CONCEPT NOTE

FOR

ONE LAPTOP PER TEACHER (OLPT)

Approving Authority: Rwanda Basic Education Board
Focal Person: Head of Department of ICT in Education

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## Abbreviations

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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>TWG</td>
<td>Technical Working Group</td>
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<tr>
<td>CBC</td>
<td>Competency Based curriculum</td>
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<tr>
<td>CADIE</td>
<td>Capacity Development for ICT in Education</td>
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<tr>
<td>ICTE</td>
<td>Information Communication and Technology</td>
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<tr>
<td>MINEDUC</td>
<td>Ministry of Education</td>
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<tr>
<td>RISA</td>
<td>Rwanda Information Society Authority</td>
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<td>REB</td>
<td>Rwanda Basic Education Board</td>
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<tr>
<td>OLPC</td>
<td>One Laptop Per Child</td>
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<td>OLPT</td>
<td>One Laptop Per Teacher</td>
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<tr>
<td>TDM</td>
<td>Teacher Development and Management</td>
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1. Introduction

The use of ICT is fundamental to achieving the rapid social and economic development outlined in Rwanda’s Vision 2050, and its use in education is therefore critical for enhanced use of ICT tools to transform teaching and learning, and to support the improvement of quality across all levels of education in Rwanda. However, the Government of Rwanda has recognized that access to ICT device is not enough to improve learning outcomes, it has to be complemented with teaching skills to use ICT as a learning tool, as well as the provision of basic ICT infrastructure in schools. The use of technology can increase equity in the education sector if its effective use is implemented. Therefore, investments are also needed in basic infrastructure.

The implementation has been facing challenges during the introduction and use of ICT in education. Among those challenges, the key one was having the teacher not being at the center of the envisaged digital transformation. Most of the projects only focused mostly on technology for the learners, hence the teaching pedagogy using ICT was not quickly adopted.

Teachers are not empowered to drive the education disruption, hence achieving one laptop per teacher (OLPT) would allow teachers to champion the digital transformation in education as they are the pivot of the creation of knowledge and capacities for the future.

Effectiveness of using ICT in education can only be increased by using technologies, as computers shall allow the teacher to prepare lessons, measure competences at the entrance and exit of every unit/chapter at the same time reporting will be quick and automatic through existing upgraded e-learning. Furthermore, OLPT will increase the consumption of edutainment and multimedia digital textbooks already produced by REB. This concept note aims at redesigning modality to provide laptops to teachers.

2. Background

While a device for every child remains the end goal, MINEDUC decided to shift from one laptop per child (OLPC) to the concept of a “Smart Classroom” in order to reduce cost and increase access and equity to students who were otherwise unable to afford computers through the purchase program stipulated in the ICT in Education policy approved in 2016.

The ICT in Education policy stresses on the implementation of two smart classrooms with 50 laptops, a projector, and access to internet per room in every school. On top of that, REB has taken the initiative to add 5 more laptops that are used by teachers who rotate in those smart classrooms as per the timetable elaborated by every school. The objective of implementing smart classrooms in schools is to ensure that technology is integrated in all education processes such as lesson preparation, lesson delivery, assessment and research.

Furthermore, this policy encourages teachers to own computers through a three years’ loan scheme. As per 2021, only 884 laptops in 884 secondary schools have smart classrooms. Every smart classroom has 50 laptops, and every school has 5 additional laptops for teachers, i.e., 4,260 laptops for teachers in the 884 schools. All the distributed laptops were purchased under the national budget for the past 5 years.

