# REPUBLIC OF RWANDA


## MINISTRY OF EDUCATION

## NINE YEARS BASIC EDUCATION IMPLEMENTATION

## FAST TRACK STRATEGIES

## NOVEMBER 2008

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# 1. 0 EXECUTIVE SUMMARY

Nine Year Basic Education is nine years of free compulsory education for all Rwandese school children. It consists of six years of primary education and the first three years of secondary school (Tronc Commun). It is defined as: "All children to be able to get education in nine years, this is made up of six years of primary education and three years of general cycle of secondary education without paying school fees."

This Concept Note recommends the use of three strategies; specialization of teachers, reduction of core courses and doubles shifting, in order to reduce the costs and time to complete the roll out of Nine Years Basic Education in Rwanda. This document makes the case that it will be necessary to use all the three strategies to ensure maximum benefit.

The document defines specialization of teachers as when teachers in primary and secondary specialize in specific subjects. Specialization increases a school's flexibility to create their time tables which in turn allows them to reduce the number of teachers in primary 1 to 6. The extent to which a school can save on teachers is in part determined by the number of core courses.

Reduction of core courses will improve quality of education by increasing the number of hours a child spends per subject especially in primary 4 - 6. It is a strategy that NCDC has been working and the proposed changes are incorporated within this document, these are the major highlights:

Currently, in primary 1-3, students study 9 subjects (Kinyarwanda, English, French, Maths, Moral Education, Science and Technology, Religious Studies, Civic Education and Art). With the proposed system, primary 1-3 will study 5 subjects (Kinyarwanda, English, French, Maths, General Paper and compulsory extra curricular activities of sport, culture, clubs, spiritual activities, music, drama, dance etc).

In primary 4-6, students currently study 11 subjects (Kinyarwanda, English, French, Maths, Political Education, Science and Technology, Religious Studies, Civic Education, Art, History and Geography). The proposed system will reduce this to 6 subjects (Kinyarwanda, English, French, Maths, Science and Technology, Social Studies and compulsory extra curricular activities of sport, culture, clubs, music, dance, drama etc).

Double shifting is the strategy which depends on the other two strategies in order to be effective. Double shifting means having two sessions per day of the same class. Double shifting done correctly would improve student teacher ratios, bring

savings in the number of teachers required for Nine Years Basic Education and reduce the estimated construction costs for Nine Years Basic Education. Double shifting does not save on teachers unless there is specialization and reduces the quality of education unless there is a reduction of core courses.

This document provides a case study of the Kicukiro school were double shifting combined with the reduction of core courses and specialization can effectively be used in primary 1-6. The initial benefits are a reduction of 12 streams per year group (Primary 1 to Primary 6) to 6 streams in the morning and 6 streams in the afternoon.

The following are additional range of positive gains.

- The pupil teacher ratio of 56: 1 decreases to 45: 1 in primary 1- 3 and decreases to 37:1 in primary 4-6.
- The number of required classrooms decreases from 60 to 38 with a gain of 22 classrooms
- The number of required teachers decreases from 10 to 7 per year group in primary 1- 3 and from 10 to 9 per year group in primary 4- 6

Finally the document reviews and finds the potential gains as applied to the whole country, district by district.

## 2. 0 BACKGROUND

Nine year basic education is defined as: "All children to be able to get education in nine years, this is made up of six years of primary education and three years of general cycle of secondary education without paying school fees. This means all children of school age must go to school. Also children must remain in school and complete their education within the set number of years. Reducing repetition and drop out rates are key to this. Nine year basic education intends to put in place measures to provide a rapid increase of children going to general cycle of secondary education. This document highlights strategies to increase the transition rate to Tronc Commun.

The objectives under nine year basic education policy include:

1) Each child must start and complete primary education within the specified period; starting school at aged 7 and completing within 6 years.

2) Rapid increase in the number of children enrolling in Tronc Commun to ensure that each child has the opportunity of nine year basic education that can enable him/her to cope with life.

In summary, the nine year basic education policy aims to universalise primary education, and increase completion rates. Capacity at Tronc Commun level will be increased so as to improve the gross enrolment rate at this level of education and increase the transition rate from primary school.

The following statements provide a summary of the policy aims.

1. Reduce repetition rate at primary school from 19% in 2004 to 6% in 2015
2. Reduce drop out rate at primary school from 14% in 2004 to 5% in 2015
3. Pupil-teacher ratio at primary school reduced from 67 in 2004 to 45 in 2015
4. Class size at primary school reduced from 51 in 2004 to 45 in 2015
5. Gross Enrollment rate at Tronc Commun to increase from 20% to 62% by 2015
6. Transition rate to Tronc Commun will reach 75% by 2015
7. Reductions in % of students boarding at Tronc Commun from 58% to 8% by 2015

These policy statements shall lead to increased enrollments at different levels in the next eight years as indicated in the table below:

| Enrollment by Level | 2004 | 2010 | 2015 |
|---|---|---|---|
| Primary (All) | 1,752,588 | 2,076,706 | 1,791,163 |
| Tronc Commun (Public and L.S) | 77,996 | 201,269 | 376,576 |
| Tronc Commun (Private) | 53,431 | 76,838 | 95,209 |
| Upper Secondary (Public and L.S) | 36,041 | 49,763 | 73,162 |
| Upper Secondary (Private) | 36,083 | 46,839 | 48,886 |

These projections will demand increased numbers of trained teachers, more learning materials and more classrooms. The challenge will be to develop effective implementation strategies for a large scale investment in improved quality and expanded capacity.

A major challenge will also be to access the required financial resources. What is evident is that there is a significant capital financing gap for planned construction and teacher salaries to meet projected enrollment increases. The tables in the following pages provide the cost implications of:

1) Teacher Supply and Teacher Training

2) School Infrastructure Development

3) Capitation Grants

## Teacher and classroom projections and costing[1]

| Teacher Projections | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Primary** | | | | | | | | | | |
| Teacher stock required | 32,785 | 34,668 | 36,467 | 38,242 | 39,949 | 40,978 | 41,764 | 42,524 | 43,381 | 42,590 |
| Projected new teacher demand | 2,866 | 2,839 | 2,869 | 2,854 | 2,228 | 2,015 | 2,013 | 2,133 | 510 | 942 |
| Cost of teacher Salaries (Mills) | 18,253 | 20,634 | 23,155 | 25,859 | 27,601 | 28,933 | 30,143 | 31,383 | 32,750 | 32,906 |
| | | | | | | | | | | |
| **Tronc Commun** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** |
| Teacher stock required (Pub+Priv) | 5,637 | 6,186 | 6,899 | 7,883 | 9,063 | 10,383 | 11,698 | 12,911 | 13,932 | 14,717 |
| Projected new teacher demand | 831 | 1,022 | 1,329 | 1,574 | 1,773 | 1,834 | 1,798 | 1,666 | 1,482 | 1,465 |
| Cost of teacher Salaries (Public) | 1,891 | 2,315 | 2,898 | 3,733 | 4,813 | 5,836 | 6,894 | 7,912 | 8,813 | 9,556 |
| | | | | | | | | | | |
| **Upper Secondary** | | | | | | | | | | |
| Teacher stock required (Pub+Priv) | 3,278 | 3,348 | 3,415 | 3,487 | 3,615 | 3,760 | 3,920 | 4,099 | 4,299 | 4,516 |
| Projected new teacher demand | 234 | 234 | 243 | 302 | 326 | 348 | 375 | 405 | 432 | 464 |
| Cost of teacher Salaries (Mills) | 1,010 | 1,171 | 1,361 | 1,539 | 1,843 | 2,034 | 2,243 | 2,458 | 2,693 | 2,951 |
| | | | | | | | | | | |
| Total teacher salary costs | 21,154 | 24,120 | 27,414 | 31,130 | 34,256 | 36,803 | 39,279 | 41,753 | 44,255 | 45,412 |
| | | | | | | | | | | |
| **Primary Classrooms** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** |
| New classrooms required (smoothed) | 1,124 | 1,124 | 1,124 | 1,124 | 1,124 | 1,124 | 1,124 | 658 | 658 | 658 |
| Cost of Classroom Construction | 6,978,535 | 7,257,677 | 7,547,984 | 7,849,903 | 8,163,899 | 8,490,455 | 8,830,073 | 9,183,276 | 9,550,607 | 9,932,631 |
| Classrooms needing rehabiltation | 688 | 688 | 688 | 688 | 688 | 752 | 752 | 752 | 752 | 752 |
| Cost of Classroom Rehabilitation | 2,454,816 | 2,553,008 | 2,655,129 | 2,761,334 | 2,871,787 | 2,986,659 | 3,106,125 | 3,230,370 | 3,359,585 | 3,493,968 |
| Total cost (Millions) | 9,536 | 9,918 | 10,315 | 10,727 | 11,156 | 11,794 | 12,265 | 8,476 | 8,815 | 9,168 |
| | | | | | | | | | | |
| **Tronc Commun Classrooms (Public only)** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** |
| New classrooms required (smoothed) | 653 | 653 | 653 | 653 | 653 | 770 | 770 | 770 | 770 | 770 |
| Cost of Classroom Construction | 8,604,534 | 8,948,715 | 9,306,664 | 9,678,930 | 10,066,088 | 10,468,731 | 10,887,480 | 11,322,979 | 11,775,899 | 12,246,935 |
| Classrooms needing rehabiltation | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 193 |
| Cost of Classroom Rehabilitation | 2,454,816 | 2,553,008 | 2,655,129 | 2,761,334 | 2,871,787 | 2,986,659 | 3,106,125 | 3,230,370 | 3,359,585 | 3,493,968 |
| Total cost (Millions) | 5,866 | 6,101 | 6,345 | 6,598 | 6,862 | 8,370 | 8,704 | 9,052 | 9,415 | 10,110 |
| | | | | | | | | | | |
| **Upper Secondary Classrooms (Public only)** | | | | | | | | | | |
| New classrooms required (smoothed) | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 201 |
| Cost of Classroom Construction | 8,604,534 | 8,948,715 | 9,306,664 | 9,678,930 | 10,066,088 | 10,468,731 | 10,887,480 | 11,322,979 | 11,775,899 | 12,246,935 |
| Classrooms needing rehabiltation | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 44 |
| Cost of Classroom Rehabilitation | 2,454,816 | 2,553,008 | 2,655,129 | 2,761,334 | 2,871,787 | 2,986,659 | 3,106,125 | 3,230,370 | 3,359,585 | 3,493,968 |
| Total cost (Millions) | 816 | 848 | 882 | 918 | 954 | 993 | 1,032 | 1,074 | 1,117 | 2,613 |
| | | | | | | | | | | |
| **Total Classroom Costs (Millions)** | **16,218** | **16,867** | **17,542** | **18,243** | **18,973** | **21,156** | **22,002** | **18,602** | **19,346** | **21,891** |

