa suggests that efforts to boost access to, and completion of basic education have led to a widening of the achievement gap between boys and girls, particularly in state schools (Lucas & Mbiti, 2012). Research has suggested the importance of classroom dynamics, out-of-school factors, regular attendance, teachers as role models, but rarely how this intersects with language. For example, in classroom research in Kenya, it has been argued that girls participate less in the classroom because they can be reticent to speak or because teachers call on them less (Lewin, Wasanga, Wanderi & Somerset, 2011). Research from ten francophone African countries, similarly, highlighted the significant role of the gender of the teacher on the performances of boys and girls. They suggest that female teachers help the performance of boys and girls in mathematics and reading in the foreign language and that female teachers influence girls' performances without negatively affecting boys' performances (Lee, Rhee & Rudolf, 2019). Akyeampong, Carter, Higgins, Rose, and Sabates (2019) highlighted how gendered dynamics can particularly impact lower achieving girls with teachers in Ghanaian public schools more likely to attend to boys in this category than girls. Significantly, follow-up research suggests that dynamics such as these can mean that girls who have joined public schools from the Complementary Basic Education program 'remain trapped in low performance' and are more likely to disengage in class or eventually drop out of school (Carter, Rose, Sabates & Akyeampong, 2020:9).

While the literature related to girls' educational inequalities is broad, there is much less evidence about the role of language of instruction in girls' educational experiences and outcomes. With a focus on the Asia-Pacific region, Benson (2005:1) argued for the use of mother tongue education given that there are 'strong indications that adopting a more appropriate school language makes a positive difference for girls, even more than for other disadvantaged learners.' This assertion is based on evidence presented by Hovens (2002) and Benson (2002) that girls who learn in home languages are more likely to be identified as good students by teachers, repeat less often and stay in school longer. These authors suggest that there is also tentative evidence that this translates into girls achieving better results, but this evidence is limited.

It could be assumed that the positive benefits of learning in mother tongue translate into a negative relationship between a dominant language of instruction and girls' education, potentially compounded by the geographical and socio-economic factors discussed above. Similarly, the in and out of school challenges facing girls identified in the broader educational literature could be inferred as inter-related to language of instruction. For example, if girls are less likely to speak in class, then there are fewer opportunities to

practice oral competencies deemed essential when learning in a second language. However, these are assumptions and inferences that need to be examined, and across contexts and levels of education. This is particularly because this counters the long-standing research evidence from the fields of second language acquisition, education and psychology which have observed that girls perform better than boys in learning a second language and the expression of verbal skills (Coskun 2014; van der Slik, van Hout & Stephens 2015). This includes educational assessment findings, for example, the PISA results from 2000 which show that 15-year-old girls from all participating countries outperformed boys (Geske & Ozola 2007). While the idea that girls outperform boys in second language acquisition has become received wisdom, most of these studies are from US and European contexts. Limited studies that have compared performances in, and motivation towards learning English as a second or foreign language in Sub-Saharan Africa have shown both significant differences in favour of girls at the primary level (e.g., Cekiso, 2016, in South Africa) and no differences at all (e.g., Agu, 2014, in Nigeria). Given the important role of English as a language of instruction at different levels of the educational system in Africa, such findings might suggest that girls are more likely to navigate education in English.

What emerges from this literature review is that there are competing views on the ways that learning in English may impact on girls' education. The first proposes that girls' learning may be restricted, as language intersects with classroom dynamics and out-of-school factors which negatively impact girls, as well as suggestions that girls learn better in mother tongue education programs. The second contradicts this by suggesting that girls may be both more motivated than boys to learn English and to achieve better learning outcomes. It is important to note that a significant gap in the literature reviewed here is the lack of studies that have looked at girls' learning in English. The analysis presented in this paper talks directly to this debate by exploring the relationships between girls' learning metrics, gendered attitudes, and English primary and lower secondary examination results in Rwanda.

Rwanda is an excellent case for exploring this since it has seen great expansion of the notion of basic education to nine years (2009) and twelve years basic education (2013), as well as a switch to EMI, with a slight difference in favour of girls attending secondary education whereby participation rate for this group was 46.7% of girls against 44.3 % of boys (MINEDUC, 2019). However, over the years, significantly fewer girls have passed national secondary examinations or continued to higher education. English has been the language-of-instruction from primary four but the Rwandan government announced in December 2019 a change to the first year of primary school (Williams, 2021). Recent research has indicated that EMI is a significant barrier to learner participation and success in school tests (Milligan, Clegg & Tikly, 2016). Rwanda has also seen large government and donor investment in the early years of primary education through the *Building Learning Foundations* program. Research conducted within this program has suggested that there are some general gender differences (Building Learning Foundations, undated).