3. Objectives

- Redesigned modalities for laptops acquisition for teachers in Basic Education
- To empower teachers to teach using computers while improving the quality education in order to:
  - Fast track digital transformation
  - Increase the use of e-learning platform and the consumption of digital content
  - Promote the e-assessment to adopt formative assessment as Competency Based Curriculum (CBC) requires
  - Support the remote learning and contribute to the teaching and learning continuity during disruption like Covid19 pandemic, etc.
  - Follow online and blended trainings

4. One Laptop Per Teacher (OLPT) current Status and Gap

Table 1. One Laptop Per Teacher current Status and Gap

<table>
<thead>
<tr>
<th></th>
<th>Pre-primary</th>
<th>Lower Primary</th>
<th>Upper Primary</th>
<th>Secondary</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Teachers</td>
<td>3,572</td>
<td>36,885</td>
<td>24,590</td>
<td>32,499</td>
<td>97,546</td>
</tr>
<tr>
<td>Current % teachers with laptops</td>
<td>x</td>
<td>x</td>
<td>6%</td>
<td>38%</td>
<td>14 % ratio (1:6)</td>
</tr>
<tr>
<td>% teachers with laptops by July 1,2022</td>
<td>100%</td>
<td>x</td>
<td>6%</td>
<td>49%</td>
<td>22% ratio (1:5)</td>
</tr>
<tr>
<td>Gaps (teachers without laptops) after July 1,2022</td>
<td>x</td>
<td>36,885</td>
<td>22,890</td>
<td>16,294</td>
<td>76,069</td>
</tr>
</tbody>
</table>

Considering the number of teachers in place and the number of distributed devices for teachers, there is currently one to six ratio (1:6) with plan to have one to five (1:5) by July 1st 2022 as per available resources. Considering primary and secondary, the biggest gap is in primary level whereby there is a ratio of one to twenty (1:20) comparing to one to three (1:3) in secondary schools.
5. ICTE training for teachers

Secondary school teachers are trained through capacity development in ICT in Education (CADIE) project and so far, 12,311 teachers have been trained for the past 18 months with the expectation to train 13,000 more teachers in the coming 18 months.

Primary school teachers are trained through digital skills literacy component under the “Quality Basic Education for Human Capacity Development” project funded by the World Bank and so far 12,000 teachers have been trained for the past 12 months with the expectation to train 12,000 more teachers for the next 12 months. As laptops will be available, the refresher training will carry on along with distribution so that teachers adopt the use as fast as possible. Meanwhile, teachers are being trained gradually using existing smart classrooms in schools.

6. Issues and challenges

i. Teachers are not empowered to drive the education disruption caused by closure of traditional settings. Hence achieving one laptop per teacher (OLPT) would allow teachers to champion the digital transformation in education as they are the pivot of the creation of knowledge and capacities for the future.

ii. Much as ICT was introduced in education, its use is not yet reflected in the classroom context specifically in terms of teaching, content delivery, classroom management, and other learning processes (notes, content, assignment, feedback, assessment and examinations, e-learning, online teaching, open distance learning, communication among schools’ leadership and peer learning). This calls for a quick adaptation of the education system in Rwanda to address the need to adapt the gaps in regular use of ICT devices in all classrooms.

iii. Sometimes teachers and pupils are sharing smart classrooms for example they are used to train teachers which is not enough for the teacher to have the required mastery cope with various educational technologies and innovations due to the lack of constant access to devices.

iv. Teachers tend to forget what they have been trained on because of lack of access to laptops; they cannot practice what they learnt.

v. Training pace is still low, because of using face-to face training

7. Solution

Providing laptops to the teacher will solve issues related to:

i. Fast tracking digital transformation

ii. Increasing the use of e-learning platform and the consumption of digital content

iii. Promoting the e-assessment to adopt formative assessment as CBC requires

iv. Supporting the remote learning and contribute to the teaching and learning continuity, Covid19 has shown that remote teaching is a must, hence access to computer is a must

v. Blended training approach shall speed up the training to about three times (3) faster
8. Maintenance and Repair

For sustainability, REB will ensure repair and maintenance agreement with IPRC and replacement when necessary through the existing device acquisition in ICTE. Schools interact with IPRC repair centers and REB through ticketing system for repair at icte.reb.rw. Furthermore, REB conducts a mobile clinic every quarterly to provide support at district level. For security and accountability purpose, REB signs a contract (which is available in the annex) with a school which receives teachers’ laptops. These laptops are and remain school’s property. The school headteacher signs also agreement with the teacher upon receiving a laptop and when a teacher moves from the school, he/she hands-over the laptop among other things to the headteacher.