[1] These figures (and those on the following pages) are taken from the Nine Year Basic Education Policy and Strategy Document February 2006

# Capitation grant costing

**Capitation Grant Projections**

| **Primary School Students** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** |
|---|---|---|---|---|---|---|---|---|---|---|
| Projected Total Enrollment | 1941738 | 2000921 | 2051151 | 2096183 | 2076706 | 2020284 | 1952781 | 1885719 | 1824442 | 1791163 |
| Capitation Grant | 2,500 | 3,225 | 4,122 | 5,232 | 6,525 | 7,031 | 7,578 | 8,170 | 8,812 | 9,019 |
| **Total Cost of Capitation Grant (Mills)** | 4,854 | 6,454 | 8,456 | 10,968 | 13,549 | 14,204 | 14,797 | 15,406 | 16,077 | 16,154 |

| **Tronc Commun Students** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** |
|---|---|---|---|---|---|---|---|---|---|---|
| Projected Total Students | 170,028 | 187,142 | 209,385 | 240,103 | 278,107 | 321,120 | 364,696 | 405,759 | 441,288 | 471,785 |
| % Private | 38% | 36% | 34% | 31% | 28% | 25% | 23% | 21% | 21% | 20% |
| % Public | 62% | 64% | 66% | 69% | 72% | 75% | 77% | 79% | 79% | 80% |
| Number of Private Students | 64,581 | 67,758 | 70,672 | 73,722 | 76,838 | 80,068 | 83,488 | 87,152 | 91,082 | 95,209 |
| Number of Public Students | 105,447 | 119,384 | 138,713 | 166,381 | 201,269 | 241,052 | 281,209 | 318,607 | 350,206 | 376,576 |
| % Public Boarding | 41% | 35% | 30% | 25% | 21% | 17% | 14% | 12% | 10% | 8% |
| Number of Public Boarding | 43,541 | 41,703 | 40,992 | 41,595 | 41,892 | 41,771 | 40,570 | 38,269 | 35,021 | 31,352 |
| Number of Public Non-Boarding | 61,906 | 77,681 | 97,721 | 124,786 | 159,378 | 199,281 | 240,639 | 280,338 | 315,185 | 345,224 |
| % Private Boarding | 41% | 35% | 30% | 25% | 21% | 17% | 14% | 12% | 10% | 8% |
| Number of Private Boarding | 26,667 | 23,669 | 20,885 | 18,431 | 15,993 | 13,875 | 12,045 | 10,468 | 9,108 | 7,927 |
| Number of Private Non-Boarding | 37,915 | 44,089 | 49,788 | 55,292 | 60,845 | 66,193 | 71,443 | 76,684 | 81,974 | 87,282 |
| | | | | | | | | | | |
| Boarding Capitation Grant | 21,000 | 21,391 | 21,676 | 21,823 | 21,530 | 22,729 | 23,899 | 25,044 | 26,165 | 27,262 |
| Non-Boarding Capitation Grant | 11,000 | 11,205 | 11,354 | 11,431 | 11,277 | 11,905 | 12,518 | 13,118 | 13,705 | 14,280 |
| Avg Capitation Grant | 15,129 | 14,763 | 14,404 | 14,029 | 13,411 | 13,781 | 14,160 | 14,550 | 14,951 | 15,361 |
| | | | | | | | | | | |
| Cost for Public Only (Mills) | 1,595 | 1,762 | 1,998 | 2,334 | 2,699 | 3,322 | 3,982 | 4,636 | 5,236 | 5,784 |
| Cost for Private only (Mills) | 977 | 1,000 | 1,018 | 1,034 | 1,031 | 1,103 | 1,182 | 1,268 | 1,362 | 1,462 |
| **Cost for Public and Private** | **2,572** | **2,763** | **3,016** | **3,368** | **3,730** | **4,425** | **5,164** | **5,904** | **6,598** | **7,247** |

## 3. 0 OBJECTIVE OF THE PAPER

It is very clear that implementation of the Nine Years Basic Education policy will be very costly and will take several years to implement it fully if we follow the conventional methods outlined in the previous section.

The objective of this paper is to show how using unconventional methods can help to quickly implement this policy. The methods being discussed in this paper are the following:

1. Reduction of courses
2. Specialization
3. Double shifting

Kicukiro Primary School is used as a case study to play out all three policies in primary 1 – 6. This paper also provides an overview of the cost savings of the three strategies on the current Nine Years Basic Education policy implementation.

The three strategies of core course reduction, specialization and double shifting are central to the rapid implementation of Nine Years Basic Education and are core course reduction, teacher specialization and double shifting. In order to create maximum impact the strategies must be combined. Double shifting is inextricably linked to core course reduction and teacher specialization but for the purposes of the following three sections, each strategy will be treated separately in terms of risks, benefits and gains. Implications on other Nine Years Basic Education policies such as drop out rates, teacher pupil ratio and class size will be discussed.

## 4.0 CORE COURSE REDUCTION

The reduction of core courses is identified as an important strategy. Currently, in the primary curriculum students study 9 subjects in primary 1 to 3 and 11 subjects in primary 4 to 6. In the proposed changes, the number of subjects will be reduced from 9 subjects in primary 1 to 3 to 6 subjects. In primary 4 to 6, the number of subjects will be reduced from 11 to 6.

The tables below shows the current curriculum in primary 1 - 6

| Current Subjects in Primary 1 - 3 | Number of hours | | |
|---|---|---|---|
| | $P_1$ | $P_2$ | $P_3$ |
| Core subjects (all compulsory and examinable) | | | |
| Kinyarwanda | 7 | 7 | 7 |
| English | 5 | 5 | 5 |
| French | 5 | 5 | 5 |
| Maths | 5 | 5 | 5 |
| Moral Education | 1 | 1 | 1 |
| Science and Technology | 5 | 5 | 5 |
| Religious Studies | 1 | 1 | 1 |
| Civic Education | 1 | 1 | 1 |
| Art | 1 | 1 | 1 |
| **TOTAL** | **27** | **27** | **27** |

| Current Subjects in Primary 4 - 6 | Number of hours | | |
|---|---|---|---|
| | $P_4$ | $P_5$ | $P_6$ |
| Core subjects (all compulsory and examinable) | | | |
| Kinyarwanda | 3 | 3 | 3 |
| English | 5 | 5 | 5 |
| French | 5 | 5 | 5 |
| Maths | 5 | 5 | 5 |
| Political Education | 1 | 1 | 1 |
| Science and Technology | 5 | 5 | 5 |
| Religious Studies | 1 | 1 | 1 |
| Civic Education | 2 | 2 | 2 |
| Art | 1 | 1 | 1 |
| History | 1 | 1 | 1 |
| Geography | 1 | 1 | 1 |
| **TOTAL** | **31** | **31** | **31** |

The next two tables show the proposed changes to the primary 1 – 6 curriculum.