Method

The analysis presented in this paper is part of a multi-level exploratory case study research design which aims to explore the case of English medium instruction in basic education from a gender perspective (Yin, 2011). This design recognises that a full exploration of girls' educational experiences and institutional injustices cannot be achieved through a single data collection method, such as the analysis of enrolment rates, or a single context, such as just the school classroom (Unterhalter et al., 2014).

The analysis presented here is from the first contextualising phase of the project and identifies trends in descriptive statistics from multiple datasets related to girls and English. Given the lack of ID variables, the datasets are not directly compared. Rather, co-occurring trends are identified through looking at the trends at district level between rurality, poverty levels, girls' schooling metrics, English language examination scores and community gendered attitudes. The data sources and definitions for each of these are given in Table 1. It is important to note a key limitation of this analysis. A thorough data search has shown that there are no data that explicitly tests Rwandan children's English proficiency beyond Primary 4 since 2011. The results in the subject of English are the next most appropriate demonstration of children's English proficiency. All the statistical analysis was conducted by Milligan in 2019. We look at these trends at the district level because this is the lowest unit that most of the datasets were made accessible to us.

Figure 1: Map of Rwanda's thirty districts (Provinces - Green: Kigali; Red: Eastern; Blue: Southern; Orange: Western; Yellow: Northern). Source: Ntirenganya (2016)

Table 1: Units of analysis

Unit of analysis	Dataset	Definitions
Rurality	2012 census data	Proportion of district population who live in rural areas
Poverty levels	2016/17 EICV5: A longitudinal household survey, National Institute of Statistics of Rwanda	Proportion of district population living in poverty or extreme poverty
Girls' schooling metrics	2018 National Education Statistics at primary and lower secondary levels	Enrolment rates Repetition rates Progression rates Drop-out rates
English language	2018 National Examination English results, Primary six and Secondary three	Examination results by district for boys and girls at distinction (70+), credit pass (50-69%), low pass (40-49%) and fail (below 40%)
Gendered community attitudes	2016/17 EICV5	Latent class analysis of all male respondents' questions related to gender (see Appendix 1 for a technical endnote on this analysis)

The trends identified here were also explored in more detail in policy interviews. Semi-structured interviews with four national level stakeholders triangulated findings from the quantitative analysis (see Appendix 2 for the interview questions). These interviews included those from the national government and donor communities. Given the very sensitive nature of the English in education debate in Rwanda, we respected the wishes of many potential participants who were wary of participating and we have been particularly careful to protect the anonymity of interviewees through giving no contextual information beyond their identification as someone involved in national education policy. The interviews were conducted in the second half of 2019 by Uworwabayeho and Kuchah and thematically analysed by all three authors, i.e. analysed by those involved in the statistical analysis and those not (Vaismoradi & Snelgrove, 2019).

Findings

District demographics

The majority of Rwanda is rural. Away from Kigali city, there are only two districts where more than 25% of the population live in urban areas (Rubavu 63.0% rural and Musanse 72.3% rural). There are nine districts where more than 95% of the population live in rural areas. As shown in Table 2, these are spread across the four non-Kigali regions of the country.

Table 3 shows how there is some correlation between the poverty and rurality rates, particularly in relation to the most and least rural districts. The three Kigali districts are the

three richest (for example, Kicukiro is 87.9% urban and less than 20% of the population

Table 2: Rurality

Most rural districts*	Least rural districts**
Gisagara (Southern)	Nyarugenge (Kigali)
Nyaruguru (Southern)	Gasabo (Kigali)
Rutsiro (Western)	Kicukiro (Kigali)
Nyamasheke (Western	Rubavu (Western)
Rulindo (Northern)	Musanze (Northern)
Gakenke (Northern)	
Burera (Northern)	
Kirehe (Eastern)	
Ngoma (Eastern)	

