

# EGRS Simplified Costing Model

## Handbook



**basic education**

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The Early Grade Reading Study (EGRS) research programme has encompassed a number of studies which have evaluated programmes that sought to improve literacy outcomes in the Foundation Phase in South Africa (Grades 1-3), mainly through the use of structured learning programmes.

Such structured learning programmes referred to as the ***education triple cocktail*** in South Africa, take different forms, but generally consist of:

- Daily scripted lesson plans
- Additional learning and teaching support material (LTSM)
- Teacher training
- Teacher coaching

The first three—lesson plans, additional LTSM, and teacher training — are referred to as the base programme (BP).

A very simple costing tool was developed in Excel as a part of the EGRS Series Synthesis project for the What Works Hub in Global Education (WWHGE). This tool makes use of some of the costing and assumptions framework from an earlier, much more comprehensive model, developed in 2020 by DNA Economics ([Link to report](#)).<sup>1</sup> This model included provincial-level modelling and roll-out scenarios over time. They reported the base numbers and estimated costs under three potential delivery models:

- External model (with coaching support delivered entirely by external service providers)
  - External coaches visit teachers at schools, observe lessons, and provide feedback.
  - Externally-led base programme.
- Hybrid model (Institutional expertise and provides external coaches)
  - Internal coach (DH) supports teachers within the school, and teaching assistants support internal coach.
  - External coach visits schools to support internal coach—does not work with teachers.
  - Internally-led base programme
- Internal model (Institutional expertise within schools)
  - Internal coach (DH) supports teachers within school, whilst teaching assistants support internal coach.

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<sup>1</sup> <https://www.education.gov.za/Programmes/EarlyGradeReadingStudy.aspx>

- Internally-led base programme.

Since this costing exercise, the EGRP I study (2021-2023) tested a version of the programme which had elements of the hybrid model, but with an externally led base programme. This programme, which was referred to as Department Head (DH)-led coaching, did not result in a significant impact. Thus, the only version of the structured learning programme that has successfully shown an impact to date is the one that is referred to as the model with an externally led base programme and on-site in-person coaching provided by an external coach, i.e., External Model.

## Objective of the Excel Costing Tool

This handbook provides background information, calculation details and general documentation for the Excel Tool named: *EGRS Simplified Costing Model\_vEF*.

This tool seeks to calculate a cost estimate for the delivery of a structured learning programme, and therefore, provides cost estimates on the different elements: viz., learning materials (scripted lesson plans and additional LTSM), teacher training, and teacher coaching.

Teacher coaching is an expensive part of the interventions, and as such, is the element where multiple variations have been tried. Three main variations are used throughout the tool, and are a reflection of the variations tried in the EGRS series of studies. A note here is that these different coaching options do not align very neatly with the three models used in the DNA costing report.

The variations are:

- **In-person coaching (external):** Under this coaching approach, external professional coaches are hired for the explicit purpose of coaching and supporting teachers as a part of the intervention. These coaches train teachers, and conduct school visits, observing teachers in their classrooms and providing them with feedback and tips, whilst motivating them to adopt the programme methods and activities.
- **Virtual coaching (external):** Similarly, for the virtual coaching approach, external professional coaches are hired for the explicit purpose of coaching and supporting teachers as a part of the intervention. However, these coaches provided digital support through WhatsApp communication, sharing of video lessons, and providing feedback, tips and motivation via digital channels.
- **Department Head-led coaching (internal):** In this coaching approach, internal, school-based Department Heads (DHs) received additional training and support to empower them to coach the other teachers at their school. Whilst the aim was to provide as much of the coaching through existing staff members, training of all teachers, and the support and coaching of the DHs was still performed by externally hired coaches (DH coaches) and trainers.