| **Changes to Curriculum Subjects in Primary 1 – 3** | **Number of hours** | | |
|---|---|---|---|
| | **$P_1$** | **$P_2$** | **$P_3$** |
| **Core subjects (all compulsory and examinable)** | | | |
| Kinyarwanda | 3 | 3 | 3 |
| English | 6 | 6 | 6 |
| French | 3 | 3 | 3 |
| Maths | 5 | 5 | 5 |
| General Paper | 2 | 2 | 2 |
| **Extra curriculum activities – compulsory** | | | |
| *Sport, culture activities, Clubs, spiritual activities, study*, music, drama, dance, etc… | 2 | 2 | 2 |
| **TOTAL** | **21** | **21** | **21** |

| **Changes to Curriculum Subjects in Primary 4 – 6** | **Number of hours** | | |
|---|---|---|---|
| | **$P_4$** | **$P_5$** | **$P_6$** |
| **Core subjects (all compulsory and examinable)** | | | |
| Kinyarwanda | 3 | 3 | 3 |
| English | 5 | 5 | 5 |
| French | 2 | 2 | 2 |
| Maths | 5 | 5 | 5 |
| Sciences and Technology | 4 | 4 | 4 |
| Social Studies | 3 | 3 | 3 |
| **Extra curricular activities – compulsory** | | | |
| *Sport, culture activities, Clubs, spiritual activities, study, music, drama, dance, etc…* | 2 | 2 | 2 |
| **TOTAL** | **24** | **24** | **24** |

## 4.1 PROPOSAL OF SUBJECT CHANGES IN PRIMARY AND SECONDARY SCHOOL

**NB:**

In this proposal, English language shall be a medium of instruction. English shall be taught as a second language while French is taught as an optional language at all levels except in lower Primary (P.1, P.2 and P.3) where the medium of instruction shall be Kinyarwanda.

## New subject combination proposal and weekly time allocation for Primary level

| New Subjects for Primary | Number of Hours | | | | | |
|---|---|---|---|---|---|---|
| | $P_1$ | $P_2$ | $P_3$ | $P_4$ | $P_5$ | $P_6$ |
| **Core subjects (all compulsory and examinable)** | | | | | | |
| Kinyarwanda | 3 | 3 | 3 | 3 | 3 | 3 |
| English | 6 | 6 | 6 | 5 | 5 | 5 |
| French | 3 | 3 | 3 | 2 | 2 | 2 |
| Maths | 5 | 5 | 5 | 5 | 5 | 5 |
| Sciences and Technology | | | | 5 | 5 | 5 |
| Social Studies | | | | 3 | 3 | 3 |
| General Paper | 2 | 2 | 2 | | | |
| **Extra curricular activities – compulsory** | | | | | | |
| Sport, culture activities, Clubs, spiritual activities, study, music, drama, dance, etc… | 2 | 2 | 2 | 2 | 2 | 2 |
| **TOTAL** | **21** | **21** | **21** | **24** | **24** | **24** |

## New subject combination proposal and weekly time allocation for Ordinary /TC Level

| Subjects for Ordinary/TC Level | Number of Hours | | |
|---|---|---|---|
| | S1 | S2 | S3 |
| English | 5 | 5 | 5 |
| Kinyarwanda | 4 | 4 | 4 |
| Math | 6 | 6 | 6 |
| Science<br>Physics, Chem, Bio | 9 | 9 | 9 |
| Comp Science | 2 | 2 | 2 |
| History | 2 | 2 | 2 |
| Geography | 2 | 2 | 2 |
| Entrepreneurship | 2 | 2 | 2 |
| **Compulsory *non examinable*** | | | |
| Political Science | 1 | 1 | 1 |
| French | 2 | 2 | 2 |
| **SUB TOTAL** | 34 | 34 | 34 |
| **Electives *non examinable***<br>Schools can choose 1 | | | |
| Creative performance (music, drama and fine arts) | 1 | 1 | 1 |
| Swahili | 1 | 1 | 1 |
| Agriculture | 1 | 1 | 1 |
| **Extra Curricular** | | | |
| Students can choose 1 hour of one of the below activities:<br>Sport, cultural activities, clubs, spiritual activities | 1 | 1 | 1 |
| **TOTAL** | **36** | **36** | **36** |

## New subject combination proposal and weekly time allocation for Science Section 'A' level

### 1. Mathematics-Physics-Computer science option (PCM)

| Subject | Number of Hours | | |
|---|---|---|---|
| | S4 | S5 | S6 |
| **Core subjects (all compulsory and examinable)** | | | |
| Mathematics | 9 | 9 | 9 |
| Physics | 9 | 9 | 9 |
| Computer science | 8 | 8 | 8 |
| General paper | 2 | 2 | 2 |
| SUB-TOTAL | 28 | 28 | 28 |
| **Elective skills subjects (school may choose one or two examinable subjects below but students must choose one not both subjects)** | | | |
| Technical drawing | 2 | 2 | 2 |
| Chemistry | 2 | 2 | 2 |
| French | 2 | 2 | 2 |
| Entrepreneurship | 2 | 2 | 2 |
| **Extra curricular activities:** | | | |
| *Sport, culture activities, Clubs, spiritual activities, study, research in library…* | 2 | 2 | 2 |
| **TOTAL** | **32** | **32** | **32** |

### 2. Biology-Chemistry-Mathematics option (BCM)

| Subject | Number of Hours | | |
|---|---|---|---|
| | S4 | S5 | S6 |
| **Core subjects (all compulsory and examinable)** | | | |
| Biology | 9 | 9 | 9 |
| Chemistry | 9 | 9 | 9 |
| Mathematics | 8 | 8 | 8 |
| General paper | 2 | 2 | 2 |
| SUB-TOTAL | 28 | 28 | 28 |
| **Elective skills subjects (school may choose one or two examinable subjects below but students must choose one not both subjects)** | | | |
| Agriculture | 2 | 2 | 2 |
| Fine arts | 2 | 2 | 2 |
| Physics | 2 | 2 | 2 |
| French | 2 | 2 | 2 |

| | | | |
|---|---|---|---|
| Entrepreneurship | 2 | 2 | 2 |
| Computer science | 2 | 2 | 2 |
| Extra curricular activities | | | |
| *Sport, culture activities, Clubs, spiritual activities, study, research in library…* | 2 | 2 | 2 |
| **TOTAL** | **32** | **32** | **32** |

4. Mathematics-Physics-Geography option (MPG)

| Subjects | Number of Hours | | |
|---|---|---|---|
| | **S4** | **S5** | **S6** |
| **Core subjects (all compulsory and examinable)** | | | |
| Mathematics | 9 | 9 | 9 |
| Physics | 9 | 9 | 9 |
| Geography | 8 | 8 | 8 |
| General paper | 2 | 2 | 2 |
| SUB-TOTAL | 28 | 28 | 28 |
| **Elective skills subjects (school may choose one or two examinable subjects below but students must choose one not both subjects)** | | | |
| Technical drawing | 2 | 2 | 2 |
| Accounting | 2 | 2 | 2 |
| Fine arts | 2 | 2 | 2 |
| French | 2 | 2 | 2 |
| Entrepreneurship | 2 | 2 | 2 |
| Computer science | 2 | 2 | 2 |
| **Extra curricular activities** | | | |
| *Sport, culture activities, Clubs, spiritual activities, study, research in library…* | 2 | 2 | 2 |
| **TOTAL** | **32** | **32** | **32** |

5. Mathematics-Physics-Chemistry option (MPC)

| Subjects | Number of Hours | | |
|---|---|---|---|
| | **S4** | **S5** | **S6** |
| **Core subjects (all compulsory and examinable)** | | | |
| Mathematics | 9 | 9 | 9 |
| Physics | 9 | 9 | 9 |
| Chemistry | 8 | 8 | 8 |
| General paper | 2 | 2 | 2 |
| **SUB-TOTAL** | **28** | **28** | **28** |

| | | | |
|---|---|---|---|
| **Elective skills subjects**<br>**(school may choose one or two examinable subjects below but students must choose one not both subjects)** | | | |
| Technical drawing | 2 | 2 | 2 |
| Biology | 2 | 2 | 2 |
| French | 2 | 2 | 2 |
| Entrepreneurship | 2 | 2 | 2 |
| Computer science | 2 | 2 | 2 |
| **Extra curricular activities** | | | |
| *Sport, culture activities, Clubs, spiritual activities, study, research in library…* | 2 | 2 | 2 |
| **TOTAL** | **32** | **32** | **32** |

6. Computer Science-Economics-Mathematics option (CEM)

| Subject | Number of Hours | | |
|---|---|---|---|
| | S4 | S5 | S6 |
| **Core subjects (all compulsory and examinable)** | | | |
| Mathematics | 9 | 9 | 9 |
| Physics | 9 | 9 | 9 |
| Economics | 8 | 8 | 8 |
| General paper | 2 | 2 | 2 |
| **SUB-TOTAL** | **28** | **28** | **28** |
| **Elective skills subjects**<br>**(school may choose one or two examinable subjects below but students must choose one not both subjects)** | | | |
| Technical drawing | 2 | 2 | 2 |
| French | 2 | 2 | 2 |
| Entrepreneurship | 2 | 2 | 2 |
| Computer science | 2 | 2 | 2 |
| **Extra curricular activities** | | | |
| *Sport, culture activities, Clubs, spiritual activities, study, research in library…* | 2 | 2 | 2 |
| **TOTAL** | **32** | **32** | **32** |