* More than 95% of the population live in rural areas;
** Less than 75% live in rural areas

live in poverty). Nyamasheke is both the most rural (98.4%) and has the highest poverty rates (over 60%). In fact, the five most rural districts have the highest rates of both poverty and extreme poverty in the country. However, the less rural districts away from Kigali – Rubavu and Musanze – have comparatively high poverty rates. For example, in Musanze, the poverty rate is between 35.1-45% and the extreme poverty rate is between 16.1-21.3%. This compares with the lowest poverty (less than 20%) and extreme poverty (3.5-8.7%) rates for all three Kigali districts. This suggests a Kigali to the rest of the country split; something that was a very clear theme to come through in the analysis of the policy interview data. However, there are some very rural districts with lower poverty rates. For example, Gakenke is 97.2% rural but has lower poverty rates than Rubavu and Musanze with 20.1%-35% living in poverty. This encourages attention to the nuances across the 'rest of the country' districts and in particular, to the rural experience.

Table 3: Poverty rates

Poorest districts*	Richest districts**
Gisagara (Southern)	Nyarugenge (Kigali)
Nyaruguru (Southern)	Gasabo (Kigali)
Rutsiro (Western)	Kicukiro (Kigali)
Nyamasheke (Western)	Kayonza (Eastern)
Rulindo (Northern)	Kamonyi (Southern)

* Those with 45% + poverty rates and 20% + extreme poverty;
** Poverty rates of less than 35% and less than 8.7% extreme poverty

The latent class analysis of the gender-related questions in the household survey, identified three main classes: men not showing gender bias (the highest), those showing bias through support for some form of gender violence, and those who think that men should control finances (see Appendix 1 for details of this analysis). Nationally, gender bias was

shown to be lower among the urban population (82.3% not showing gender bias compared with 74.5% in rural areas). However, it did not follow that the most rural or most poor districts were those where higher rates of gender bias exist (see Table 3).

Table 4: Gender bias

Districts with highest rates of gender bias*	Districts with lowest rates of gender bias**
Rulindo (Northern) 55%	Ruhango (Southern) 2%
Burera (Northern) 41%	Nyabihu (Western) 7%
Musanze (Northern) 40%	Nyamasheke (Western) 8%
Nyanza (Southern) 33%	Nyaruguru (Southern) 10%
Nyamagabe (Southern) 32%	Ruhango (Southern) 2%
Rutsiro (Western) 32%	Bugesera (Eastern) 10%
Rubavu (Western) 32%	
Gakenke (Northern) 32%	
Kirehe (Eastern) 32%	
Kayonza (Eastern) 31%	

* 30% or higher showing gender bias;
** Less than 10% showing gender bias

While Rulindo has the highest rates of gender bias (19% gender violence; 25% money controlling), Nyamasheke (most rural and most poor) has one of the lowest rates of gender bias (8%). Musanze and Rubavu (among the least rural) feature in the list for higher rates of gender bias. The three Kigali districts do not appear in the lowest rates of gender bias (ranging from 13% to 20%). This was something that the four interviewees found particularly surprising. For example, one remarked 'I would have expected people in the cities like Kigali to have the attitude towards gender to be slightly different to those in rural areas (policy interview 3). These findings suggest that there are no simple, linear relationships between poverty, rurality and gender bias across the thirty districts of Rwanda. Differences in educational access and outcomes cannot be explained alone by these socio-economic or geographic out-of-school factors.

Primary education

At primary level, we see very high enrolment rates for both girls and boys. There are slightly more girls enrolled (88.2% net enrolment as compared to 87.1% for boys) nationally and in 24 of 30 districts. The three districts with the highest enrolment for girls are Muhanga (95.4%), Ruhango (94.7%) and Burera (94.2%). Of these, Muhanga is not remarkable in terms of rurality, poverty or gender bias rates, Ruhango stood out as the district with the lowest rate of gender bias and Burera as one of the most rural and with the highest rates of gender bias. In the six districts where enrolment rates are higher for boys, the biggest difference is in the Kigali district of Kicukiro (6.1%) and Rulindo (5.8%) – the district in the North that was identified as having the highest rates of gender bias. Nyagatare is the district with the lowest rate for girls (79.7%), but it is also the lowest rate

for boys (76.9%). Girls' repetition rates are also nationally lower (23.3% for girls; 26.6% for boys).