9. Consultations made

Views from different stakeholders including teachers, MINEDUC, REB-ICTE and REB-TDM, ICTE-Technical Working Group (TWG), Rwanda Information Society Authority (RISA).

10. Timing

Implementation of the concept will commence immediately after the approval by REB Senior Management

11. Handling

Once the concept is approved, the implementing institution is REB through ICT in Education Department

12. Financial implication

The unit cost for icore3 laptop is 550,000 FRW for secondary school teachers
The unit cost for Celeron laptop is 390,000 FRW for Pre-primary and Primary school teachers
Considering that the total number of laptops provided to teachers is 12,464 in secondary and the total number of teachers, there is a need of 3,572 laptops for Pre-primary, 61,475 laptops for primary school teachers, and 20,035

<table>
<thead>
<tr>
<th>Study Level</th>
<th>Unit cost</th>
<th>Number of Teacher</th>
<th>Total cost</th>
</tr>
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<tbody>
<tr>
<td>Lower Primary</td>
<td>390,000</td>
<td>36,885</td>
<td>14,385,150,000</td>
</tr>
<tr>
<td>Upper Primary</td>
<td>390,000</td>
<td>22,890</td>
<td>8,927,100,000</td>
</tr>
<tr>
<td>Secondary</td>
<td>550,000</td>
<td>16,294</td>
<td>8,961,700,000</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>76,069</td>
<td>32,273,950,000</td>
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Table 1. Annual required budget

<table>
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<tr>
<th></th>
<th>22/23</th>
<th>23/24</th>
<th>24/25</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>10,757,983,333 FRW</td>
<td>10,757,983,333 FRW</td>
<td>10,757,983,333 FRW</td>
</tr>
</tbody>
</table>

By allocating 10,757,983,333 FRW, every year in three years, all teachers will be having a laptop.

13. Strategies to mobilize resources

   a. Planning in the national budget
   b. Request for support from ICT in education development partners

14. OLPT impact on climate change

As far as climate change is concerned, while teachers will be preparing lessons using computers, reporting using computers, printing will be significantly reduced. Also, applications are available for students’ attendance, providing assignment, marks report, project work, etc. Some activities will be done remotely such as teacher training and this will reduce the use of vehicles and online training, online forum discussions can be used. Hence, few papers will be used and as a result, the environment will be protected as a big number of trees will be preserved to maintain the climate.

Regarding the electronic disposal, since May 2018, REB has agreement with Envirosolve\(^2\) to refurbish old electronic equipment including computers to be reused, and if need be, Envirosolve process disposed equipment as e-waste in a fashion that does not degrade the environment. As these computers remain the school properties, schools in collaboration with REB will dispose the computers through the Envirosolve framework.

15. OLPT impact on inclusion (gender and disability)

Basic education counts 97,546 teachers whereby almost a half of them are women, while referring to WEM-TECH strategy\(^3\) from the Ministry of Gender and Family Promotion. Also, the gender profile in information and communication technology (ICT)\(^4\) indicates that there is a gap in digital access in terms of digital device as well as digital skills. Once OLPT reaches all teachers, it is clear that gender digital divide will be tremendously addressed in basic education.

As far as teachers with visual, hearing and speech disabilities are concerned, computers will be integrated with a software that can let visual impaired teachers navigate and explore the computer. To this note, the digital content has been developed using audio, visual and audio-visual content format including edutainment, multimedia digital textbook which are available to support these teachers.

\(^2\) https://enviroserve.rw/
\(^3\) http://docs.migeprof.gov.rw/Products/Files/DocEditor.aspx?fileid=4064&doc=akx3VkM3eHd1SF1wZ2VZeHZyOuYmMjVRTDfJ1K1RN1VBeTNQekvVzZNSy0_ljWwNjQi0