Previous costing exercises had aimed to calculate the total cost in order to scale various models of the EGRS programme. This tool rather acts as a cost comparison for different intervention designs. Estimate

of costs are produced per teacher and per learner, and therefore, in the approach, few simplifications are employed:

- **Costs are estimated per teacher, and per learner:** The number of teachers that the programme reaches is the main cost driver in the estimates. From the per teacher estimate, it is then possible to get to a per-learner estimate by dividing by the average learner-teacher ratio.
- **Single Home Language:** Calculations are only performed for a single home language (HL) or one home language plus English as a first additional language (HL + EFAL). Whilst this can be generalised to multiple languages, the additional complexity of having, say, three HLs in a province is not explicitly modelled.
- **No ramp-up/expansion:** Costs estimates assume full reach in the first year—and the reach is identical in every year.
- **No differentiation between grade and years on the programme:** Under this standard model, teachers may be supported for a number of years. The model does not assign different costs for a teacher in different years (e.g., Year 1 vs Year 2) of the programme. Or between Grades 1, 2 or 3 teachers.
- **Initial costs or periodic costs are averaged over the period that they will be used:** For example, if teachers are on the programme for 2 years and they are only provided with materials once, the costs of the material would be divided by 2.
- **Point in time costs in real 2025 South African Rand (ZAR):** There is no cost modelling or budgeting over several years, reflecting nominal costs. However, a separate output sheet was included (Output-Inflation Adjustment.) to calculate inflation-adjusted costs up to 2030.

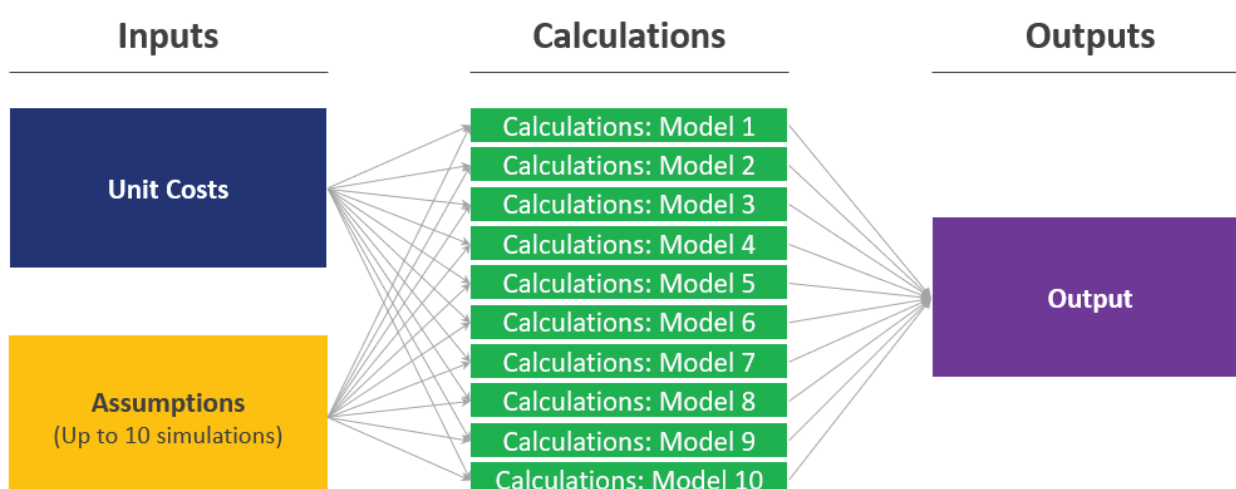
## Model Overview

The tool has a simple set-up, as outlined in Figure 1. The tool obtains user inputs either in the form of **Unit Costs** or through **Assumptions**.

It is possible to run up to 10 different simulations by varying the programme input parameters (for example, the number of schools in the programme, intervening in HL or HL & EFAL) through the **Assumptions**, whilst the unit costs remain the same across all the models.

It is then possible to compare the cost estimates in the **Output** for the different models specified in the **Assumptions**.

This costing tool is not designed to calculate total programme costs. Instead, it provides annual cost estimates per teacher and per learner for each model. These estimates are still influenced by the scale of the programme, as some costs – like material development – are once-off and decrease per teacher as the number of programme participants increases.