In every district, more girls than boys are sitting the primary English examination. Nationally, 55% of children sitting P6 English are girls. The highest proportions are in Gakenke (58%) and Burera (57%), two of the most rural districts in the country. While more girls are sitting the P6 English examination, the pass rate is broadly comparable between girls and boys. If we only look at the proportion passing the P6 examination, we see a very high pass rate, with girls doing slightly better than boys in almost all districts. The highest pass rate for girls is in the Kigali districts (all 99%). In only seven districts are pass rates less than 95%. One of the districts with the lowest pass rate for girls is Rulindo (89.52%) – the district with the highest gender bias – but the pass rate is also lower for boys (83.59%).

While failure rates are low, a key finding from our analysis is that the vast majority of those passing are getting the lowest pass of 40-49%. If we look at the proportion of students that are scoring less than 50%, outside of the three Kigali districts, more than two thirds of girls are scoring less than 50%. The proportion is the highest in Ngororero (Western) where 91.32% of children are scoring less than 50% (91.38% for girls; 91.25% for boys). While the numbers nationally are broadly comparable for boys, there are only four districts where the proportion of boys scoring less than 50% is higher than girls. However, it is also important to note that one of these is Rulindo where 93.75% of boys are scoring less than 50% - the highest of any district – and higher than the 86.26% of girls. Therefore, while we see some gender differences at district level, these differences are relatively small, and it is not clear how the differences can be explained.

If we look to the proportion of children that are scoring a distinction (70+), we see a much larger difference across the country, especially between Kigali and the rest of the country. Away from Kigali, the proportions of children scoring distinction are very low – in half of the districts, less than 1% of girls and boys are getting a distinction. By comparison, in Kicukiro (Kigali), around one in five (20% of girls and 22.14% of boys) score above 70%. Policymaker interviewee 1 highlighted that it is not possible to link directly language proficiency and test scores because the examination does not include an oral component and there is little comprehension or vocabulary relevant to other subjects. However, despite this, we agree with other interviewees who suggested it is possible to surmise that a child scoring above 70% is likely to have good command of the academic English used in the English medium classroom while a child scoring 40-49% is likely to encounter some issues with understanding the English medium curriculum.

The potential that language can impact on foundational learning in primary schooling was highlighted across the interviews, with one interviewee particularly pointing to the concerns that lack of full proficiency in the language of instruction will make it harder for many children to keep up with the demands of the new competency-based curriculum 'with a much higher cognitive and linguistic... that requires much higher order thinking and reasoning and speaking and listening skills' (policy interview 4). All interviewees were asked about their reflections of the impact of the large proportion of learners scoring less

than 50% in English P6 exams. All four surmised that this may have an impact on the base level of comprehension for learners as they enter secondary education and where other gender-based factors may become more significant, as discussed in the next section.

Secondary education

At secondary level, there are more girls than boys enrolled nationally (25.1% compared with 21.3%) and in 26 of 30 districts. Only in Gasabo (Kigali - 9% higher boys' enrolment than girls'), Kicukiro (Kigali - 3.3%), Rutsiro (Western - 0.5%) and Rubavu (Western - 0.7%) are there more boys than girls. While it is interesting to note the difference in enrolment for Kicukiro and Gasabo, it is important to note that for both boys and girls, enrolment is significantly higher in Kigali than the rest of the country. For example, in Kicukiro, almost half of girls are enrolled in secondary school (49%). Enrolment rates for both girls (12.5%) and boys (10.9%) are lowest in Ngororero (Western). There are higher proportions of girls sitting the S3 English exam. This is true in 24 of 30 districts with the highest proportion in Kamonyi (58% of all children sitting the exam being girls).