## New subject combination proposal and weekly time allocation for Humanities Section 'A' level

### 7. Mathematics-Economics-Geography combination (MEG)

| Subject | Number of Hours | | |
|---|---|---|---|
| | S4 | S5 | S6 |
| **Core subjects (all compulsory and examinable)** | | | |
| Mathematics | 9 | 9 | 9 |
| Economics | 9 | 9 | 9 |
| Geography | 8 | 8 | 8 |
| General paper | 2 | 2 | 2 |
| **SUB-TOTAL** | **28** | **28** | **28** |
| **Elective skills subjects (School may choose one or two examinable subjects below but students must choose one not both subjects)** | | | |
| Computer science | 2 | 2 | 2 |
| Accounting | 2 | 2 | 2 |
| Fine arts | 2 | 2 | 2 |
| Entrepreneurship | 2 | 2 | 2 |
| **Extra curricular activities** | | | |
| *Sport, culture activities, Clubs, spiritual activities, study, research in library …* | 2 | 2 | 2 |
| **TOTAL** | **32** | **32** | **32** |

### 8. History-Economics-Geography combination (HEG)

| Subject | Number of Hours | | |
|---|---|---|---|
| | S4 | S5 | S6 |
| **Core subjects (all compulsory and examinable)** | | | |
| Geography | 9 | 9 | 9 |
| History | 9 | 9 | 9 |
| Economics | 8 | 8 | 8 |
| General paper | 2 | 2 | 2 |
| **SUB-TOTAL** | **28** | **28** | **28** |
| **Elective skills subjects (school may choose one or two examinable subjects below but students must choose one not both subjects)** | | | |
| Computer science | 2 | 2 | 2 |
| Accounting | 2 | 2 | 2 |
| Fine arts | 2 | 2 | 2 |
| Entrepreneurship | 2 | 2 | 2 |

| | | | |
|---|---|---|---|
| **Extra curricular activities:** | | | |
| *Sport, culture activities, Clubs, spiritual activities, study, research in librar,…* | 2 | 2 | 2 |
| **TOTAL** | **32** | **32** | **32** |

9. History-Economics-Literature combination (HEL)

| Subject | Number of Hours | | |
|---|---|---|---|
| | **S4** | **S5** | **S6** |
| **Core subjects (all compulsory and examinable)** | | | |
| History | 9 | 9 | 9 |
| Economics | 9 | 9 | 9 |
| Literature | 8 | 8 | 8 |
| General paper | 2 | 2 | 2 |
| **SUB-TOTAL** | **28** | **28** | **28** |
| **Elective skills subjects (school may choose one or two examinable subjects below but students must choose one not both subjects)** | | | |
| Computer science | 2 | 2 | 2 |
| Entrepreneurship | 2 | 2 | 2 |
| Drama | 2 | 2 | 2 |
| French | 2 | 2 | 2 |
| **Extra curricular activities** | | | |
| *Sport, culture activities, Clubs, spiritual activities, study, research in library…* | 2 | 2 | 2 |
| **TOTAL** | **32** | **32** | **32** |

10. Literature-Economics-Geography combination (LEG)

| Subject | Number of Hours | | |
|---|---|---|---|
| | **S4** | **S5** | **S6** |
| **Core subjects (all compulsory and examinable)** | | | |
| Literature | 9 | 9 | 9 |
| Economics | 9 | 9 | 9 |
| Geography | 8 | 8 | 8 |
| General paper | 2 | 2 | 2 |
| **SUB-TOTAL** | **28** | **28** | **28** |
| **Elective skills subjects (school may choose one or two examinable subjects below but students must choose one not both subjects)** | | | |
| Computer science | 2 | 2 | 2 |

| | | | |
|---|---|---|---|
| Entrepreneurship | 2 | 2 | 2 |
| Drama | 2 | 2 | 2 |
| French | 2 | 2 | 2 |
| **Extra curricular activities** | | | |
| *Sport, culture activities, Clubs, spiritual activities, study, research in library…* | 2 | 2 | 2 |
| **TOTAL** | **32** | **32** | **32** |

### 10. History-Geography –Literature combination (HGL)

| Subject | Number of Hours | | |
|---|---|---|---|
| | **S4** | **S5** | **S6** |
| **Core subjects (all compulsory and examinable)** | | | |
| Literature | 9 | 9 | 9 |
| History | 9 | 9 | 9 |
| Geography | 8 | 8 | 8 |
| General paper | 2 | 2 | 2 |
| **SUB-TOTAL** | **28** | **28** | **28** |
| **Elective skills subjects**<br>**(school may choose one or two examinable subjects below but students must choose one not both subjects)** | | | |
| Computer science | 2 | 2 | 2 |
| French | 2 | 2 | 2 |
| Drama | 2 | 2 | 2 |
| Entrepreneurship | 2 | 2 | 2 |
| **Extra curricular activities** | | | |
| *Sport, culture activities, Clubs, spiritual activities, study, research in library…* | 2 | 2 | 2 |
| **TOTAL** | **32** | **32** | **32** |

## New subject combination proposal and weekly time allocation for Languages Section 'A' level

### Combination 1 - Languages

| Subject | Number of Hours | | |
|---|---|---|---|
| | S4 | S5 | S6 |
| **Core subjects (all compulsory and examinable)** | | | |
| English | 9 | 9 | 9 |
| French | 9 | 9 | 9 |
| Kinyarwanda | 8 | 8 | 8 |
| General paper | 2 | 2 | 2 |
| **SUB-TOTAL** | **28** | **28** | **28** |
| **Elective subjects (School may choose one or two examinable subjects below but students must choose one not both subjects)** | | | |
| Computer Sciences | 2 | 2 | 2 |
| Secretarial studies | 2 | 2 | 2 |
| Entrepreneurship | 2 | 2 | 2 |
| Drama | 2 | 2 | 2 |
| Swahili | 2 | 2 | 2 |
| **Extra curricular activities** | | | |
| *Music, Sport, culture activities, Clubs, spiritual activities, study, research in library,…* | 2 | 2 | 2 |
| **TOTAL** | **32** | **32** | **32** |

### Combination 2 – Languages

| Subject | Number of Hours | | |
|---|---|---|---|
| | S4 | S5 | S6 |
| **Core subjects (all compulsory and examinable)** | | | |
| English | 9 | 9 | 9 |
| Kiswahili | 9 | 9 | 9 |
| Kinyarwanda | 8 | 8 | 8 |
| General paper | 2 | 2 | 2 |
| **SUB-TOTAL** | **28** | **28** | **28** |
| **Elective subjects (School may choose one or two examinable subjects below but students must choose one not both subjects)** | | | |
| Computer Sciences | 2 | 2 | 2 |
| Secretarial studies | 2 | 2 | 2 |

| | | | |
|---|---|---|---|
| Entrepreneurship | 2 | 2 | 2 |
| Drama | 2 | 2 | 2 |
| French | 2 | 2 | 2 |
| **Extra curricular activities** | | | |
| *Music, Sport, culture activities, Clubs, spiritual activities, study, and research in library…* | 2 | 2 | 2 |
| **TOTAL** | **32** | **32** | **32** |

## New subject combination proposal and weekly time allocation for Teacher Training Colleges (Primary level)

### A. Science and Mathematics Option

| Subject | Number of Hours | | |
|---|---|---|---|
| | **S4** | **S5** | **S6** |
| **Core subjects (all compulsory and examinable)** | | | |
| Foundations of Education (Psychology, Philosophy and Sociology) | 9 | 9 | 9 |
| Subjects Content and their Teaching Methods: | | | |
| - Math | 4 | 4 | 4 |
| - Integrated Science | 6 | 6 | 6 |
| - English | 3 | 3 | 3 |
| - Creative performance and physical education | 2 | 2 | 2 |
| - Teaching practice | 4 | 4 | 6 |
| **SUB-TOTAL** | **28** | **28** | **30** |
| **Elective skills subjects (school may choose one or two examinable subjects below but students must choose one not both subjects)** | | | |
| Swahili | 2 | 2 | 2 |
| Creative performance and Physical education) | 2 | 2 | 2 |
| Computer science | 2 | 2 | 2 |
| Agriculture | 2 | 2 | 2 |
| **Extra curricular activities** | | | |
| *Sport, culture activities, Clubs, spiritual activities, study and research in library…* | 2 | 2 | 2 |
| **TOTAL** | **32** | **32** | **34** |