Thus far we have seen some few significant differences by gender. This changes when we look at the S3 English examination results. Although girls are more likely to be sitting the test, in all 30 districts, the pass rate is lower for girls than for boys (Figure 2). The largest gaps in pass rates between boys and girls are in Rusizi (Western - 21.08%), Burera (Northern - 15.99%), Rubavu (Western - 15.45%), Gicumbi (Northern - 14.06%), Kirehe (Eastern - 13.48%) and Nyamagabe (Southern - 13.23%). These are wide gaps and are particularly noteworthy given the minimal differences both between girls' and boys' English results across the country at primary level and enrolment rates.
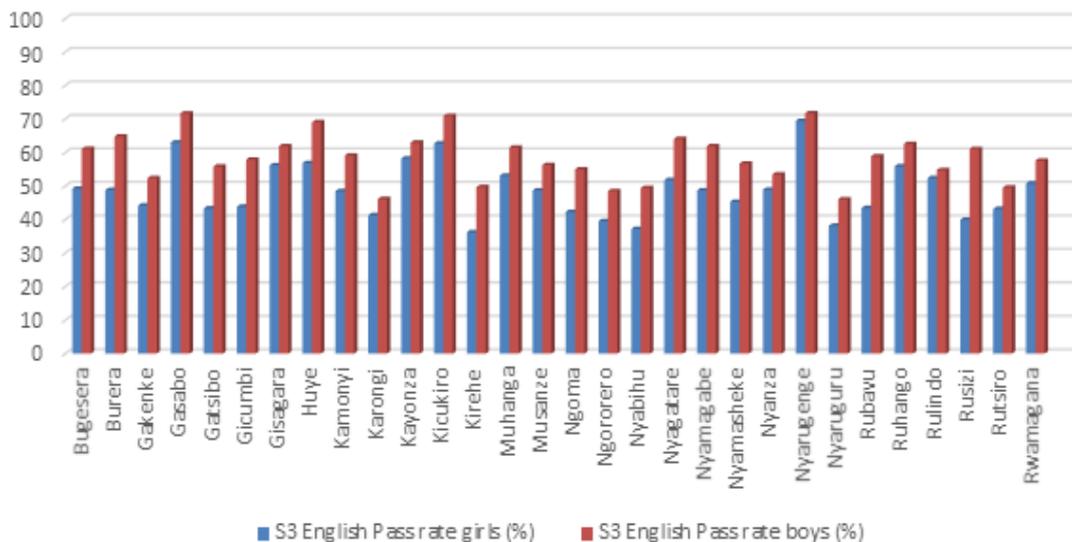

Figure 2: Secondary 3 examinations pass rate by gender

In 19 of 30 districts, more than 50% of girls are failing the English S3 examination. These 19 districts are spread across all four non-Kigali province of the country but three of the districts with the highest rates are from the Western province. This compares to just five districts where the failure rate is above 50% for boys. The six districts with the highest failure rates are given in Table 5, together with some descriptive information about each district directly correlated to the most rural or those with highest rates of poverty. Three of the six districts are among the most rural, while just one is among the most poor or where there was higher gender-based bias. This is a finding that particularly surprised all four policy interviewees who had surmised that differences at the lower secondary level may, at least partially, reflect gender biases in the home and wider community.

Table 5: Districts with highest failure rates for girls in S3 English exam

Districts with highest failure rates	Among the most rural?	Among the poorest?	Among the highest for gender-based bias?
Kirehe (Eastern) 63.77%	Yes	No	Yes
Nyabihu (Western) 62.77%	No	No	No (among the lowest)
Nyaruguru (Southern) 61.84%	Ye	Yes	No (among the lowest)
Ngororero (Western) 60.47%	No	No	No
Karongi (Western) 58.69%	No	No	No
Ngoma (Eastern) 57.70%	Yes	No	No

Given the low enrolment rates in many districts, this means that the numbers of girls that are completing S3 with a pass in English is low. In Ngororero, for example, where enrolment rates are the lowest, this results in only one in twenty (4.94%) completing basic education with at least a pass in English. This compares with almost one in three (30.73%) girls in the Kigali district of Kicukiro (and 37.10% of boys in the Kicukiro). This points to the widening of the gap between Kigali and the rest of the country which is far beyond the gap at primary level.

Another very interesting finding is that whereas P6 results clustered around low pass, for both boys and girls that can pass S3 English, there is a bigger range in their results. However, in most districts larger numbers of boys are achieving distinction and credit passes across the country. In 23 of 30 districts, the proportion of boys achieving a distinction is higher. Nationally, 4.48% of girls and 6.00% of boys are achieving a distinction in S3 English. It is interesting to note that the distinction rate of 5.19% is higher than that for P6 English which is just 3.02%. Again, here we see a widening of the gap between Kigali and the rest of the country. In Nyarugenge (Kigali), 19.55% of girls sitting the S3 English exam are scoring a distinction; 6.00% higher than the proportion of boys. By comparison, in four districts from the Northern (Burera), Eastern (Kirehe) and Western (Rusizi and Rutsiro) provinces, less than 1% of girls sitting the S3 examination are scoring a distinction.