B. Social Studies Option

| Subject | Number of Hours | | |
|---|---|---|---|
| | S4 | S5 | S6 |
| **Core subjects (all compulsory and examinable)** | | | |
| Foundations of Education (Psychology, Philosophy and Sociology) | 9 | 9 | 9 |
| **Subjects Content and their Teaching Methods:** | | | |
| - Social Studies | 4 | 4 | 4 |
| - English | 3 | 3 | 3 |
| - Creative performance and physical education | 2 | 2 | 2 |
| - Teaching practice | 4 | 4 | 6 |
| **SUB-TOTAL** | **22** | **22** | **24** |
| **Elective skills subjects (school may choose one or two examinable subjects below but students must choose one not both subjects)** | | | |
| Swahili | 2 | 2 | 2 |
| Creative performance and Physical education) | 2 | 2 | 2 |
| Computer science | 2 | 2 | 2 |
| Agriculture | 2 | 2 | 2 |
| **Extra curricular activities** | | | |
| *Sport, culture activities, Clubs, spiritual activities, study, research in library…* | 2 | 2 | 2 |
| **TOTAL** | **26** | **26** | **28** |

C. Languages Option

| Subject | Number of Hours | | |
|---|---|---|---|
| | S4 | S5 | S6 |
| **Core subjects (all compulsory and examinable)** | | | |
| Foundations of Education (Psychology, Philosophy and Sociology) | 9 | 9 | 9 |
| **Subjects Content and their Teaching Methods:** | | | |
| - English | 4 | 4 | 4 |
| - French | 4 | 4 | 4 |
| - Kinyarwanda | 4 | 4 | 4 |
| - Creative performance and physical education | 2 | 2 | 2 |
| - Teaching practice | 4 | 4 | 6 |
| **SUB-TOTAL** | **25** | **25** | **27** |
| **Elective skills subjects (school may choose one or two examinable subjects below but students must** | | | |

| | | | |
|---|---|---|---|
| **choose one not both subjects)** | | | |
| Swahili | 2 | 2 | 2 |
| Creative performance and Physical education) | 2 | 2 | 2 |
| Computer science | 2 | 2 | 2 |
| Agriculture | 2 | 2 | 2 |
| Extra curricular activities | | | |
| *Sport, culture activities, Clubs, spiritual activities, study, research in library…* | 2 | 2 | 2 |
| **TOTAL** | **29** | **29** | **31** |

## The benefits of reducing core courses

It will increase the current low number of contact hours per subject and the low course content as shown in the table below.

| **Primary** | **Average number of hours taught per subject (previous system)** | **Average number of hours taught per subject (proposed system)** | **Increase in average number of hours taught per subject** |
|---|---|---|---|
| 1-3 | 3 | 4.2 | 1.2 |
| 4-6 | 2.8 | 4 | 1.2 |

Clearly with the reduction of core courses, the average number of hours taught per subject increases across primary school in both first and second cycle.

1) The possible benefits of course reduction are increased number of total hours per subject which will allow more in depth coverage of syllabus.

2) Reducing the number of core courses can increase quality by giving students fewer subjects to learn and master.

3) When combined with double shifting the number of students being taught simultaneously will decrease by half, this will affect the class size and will improve the quality of students' learning by providing a better environment for teachers to focus their attention on individual students and to monitor individual performance.

4) Quality of teaching will improve as teachers' work load (especially when combined with specialization of teachers) across many subjects is reduced and teachers are able to concentrate on a smaller number of subjects.

5) It is expected that improved delivery of subjects will contribute to a reduction of the number of drop outs and repetition.

## 5.0 SPECIALIZATION OF TEACHERS

Teacher specialization allows teachers to focus exclusively on two subjects. Teachers will be responsible for teaching two subjects across a primary school; from primary 1 to primary 6. This system is similar to the system currently employed in secondary schools. The subjects which teachers will be required to teach, with the proposed reduction of core courses, can be organized into three clusters; languages, Maths/ Science and Social Studies. The subject clusters are outlined below:

| CLUSTER | SUBJECTS | SPECIALIZATION |
|---|---|---|
| Languages | Kinyarwanda<br>English<br>French | Kinyarwanda/ English<br>Kinyarwanda/ French<br>English/ French |
| Maths and Science | Maths<br>Science | Maths/ Science |
| Social Studies | History<br>Geography<br>Civic Education<br>Religion<br>Economics | All subjects |

Specialization will have implications on how teacher training is conducted. Teacher training will move from subject related training to cluster training.

Languages will be treated as one cluster; English, French, Kinyarwanda. Maths and Science will be treated as another cluster. The other cluster will be Social Studies; History, Geography, Civic Education, Religion and Economics.

**Benefits of teacher specialization**

1) Improvement in the quality of teaching because teachers will focus on two subjects;
2) Increase in teachers' subject knowledge and confidence in their ability to teach a subject well.
3) Furthermore, teachers can choose to specialize in subjects in which they excel and are interested in. This will have positive repercussions on students' learning.
4) The gains of teacher specialization are that teacher requirements for individual schools will decrease when this is combined with double

shifting, therefore saving costs on teacher recruitment and the recurring costs of teacher salaries.

5) There should also be improved curriculum delivery as teachers become experts in their field.

6) In addition to the reduction of core courses and double shifting, teacher specialization will increase the number of contact hours for students in each subject, this will have a positive effect on students' learning as there will be more time to deliver a busy curriculum.

## 6.0 DOUBLE SHIFTING

Double shifting is the division of the teaching day into two shifts; morning and afternoon. Different groups of students attend the morning and afternoon sessions. Both sessions are taught by the same teachers. Currently, double shifting is applied from primary 1 to 3. In the proposed system, double shifting will be applied throughout primary school from primary 1 to primary 6. Traditional models of double shifting require extra numbers of teachers. However, since the proposed system combines double shifting with core course reduction and teacher specialization it is not necessary to double the numbers of teachers needed.
Furthermore, this new system of double shifting will only require one head teacher per school.

There are many benefits to adopting a system of double shifting.

1) Obvious gains are economic gains such as more efficient use of scarce teachers
2) Savings in teacher salaries
3) Savings in classroom construction.
4) Double shifting reduces class size
5) Double shifting reduces pupil teacher ratio.
6) Double shifting increases the total number of hours per subject in conjunction with the reduction of core courses, this will allow more in depth coverage of the syllabus.
7) If double shifting is applied with teacher specialization this will improve the quality of teaching because teachers will focus on two subjects; increasing their own subject knowledge and confidence in their ability to deliver a subject well. This will have a positive impact on students' learning.
8) Furthermore, as a system it may be used to reduce the number of streams per year by grouping them into manageable numbers (in the case of larger primary schools), and to compensate for an inadequate number of teachers and an inadequate number of classrooms.

## 7.0 CASE STUDY OF KICUKIRO PRIMARY SCHOOL

Kicukiro Primary School is located in Kicukiro District in Kigali. The school has a total of 2964 students, 68 teachers and 60 classrooms. There are 12 streams in every year group for example primary 1 A-L, except primary 6 where there are 8 streams. There are 10 teachers in every year group.

For the purposes of this document, this case study will be used to show how double shifting works effectively in primary 1-6 in Kicukiro school . Secondly, this school will be used to show what happens if double shifting is combined with core course reduction and teacher specialization by showing the gains in classrooms and in teachers. The implications on the teacher pupil ratio will be explored.

Thirdly, this case study will look at how double shifting, core course reduction and teacher specialization plays itself out in the school timetable. The case study will show an example of the original school timetable for primary 6 and show how the three combined strategies will look in a practical sense in the timetables for primary 1 to 3 and primary 4 to 6 in order to prove that the application of such strategies is feasible and workable.

(i) Currently, Kicukiro school use double shifting from primary 1-6. This is an innovative practice because most primary schools abandon double shifting in upper primary (primary 4-6). However, Kicukiro school continue to double shift because of the benefits. The benefits of using such a system are that there is a reduction of 12 streams per year group to 6 streams in the morning and 6 streams in the afternoon.

(ii) However, if double shifting is combined with specialization and reduction of core courses and applied to the model of Kicukiro School, there is an additional range of positive gains.

- The pupil teacher ratio of 56: 1 decreases to 45: 1 in primary 1- 3 and decreases to 37:1 in primary 4-6.

- The number of required classrooms decreases from 60 to 38 with a gain of 22 classrooms as shown in the following table:

| Kicukiro School – Classroom Gains in Primary 1 to 6 | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **P1** | **P2** | **P3** | | **P4** | **P5** | **P6** |
| **No .of students** | 576 | 571 | 521 | | 506 | 507 | 400 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **No. of teachers** | 10 | 10 | 10 | **Number of Classrooms at 37:1** | 10 | 10 | 10 |
| **No. of classrooms** | 10 | 10 | 10 | | 10 | 10 | 10 |
| **No. of classrooms at 45: 1** | 6 | 6 | 6 | | 7 | 7 | 6 |
| **Gain in number of classrooms** | 4 | 4 | 4 | | 3 | 3 | 4 |

In the following section, the gains on teachers in primary 1-3 and in primary 4-6 will be shown. These figures are based on a combination of double shifting, core course reduction and teacher specialization and on a maximum of 30 contact hours per teacher per week.

Gains on teachers in Primary 1 to 6

| Gains on numbers of teachers in P1-P3 if core course reduction, specialization and double shifting is applied in Kicukiro Primary School | | | | | |
|---|---|---|---|---|---|
| Hours per day 2 streams | Hours per week 2 streams | Hours per week 12 streams | Total no. of teachers 20 contact hours | Total no. of teachers 25 contact hours | Total no. of teachers 30 contact hours |
| 7.5 (except Friday 7.0) | 37 | 222 | 11.1 | 8.8 | 7.4 |
| Average number of teachers | | | 1 | 9 | 7 |
| Gains from original numbers of teachers (10) | | | -1 | 1 | 3 |

| Gains on numbers of teachers in P4-P6 if core course reduction, specialization and double shifting is applied in Kicukiro Primary School | | | | | |
|---|---|---|---|---|---|
| Hours per day 2 streams | Hours per week 2 streams | Hours per week 12 streams | Total no. of teachers 20 contact hours | Total no. of teachers 25 contact hours | Total no. of teachers 30 contact hours |
| 7.5 (except Friday 7.0) | 37 | 222 | 13.20 | 10.56 | 8.8 |
| Average number of teachers | | | 13 | 11 | 9 |
| Gains from original numbers of teachers (10) | | | -3 | -1 | 1 |

Clearly, there are many gains within this system in that it provides enough classrooms to house all students, to provide extra teachers which may be used to teach Tronc Commun and to enable teachers to improve follow up of individual students. This reduces costs for teacher recruitment and classroom construction.

(iii) The next section examines the current timetable and the following pages revise the timetable to include a combination of core course reduction and teacher specialization (in addition to the current system of double shifting). The revised timetables show the proposed time and subject allocation in both lower (primary 1-3) and upper primary (primary 4-6).
The aim of this section is to show the practicality of using such a complex system and how it translates into the school timetable.

The first table presented is the current timetable of Kicukiro Primary School's primary 6 class as an example of the current working system of double shifting only.

| Present Timetable of Kicukiro School Primary 6 | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **Hour** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** |
| 7.45-8.30 | Maths | Maths | Maths | Maths | English |
| 8.30-9.15 | French | French | French | English | French |
| 9.15-9.45 | Kinyarwanda | Maths | Maths | Maths | Maths |
| | | | | | |
| 10.00-10.45 | English | Science and Technology | Kinyarwanda | French | Science and Technology |
| 10.45-11.30 | Science and Technology | Kinyarwanda | Science and Technology | Civic Education | French |
| 11.30-12.00 | Religion | French | Political Education | Religion | Political Education |
| **LUNCH TIME** | | | | | |
| 14.00-14.30 | Civic Education | Science and Technology | English | History | Science and Technology |
| 14.30-15.00 | English | French | Science and Technology | Kinyarwanda | Geography |
| **BREAK** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 15.15-15.45 | French | English | French | Geography | History |
| 15.45-16.15 | Art | Kinyarwanda | Homework Assignment | Art | Homework Assignment |
| 16.15-16.45 | Moral Education | Moral Education | Moral Education | Moral Education | Practical Work |

The following two tables illustrate how the new school timetable would look like when double shifting is combined with core course reduction and teacher specialization.

The first table shows the proposed time and subject allocation for primary 1 to 3 , ensuring that all students receive the allocated time for each subject.

| Kicukiro Time and Subject Allocation for P1 - P3 | | | | | | |
|---|---|---|---|---|---|---|
| MORING SESSION | **Time** | **Monday** | **Tuesday** | **Wednesday** | **Thurday** | **Friday** |
| | 7:15 - 7:45 | Maths | Maths | Maths | Maths | Maths |
| | 7:45 - 8:15 | English | English | English | English | English |
| | 8:15 – 9.00 | Kinyarwanda | Kinyarwanda | Kinyarwanda | Kinyarwanda | Kinyarwanda |
| | 9.00 - 9:30 | English | English | English | English | English |
| | **MORNING BREAK** | | | | | |
| | 10:00-10.30 | Maths | Maths | Maths | Maths | Maths |
| | 10:30-11.15 | French | French | French | French | French |
| | 11:15-11.45 | English | English | English | English | English |
| | 11.45- 12.15 | EPS | EPS | EPS | EPS | EPS |
| **LUNCH BREAK** | | | | | | |
| AFTERNOON SESSION | 12:45-13.15 | Maths | Maths | Maths | Maths | Maths |
| | 13:15-13.45 | English | English | English | English | English |
| | 13:45-14.30 | French | French | French | French | French |
| | 14:15-15.00 | Kinyarwanda | Kinyarwanda | Kinyarwanda | Kinyarwanda | Kinyarwanda |
| | **AFTERNOON BREAK** | | | | | |
| | 15:30-16.15 | English | English | English | English | English |
| | 16:15 -16:45 | General Paper | General Paper | General Paper | General Paper | General Paper |

The second table shows the new timetable for primary 4 to 6 incorporating double shifting, core course reduction and teacher specialization. The timetable shows the time and subject allocation for the proposed system in upper primary.

| Kicukiro Time and Subject Allocation for P4 – P6 | | | | | | |
|---|---|---|---|---|---|---|
| | **Time** | **Monday** | **Tuesday** | **Wednesday** | **Thurday** | **Friday** |
| MORLNG SESSION | 7:15- 8.00 | Maths | Maths | Maths | Maths | Maths |
| | 8.00- 8.45 | Maths | Maths | Maths | Maths | English |
| | 8.45- 9.30 | English | English | English | English | STE |
| | MORNING BREAK | | | | | |
| | 10:00 -10:45 | English | English | English | English | English |
| | 10:45 -11:15 | STE | STE | Social Studies | Social Studies | Social Studies |
| | 11:15 -11:45 | Kinyarwanda | Kinyarwanda | French | French | Practical work |
| | 11.45-12.15 | EPS | EPS | EPS | EPS | Practical Work |
| LUNCH BREAK | | | | | | |
| AFTERNOON SESSION | 12:45 -13:30 | Maths | Maths | STE | STE | Maths |
| | 13:30 14.15 | STE | STE | Kinyarwanda | Kinyarwanda | English |
| | 14:15-15.00 | Kinyarwanda | Kinyarwanda | Social Studies | Social Studies | STE |
| | MORNING BREAK | | | | | |
| | 15:30 – 16.15 | Social Studies | Social Studies | French | French | English |
| | 16;15 - 16:45 | English | English | French | French | Social Studies |

## 7.1 Extrapolation of the Case Study Figures to the Nation

The gains and losses in Table A and B are based on the application of double shifting from primary 1 to primary 6 in each district in each province. Table A details the gains on classrooms and Table B shows the gains on classrooms when double shifting is applied throughout the school.

### A. Gains on the classrooms

| District | Number of students | Number of teachers | Existing Teacher-Student Ratio | Number of Current Classrooms | Proposed Teacher-Students Ratio | Proposed Number of classrooms when double shifting is applied | Actual number of classrooms per shift | Gains/Losses |
|---|---|---|---|---|---|---|---|---|
| Karongi | 78847 | 1283 | 61 | 1411 | 40 | 1971 | 986 | 425 |
| Nyabihu | 86170 | 1384 | 62 | 1258 | 40 | 2154 | 1077 | 181 |
| Nyamasheke | 97682 | 1390 | 70 | 1033 | 40 | 2442 | 1221 | -188 |
| Ngororero | 79906 | 1216 | 66 | 1241 | 40 | 1998 | 999 | 242 |
| Rubavu | 74296 | 1050 | 71 | 934 | 40 | 1857 | 929 | 5 |
| Rutsiro | 74824 | 1086 | 69 | 909 | 40 | 1871 | 935 | -26 |
| Rusizi | 87779 | 1229 | 71 | 1319 | 40 | 2194 | 1097 | 222 |
| West | 579503 | 7409 | 78 | 8105 | | | | 861 |

| District | Number of students | Number of teachers | Existing Teacher-Student Ratio | Number of Current Classrooms | Proposed Teacher-Students Ratio | Proposed Number of classrooms when double shifting is applied | Actual number of classrooms per shift | Gains/Losses |
|---|---|---|---|---|---|---|---|---|
| Nyarugenge | 41831 | 815 | 51 | 717 | 40 | 1046 | 523 | 194 |
| Gasabo | 64703 | 1262 | 51 | 1113 | 40 | 1618 | 809 | 304 |
| Kicukiro | 39779 | 860 | 46 | 793 | 40 | 994 | 497 | 296 |
| Kigali City | 146313 | 2937 | 50 | 2623 | | | | 794 |