Discussion and conclusion

There are several key findings. The first is that English language at the end of primary schooling is low for the majority of both female and male learners. Although in most districts the pass rate is over 95%, outside of the three Kigali districts, more than two thirds of girls are scoring between 40 and 49%. Although it is hard to draw conclusions about language proficiency from results in English tests, it is possible to surmise that the language levels in a classroom in Ngororero (Western) where nine out of ten (91.32%) children are scoring less than 50% in the English test will be significantly different to those in a classroom in Nyarugenge (Kigali) where the number is less than half. Results at district levels are broadly comparable for boys and girls, and where girls are scoring lower on average, there is no clear pattern to the district profiles, such as poverty or rurality levels. We can conclude that while some metrics for girls across the country are very positive – including enrolment and pass rates – it is important to note the low levels of English for so many girls as they finish primary schooling and transition to lower secondary level. While there are large numbers of both girls and boys with low pass rates, the suggestions in the literature from Ghana that low performing girls may be more at risk of continued poor engagement and dropout indicates that this is an issue that needs to be particularly highlighted for girls (Akyeampong et al., 2019; Carter et al., 2020:9).

More girls are enrolled in secondary schools than boys, but our findings suggest that there is something significant that happens for girls' learning in the three years of lower secondary schooling. While English results were broadly comparable at the primary level, we see boys outperforming girls nationwide in the secondary three examinations. This suggests an achievement gap that is widely noted (see, for example, Unterhalter et al., 2014), but also points to a potential gap in English language proficiency between girls and boys that may impact on how girls can engage with the other subjects in the curriculum. This leaves the question of whether girls' lower achievement in a maths examination in English reflects their lower achievement in maths or their lower achievement in learning maths in English medium classrooms. As discussed in the literature review, there is evidence that girls are more engaged and less likely to drop out when learning in their mother tongue (for example, Benson, 2005). However, how far learning in English impacts on achievement is still unclear. What is clear is that this is an issue that needs in-depth research in Rwandan classrooms and with the girls that are learning in those classrooms.

Our findings at both the primary and secondary level suggest that there is a Kigali-rest of the country divide and that it is particularly evident at the secondary level in terms of girls' enrolment, outcomes and the gap between girls' and boys' results. However, there are no clear relationships between rurality, poverty, higher gender biases and the assumed impact on girls' education in the medium of English. The sample for the gender bias results is representative but quite small with implications for the strength of conclusions that can be drawn. However, it is interesting that it suggests a challenge to the view that gender bias is higher in rural areas and among poorer families. This suggests that prevalence of gender bias in the household may not be a major factor in girls' lower achievement in English; a finding that challenged the policymaker interviewees' assumptions. Similarly, although in

some cases, those more rural and poorer districts were those where girls' performance was lower, this was not consistent. It is clear again to us that more in-depth analysis within districts from across the country is needed to explore the English-medium question for girls' enrolment, engagement and achievement. In the next phase of our case study, we are exploring some of these issues at the school level, in the four districts outlined below. Data was collected through classroom observations, narrative interviews with 48 girls in P6 and S3, and teacher interviews in the first half of 2021, having been delayed from 2020 due to school closures in response to the Covid-19 pandemic.

Table 6: Districts for next stage of case study research

District (Province)	Details	Map
Kirehe (Eastern Province)	*Background:* One of the most rural districts; average poverty levels; higher than average gender-based bias. *Primary level:* Below average primary enrolment but higher for girls than boys; highest proportion of girls 40-49% at P6 English *Secondary level:* Highest failure rate for girls at S3 English.	
Ruhango (Southern)	*Background:* Rural, but not among the highest; average poverty levels; lowest gender-based bias *Primary level:* Highest enrolment at primary. *Secondary level:* below average enrolment for secondary (comparable to boys); Among the lowest failure rates at S3 English for girls (only 6% gap to boys).	
Nyarugenge (Kigali)	*Background:* Lowest rurality and poverty; average for gender-based bias. *Primary level:* above average primary enrolment; 10% distinction at P6 English (but lower than other Kigali districts). *Secondary level:* One of the highest secondary enrolment for girls and comparable to boys; Girls outperforming boys in S3 English with highest distinction rates for girls in country.	
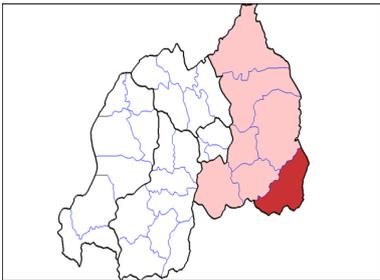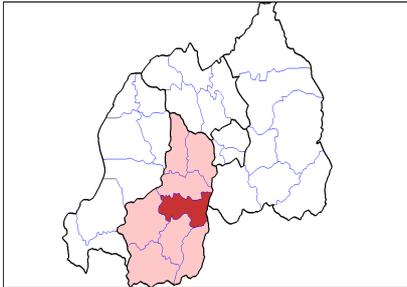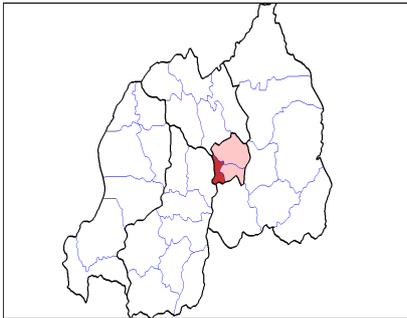
Burera (Northern)	*Background:* One of the most rural and highest poverty rates; one of the higher for gender-based bias *Primary level:* One of the highest primary enrolment rates (and higher for girls). *Secondary level:* Below average enrolment for girls; Lowest distinction at S3 English and highest failure gap between boys and girls.	
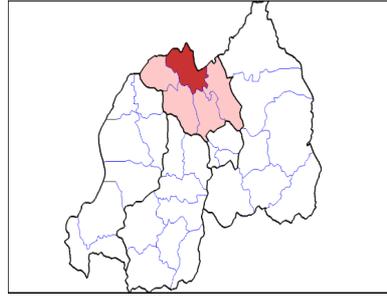
In the next stage of our research (analysis ongoing at time of publication), we are exploring in more detail the classroom, school and wider community factors that impact on girls' learning in English. We look at girls' education through a language perspective and the ways that 'language is a dimension of intersubjectivity and exclusion' (Julé, 2004:14), and how girls' experiences are impacted by learning in a language that many will not understand. Through this, we hope to bring further evidence to the findings presented in this paper, that there are no simple correlations between gender, language and community factors, and shine a light on the individual experiences of girls that go beyond some of the simple stereotypes that can still characterise educational policy planning.

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Appendix 1: Technical note on latent class analysis

To analyse the gender bias in the wider community, analysis was undertaken of the male respondents' answers to relevant questions in the 2014-15 Demographic Household Survey. The survey used a stratified sampling approach to include 12,793 households representative of the Rwandan population (National Institute of Statistics of Rwanda, 2016). Male interviews were conducted in every second household, with a total sample of 6,217 men. Data collection was completed between November 2014 and April 2015.

Latent class analysis was undertaken in R for male responses to the following gender-bias questions in the household survey data:
- person who usually decides what to do with money husband earns (v9246)
- person who usually decides on household purchases for daily needs (v9249)
- beating justified if wife neglects the children (v9251)
- beating justified if wife argues with husband (v9252)
- beating justified if wife refuses to have sex with husband (v9253)
- beating justified if wife burns the food (v9254)
- ideal number of boys discrete numeric (v12196)
- ideal number of girls ideal number of girls (v12197)

Two, three and four cluster models were tested, including and excluding the questions related to child preference, and the three-class model, without child preference, was selected as having the lowest BIC value (22995.21). The latent classes were checked to see if there were clear qualitative differences in the class descriptions with the classes explained as:

Class	Class 1: Controlling money	Class 2: Violence towards women	Class 3: No discernible bias
Total estimated class population shares	*0.2246*	*0.0652*	*0.7101*
Man usually decides what to do with the money	0.364200774	0.07743305	8.58352E-20
Man who usually decides on household purchases	0.631495441	0.15813585	9.41527E-10
Violence justified if wife neglects children	0.073855394	0.81169341	0.065380771
Violence justified if wife argues with him	0.011531166	0.717692	0.002222449
Violence justified if wife refuses sex	0.028018098	0.56684443	0.026947101
Violence justified if wife burns food	0.000481277	0.21937755	0.002118183

The table below shows how the classes are split by district.