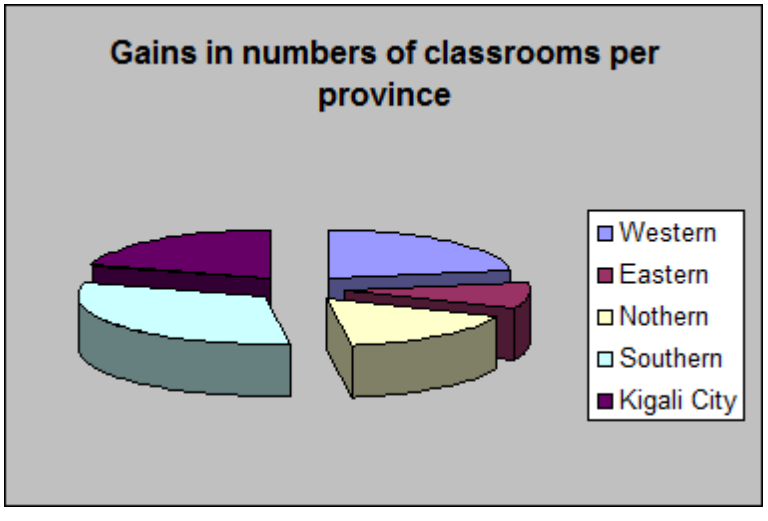
| District | Number of students | Number of teachers | Existing Teacher-Student Ratio | Number of Current Classrooms | Proposed Teacher-Students Ratio | Proposed Number of classrooms when double shifting is applied | Actual number of classrooms per shift | Gains/Losses |
|---|---|---|---|---|---|---|---|---|
| Bugesera | 69017 | 1066 | 65 | 992 | 40 | 1725 | 863 | 129 |
| Gatsibo | 81932 | 1079 | 76 | 1160 | 40 | 2048 | 1024 | 136 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Kayonza | 59170 | 820 | 72 | 816 | 40 | 1479 | 740 | 76 |
| Kirehe | 65203 | 815 | 80 | 825 | 40 | 1630 | 815 | 10 |
| Ngoma | 61745 | 889 | 69 | 903 | 40 | 1544 | 772 | 131 |
| Nyagatare | 82129 | 1114 | 74 | 898 | 40 | 2053 | 1027 | -129 |
| Rwamagana | 58799 | 815 | 72 | 735 | 40 | 1470 | 735 | 0 |
| East | 477995 | 6598 | 72 | 6329 | | | | 354 |

| District | Number of students | Number of teachers | Existing Teacher-Student Ratio | Number of Current Classrooms | Proposed Teacher-Students Ratio | Proposed Number of classrooms when double shifting is applied | Actual number of classrooms per shift | Gains/Losses |
|---|---|---|---|---|---|---|---|---|
| Burera | 88716 | 1170 | 76 | 1234 | 40 | 2218 | 1109 | 125 |
| Gicumbi | 94249 | 1332 | 71 | 1340 | 40 | 2356 | 1178 | 162 |
| Gakenke | 80528 | 1221 | 66 | 1167 | 40 | 2013 | 1007 | 160 |
| Musanze | 88184 | 1283 | 69 | 1066 | 40 | 2205 | 1102 | -36 |
| Rulindo | 65941 | 963 | 68 | 1043 | 40 | 1649 | 824 | 219 |
| North | 417618 | 5969 | 70 | 5850 | | | | 630 |

| District | Number of students | Number of teachers | Existing Teacher-Student Ratio | Number of Current Classrooms | Proposed Teacher-Students Ratio | Proposed Number of classrooms when double shifting is applied | Actual number of classrooms per shift | Gains/Losses |
|---|---|---|---|---|---|---|---|---|
| Muhanga | 68757 | 1198 | 57 | 1216 | 40 | 1719 | 859 | 357 |
| Huye | 61964 | 1038 | 60 | 1110 | 40 | 1549 | 775 | 335 |
| Kamonyi | 66963 | 1137 | 59 | 875 | 40 | 1674 | 837 | 38 |
| Ruhango | 63897 | 1013 | 63 | 851 | 40 | 1597 | 799 | 52 |
| Nyanza | 59388 | 862 | 69 | 838 | 40 | 1485 | 742 | 96 |
| Gisagara | 65023 | 812 | 80 | 863 | 40 | 1626 | 813 | 50 |
| Nyaruguru | 67878 | 845 | 80 | 832 | 40 | 1697 | 848 | -16 |
| Nyamagabe | 75130 | 1195 | 63 | 1245 | 40 | 1878 | 939 | 306 |
| South | 529000 | 8100 | 65 | 7830 | | | | 1218 |

| Province | Gains |
|---|---|
| Western | 861 |
| Eastern | 354 |
| Nothern | 630 |
| Southern | 1218 |



| | |
|---|---|
| Kigali City | 794 |
| TOTAL | 3857 |

## B. Gains on Teachers

| District | Number of students | Number of teachers | Existing Teacher-Student Ratio | Number of Current Classrooms | Proposed Teacher-Students Ratio | Number of teachers | Gains/Losses |
|---|---|---|---|---|---|---|---|
| Karongi | 78847 | 1283 | 61 | 1411 | 40 | 986 | 297 |
| Nyabihu | 86170 | 1384 | 62 | 1258 | 40 | 1077 | 307 |
| Nyamasheke | 97682 | 1390 | 70 | 1033 | 40 | 1221 | 169 |
| Ngororero | 79906 | 1216 | 66 | 1241 | 40 | 999 | 217 |
| Rubavu | 74296 | 1050 | 71 | 934 | 40 | 929 | 121 |
| Rutsiro | 74824 | 1086 | 69 | 909 | 40 | 935 | 151 |
| Rusizi | 87779 | 1229 | 71 | 1319 | 40 | 1097 | 132 |
| West | 579503 | 7409 | 78 | 8105 | | | 1394 |

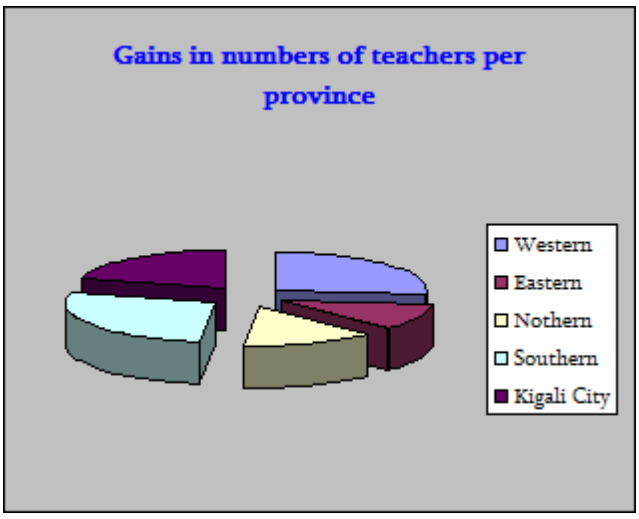
| District | Number of students | Number of teachers | Existing Teacher-Student Ratio | Number of Current Classrooms | Proposed Teacher-Students Ratio | Number of teachers | Gains/Losses |
|---|---|---|---|---|---|---|---|
| Nyarugenge | 41831 | 815 | 51 | 717 | 40 | 523 | 292 |
| Gasabo | 64703 | 1262 | 51 | 1113 | 40 | 809 | 453 |
| Kicukiro | 39779 | 860 | 46 | 793 | 40 | 497 | 363 |
| Kigali City | 146313 | 2937 | 50 | 2623 | | | 1108 |

| District | Number of students | Number of teachers | Existing Teacher-Student Ratio | Number of Current Classrooms | Proposed Teacher-Students Ratio | Number of teachers | Gains/Losses |
|---|---|---|---|---|---|---|---|
| Bugesera | 69017 | 1066 | 65 | 992 | 40 | 863 | 203 |
| Gatsibo | 81932 | 1079 | 76 | 1160 | 40 | 1024 | 55 |
| Kayonza | 59170 | 820 | 72 | 816 | 40 | 740 | 80 |
| Kirehe | 65203 | 815 | 80 | 825 | 40 | 815 | 0 |
| Ngoma | 61745 | 889 | 69 | 903 | 40 | 772 | 117 |
| Nyagatare | 82129 | 1114 | 74 | 898 | 40 | 1027 | 87 |
| Rwamagana | 58799 | 815 | 72 | 735 | 40 | 735 | 80 |
| East | 477995 | 6598 | 72 | 6329 | | | 623 |

| District | Number of students | Number of teachers | Existing Teacher-Student Ratio | Number of Current Classrooms | Proposed Teacher-Students Ratio | Number of teachers | Gains/Losses |
|---|---|---|---|---|---|---|---|
| Burera | 88716 | 1170 | 76 | 1234 | 40 | 1109 | 61 |
| Gicumbi | 94249 | 1332 | 71 | 1340 | 40 | 1178 | 154 |
| Gakenke | 80528 | 1221 | 66 | 1167 | 40 | 1007 | 214 |
| Musanze | 88184 | 1283 | 69 | 1066 | 40 | 1102 | 181 |
| Rulindo | 65941 | 963 | 68 | 1043 | 40 | 824 | 139 |
| North | 417618 | 5969 | 70 | 5850 | | | 749 |

| District | Number of students | Number of teachers | Existing Teacher-Student Ratio | Number of Current Classrooms | Proposed Teacher-Students Ratio | Number of teachers | Gains/Losses |
|---|---|---|---|---|---|---|---|
| Muhanga | 68757 | 1198 | 57 | 1216 | 40 | 859 | 339 |
| Huye | 61964 | 1038 | 60 | 1110 | 40 | 775 | 263 |
| Kamonyi | 66963 | 1137 | 59 | 875 | 40 | 837 | 300 |
| Ruhango | 63897 | 1013 | 63 | 851 | 40 | 799 | 214 |
| Nyanza | 59388 | 862 | 69 | 838 | 40 | 742 | 120 |
| Gisagara | 65023 | 812 | 80 | 863 | 40 | 813 | -1 |
| Nyaruguru | 67878 | 845 | 80 | 832 | 40 | 848 | -3 |
| Nyamagabe | 75130 | 1195 | 63 | 1245 | 40 | 939 | 256 |
| South | 529000 | 8100 | 65 | 7830 | | | 1488 |

| Province | Gains |
|---|---|
| Western | 1394 |
| Eastern | 623 |
| Northern | 749 |
| Southern | 1488 |
| Kigali City | 1108 |
| TOTAL | 5362 |



From the above statistics, the gains from the application of double shifting, teacher specialization and reduction of core courses are many.