District	Class 1	Class 2	Class 3
Nyarugenge	53 (18%)	6 (2%)	242 (80%)
Gasabo	28 (10%)	2 (1%)	250 (89%)
Kicukiro	36 (12%)	2 (1%)	263 (87%)
Nyanza	42 (22%)	25 (13%)	125 (65%)
Gisagara	15 (8%)	25 (13%)	147 (79%)
Nyaruguru	17 (8%)	5 (2%)	194 (90%)

Huye	30 (13%)	9 (4%)	185 (83%)
Nyamagabe	43 (20%)	24 (11%)	143 (68%)
Ruhango	3 (2%)	0 (0%)	192 (98%)
Muhanga	53 (26%)	6 (3%)	148 (71%)
Kamonyi	44 (20%)	1 (0%)	171 (79%)
Karongi	34 (16%)	28 (13%)	146 (70%)
Rutsiro	48 (27%)	10 (6%)	122 (68%)
Rubavu	26 (12%)	44 (20%)	147 (68%)
Nyabihu	7 (4%)	5 (3%)	150 (93%)
Ngororero	23 (13%)	5 (3%)	150 (84%)
Rusizi	45 (19%)	13 (6%)	178 (75%)
Nyamasheke	12 (7%)	2 (1%)	158 (92%)
Rulindo	44 (25%)	34 (19%)	97 (55%)
Gakenke	51 (30%)	4 (2%)	117 (68%)
Musanze	47 (24%)	31 (16%)	116 (60%)
Burera	55 (30%)	19 (10%)	108 (59%)
Gicumbi	19 (9%)	27 (13%)	156 (77%)
Rwamagana	54 (26%)	8 (4%)	143 (70%)
Nyagatare	39 (19%)	7 (3%)	155 (77%)
Gatsibo	46 (23%)	2 (1%)	154 (76%)
Kayonza	41 (20%)	22 (11%)	139 (69%)
Kirehe	60 (30%)	4 (2%)	136 (68%)
Ngoma	51 (24%)	5 (2%)	155 (73%)
Bugesera	14 (7%)	4 (2%)	171 (90%)

Appendix 2: Policy interview questions

1. Could you start by telling me a bit about your role at X.
    [PROBE fully for how their role relates to girls' education and/or language of instruction]
2. What do you understand to be the main success stories in Rwanda related to girls' education and/or language of instruction [delete as appropriate]?
3. And what do you think are the main challenges related to girls' education and/or language of instruction [delete as appropriate]?
4. What, if anything, has your organisation been doing to address these challenges?
5. Have you considered in your work whether there is an impact of language of instruction on girls?
    If YES, how?
    If NOT, thinking about it now, do you think there may be any impact? What makes you say that?
    We have conducted statistical analysis of primary and secondary English results and national educational statistics, such as rates of enrolment and progression. We have found that more girls than boys are enrolled in primary school and taking P6 tests. Girls and boys are getting comparable results but the majority of children are scoring a low pass. However, in secondary, although there tend to be more girls than boys in lower secondary, boys out-achieve girls in almost every district in S3 with higher rates of passing and distinctions for boys.
6. a. What are your thoughts on these findings? Do they resonate with your own understanding of these issues? Is there anything that you are surprised by?
    b. How hard do you think the P6 English test is? How far can we see it as a reflection of

     how children can cope in the medium of English in other classes?

  c. What do you think is going on in lower secondary to account for the drop in attainment? Do you think any of this can be accounted for by learning in the medium of English?

We have also analysed household survey data to see if trends exist between the results from the language and education data analysis and community gendered attitudes. We did this by looking at household survey data and conducted latent class analysis of men's answers to questions related to gender such as attitudes to household finances and gender-based violence. We have found that there is no clear trend between gendered attitudes and rurality. In most cases, higher rates of gender-based biases do not suggest lower attainment or enrolment for girls.

7. a. What are your thoughts on these findings? Do they resonate with your own understanding of these issues? Is there anything that you are surprised by?

    b. Are there any districts where you think there would be higher rates of gender-based biases in the wider community? Why?

8. Do you have any questions about the analysis that we have done?

9. And finally, is there anything else that we haven't talked about today that you were expecting to talk about? Or anything else you would like to add?

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