1) Nationwide, there is a gain of 3,857 classrooms.
2) The student teacher ratio is reduced from 61:1 to 40:1.
3) All pupils will attend school for half a day, this will reduce overall drop out rates.
4) Teachers will teach fewer subjects per week, consequently reducing teacher workload and increasing preparation and marking time for the teacher.
5) Across the country, there is a gain of 5362 teachers.
6) This will free up teachers to teach in the Tronc Commun section without having to recruit extra teachers.

## 8.0 SAVINGS ON THE PILOT DISTRICTS

There are five pilot districts in each province which have already begun preparations for the implementation of Nine Year Basic Education; Musanze, Nyamagabe, Gasabo, Gatsibo and Karongi. The following table shows the results of the application of double shifting in primary 6 only in relation to the numbers of classrooms and teachers gained.

| District | Number of Students in P6 | Number of Classrooms needed | Numbers of Classrooms gained | Savings / Losses | Number of teachers needed | Number of teachers gained | Savings | Observation |
|---|---|---|---|---|---|---|---|---|
| Musanze | 5921 | 124 | -36 | -160 | 205 | 181 | -24 | Need to construct 160 classrooms and hire 24 teachers |
| Nyamagabe | 4700 | 117 | 306 | 189 | 175 | 256 | 81 | |
| Gasabo | 5118 | 103 | 304 | 201 | 170 | 453 | 283 | |
| Gatsibo | 4500 | 100 | 136 | 36 | 170 | 55 | -115 | Need to hire 115 teachers |
| Karongi | | | | 0 | | | 0 | |

SAMPLE ACTION PLAN AND BUDGET FOR
IMPLEMENTATION USING DOUBLE SHIFTING, SPECIALIZATION AND REDUCTION OF CORE COURSES

| OBJECTIVE | STRATEGY | ACTIVITY | OUTPUTS | RESPONSIBLE PERSON | TIME FRAME | CALCULATION DETAIL | BUDGET | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Rwf | USD |
| Reduce the Drop out and Repetition rates in Primary school | Increase the teacher/student ratio | Double shifting – planning | Complete double shifting program | MINEDUC Technical team | 27/10/2008 – 05/12/2008 | Internal to MINEDUC | 0 | 0 |
| | | Presentation of double shifting paper to MINEDUC Management | Completed presentation and inputs from the MINEDUC Management | MINEDUC Technical team and Permanent Secretary, MINEDUC | 05/11/2008 | Internal to MINEDUC | 0 | 0 |
| | | Consultation with stakeholders | Completed stakeholders consultation and inputs into the double shifting paper | MINEDUC Technical team | 10/11/2008 | 25 stakeholders, tea lunch at 15,000 per persons | 375,000 | 694 |
| | | Integrating stakeholders inputs into the double shifting Cabinet Concept Paper and preparation of its Cabinet Paper | Completed Cabinet Concept Paper and Cabinet Paper | MINEDUC Technical team | 11/11/2008 | Internal to MINEDUC | 0 | 0 |
| | | Submission of Cabinet Concept Paper and Cabinet Paper on double shifting for approval | Approved Cabinet Concept Paper | Minister of State, MINEDUC | 12/11/2008 | Internal to MINEDUC | 0 | 0 |
| | | Integrating Cabinet inputs into the double shifting Concept Paper | Completed Concept Paper | MINEDUC Technical team | 13/11/2008 – 14/11/2008 | Internal to MINEDUC | 0 | 0 |
| | | Planning of sensitization seminars | Complete sensitization schedule | MINEDUC Technical team | 17/11/2008 – 28/11/2008 | Internal to MINEDUC | 0 | 0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | for the District Technical Teams (preparing schedules, gathering and sorting out school statistics) | | | | | | |
| | | Sensitisation and training of District Technical teams on the Double Shifting Paper | Satisfactorily completed sensitisation seminars and training workshops | MINEDUC Technical teams | 01/12/2008 – 12/12/2008 | | | |
| | | Sensitisation and training of school heads and PTA on the Double Shifting Paper | Satisfactorily completed sensitisation seminars and training workshops | District Technical teams | 15/12/2008 – 23/12/2008 | | | |
| | | Implementation of the double shifting strategy and sensitisation of school pupils on it. | Successful start of implementation and completion of sensitization of the school pupils | Respective school heads | 05/01/2009 – 30/01/2009 | | | |
| | | Monitoring and gathering feedback on the field performance of the double shifting strategy | Available data and information on the field performance of the double shifting strategy | MINEDUC Technical team and District Technical teams | 01/02/2009 – 27/02/2009 | | | |
| | | Analysis of obtained information and development of intervention measures to correct detected shortcomings | Completed analysis and developed intervention measures | MINEDUC Technical team | 02/03/2009 – 13/03/2009 | | | |
| | | Implementation of developed intervention measures | Completed implementation of intervention measures and absence of | MINEDUC Technical team and District Technical teams | 16/03/2009 – 27/03/2009 | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | identified shortcomings | | | | | |
| | Optimize the utilization of physical facilities | Developing a double shifting strategy | Completed double shifting strategy | MINEDUC Technical team | 27/10/2008 – 05/12/2008 | | | |
| | | Reduce the number of taught subjects | Completed list of reduced taught subjects | MINEDUC Technical team | 27/10/2008 – 05/12/2008 | | | |
| | Increase the number of qualified teachers | Developing in-service training programs for teacher | Completed in-service training programs for teacher | Task Force for Teacher Training | 22/10/2008 – 20/12/2008 | | | |
| | | Implementation of in-service training programs for teacher | Running in-service training programs | MINDEUC, TSC and TTC | 05/01/2009 onwards | | | |
| | Improve the utilization of teachers | Clustering of subjects to maximise utilization of teachers | Developed subject clusters | MINEDUC Technical team | 27/10/2008 – 05/12/2008 | | | |
| | | Specialisation of teaching according to clusters | In-service cluster training and adoption of clusters in the TTC | MINEDUC Technical team | 05/01/2009 onwards | | | |
| | Improve the methods and content of teacher training, with emphasis teacher cluster specialisation | Development of in-service courses on teaching methods | Completed in-service training programs for teaching methods | Task Force for Teacher Training | 22/10/2008 – 20/12/2008 | | | |
| | | Introduction of in-service course on teaching methods | Running in-service teaching methods training programs | MINDEUC, TSC and TTC | 05/01/2009 onwards | | | |
| | | Provision of up to date teaching aids | Provision of 25% of the requirements of modern teaching aids | MINEDUC | By end of 2009 | Establish unit costs and then multiply by pupil/teacher needs per school | | |
| | | | Provision of 75% of the requirements of modern teaching aids | MINEDUC | By end of 2010 | costs and then multiply by pupil/teacher needs per school | | |
| | | | Provision of 100% of | MINEDUC | By end of | costs and then | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | the requirements of modern teaching aids | | 2011 | multiply by pupil/teacher needs per school | | |
| Increase enrolment numbers in Tronc Comnun | Increase the physical facilities | Design and construction of required physical facilities<br><br>(This may be negated by double shifting) | Completion of 25% of the required physical facilities | | 2009 | Establish construction schedules and costs | | |
| | | | Completion of 75% of the required physical facilities | | 2010 | Establish construction schedules and costs | | |
| | | | Completion of 100% of the required physical facilities | | 2011 | Establish construction schedules and costs | | |
| | Increase the number of qualified teachers | Transfer of excess teachers from lower Primary school | | | | | | |
| | | Recruitment of qualified teachers | | | | | | |
| | | Increased enrolment into the TTC | | | | | | |
| | Reduce the number of subjects | | | | | | | |
| | Clustering of subjects to maximise utilization of teachers | | | | | | | |
| | Improve the | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | methods and content of teacher training, with emphasis teacher cluster specialization | | | | | | | |
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