**Figure 1: Overview of the Costing Model**

### What Assumptions can be varied?

There are several categories of assumptions that can be adjusted, and these include:

Category	Assumptions
<b>Programme reach</b>	<ul style="list-style-type: none"> <li>Grades targeted</li> <li>Number of schools</li> <li>Average number of teachers per grade</li> <li>Teacher-School Ratio</li> <li>Teacher-Coach Ratio</li> <li>DHs-DH Coach Ratio</li> <li>Teacher-DH Ratio</li> <li>Learner-Teacher Ratio</li> </ul>
<b>Programme type</b>	<ul style="list-style-type: none"> <li>Intervening HL or HL &amp; EFAL</li> <li>Base programme only or BP+Coaching</li> <li>Coaching type (In-Person Ext.; Virtual Ext.; DH-led Int.)</li> </ul>
<b>Management &amp; Financial</b>	<ul style="list-style-type: none"> <li>Management fee %</li> <li>Exchange rate (ZAR/USD)</li> </ul>
<b>Materials Development and Review Assumptions</b>	For HL and for EFAL; and initial development and review process <ul style="list-style-type: none"> <li>Consultant days needed to develop/review materials?</li> <li>Number of days for validation workshop</li> <li>Number of attendees at validation workshop</li> <li>Number of attendees from outside of Gauteng</li> <li>After how many years should materials be redeveloped/reviewed</li> </ul>

<b>LTSM + Tablet Replacement Assumptions</b>	<ul style="list-style-type: none"> <li>○ Number of years coaches are on the programmes (Physical materials + tech only provided once)?</li> </ul>
<b>Teacher Training Assumptions</b>	<ul style="list-style-type: none"> <li>○ How many teachers per trainer?</li> <li>○ What % of trainer days in addition to coaches (if there is coaching)?</li> <li>○ How many days for initial, external training?*</li> <li>○ How many initial, external training sessions per year?</li> <li>○ How many days of smaller / quarterly external training? *</li> <li>○ How many smaller/quarterly external training sessions per year?</li> <li>○ How many days of internal, non-residential training? [1-day max]</li> <li>○ How many days internal, non-residential training per year?</li> </ul>
<b>External Coaching (In-person and virtual)</b>	<ul style="list-style-type: none"> <li>○ How many coaches per head coach/master trainer (only applicable to external model)?</li> <li>○ % of master trainer days in addition to head coaches for training</li> <li>○ How many years on average do coaches stay with the prog.?</li> <li>○ How many days of initial training for new coaches (ext. &amp; int.)*?</li> <li>○ How many training days coaches/trainers receive per quarter*?</li> </ul>
<b>Internal DH Coaching HR Assumption</b>	<ul style="list-style-type: none"> <li>○ How many DH coaches per Head Coach/Master Trainer (internal)?</li> <li>○ How long on average do DH coaches remain with the prog.?</li> <li>○ How many DHs per DH coach/Master trainer (external, led by DH coaches)?</li> <li>○ % of Master trainers' days in addition to coaches for training?</li> <li>○ How many days of initial training (external)?*</li> <li>○ How many initial training sessions per year (external)?</li> <li>○ How many days for smaller/quarterly training (external)?*</li> <li>○ How many smaller/quarterly training sessions per year (external)?</li> </ul>

\* If the training takes place over 2 or more days, it is residential (i.e., includes accommodation costs).

## Navigating and Using the Excel Tool

The Excel tool has the Sheets shown in the table below, which closely match the model overview outlined in Figure 1. Sheets which are highlighted in **pink** accept user inputs. Meanwhile, sheets that are highlighted in **grey** have calculations, background data, lists and tools. General users should not need to use the **grey** sheets.

Sheet Group	Sheets	Description
Output	Output-Main	Main output sheet showing the per learner and per teacher costs with a breakdown for all 10 models.
	Output-Table	This is a consolidated view of the costs in the main output sheet (reported in a Synthesis Review).
	Output-Inflation Adjustment	This sheet allows the user to input forecasted inflation figures and produces forecast nominal costs estimates up to 2030.
Assumptions	Assumptions	A key sheet: Here the user defines up to 10 different intervention scenarios/models – a per teacher and per learner cost is calculated for each. All <b>blue</b> and <b>green</b> cells can be edited; however, for the models that we considered only the <b>green</b> cells varied across the different models.
Costs	Unit Costs	All of the Unit costs are contained on this sheet – there are two costs in Columns F and G. Column F has 2020 costs, and Column G has 2025 costs. Only costs from Column G are used for calculations in the Excel tool.
Calculations	PerTeacherCost_1	Calculations for Model 1
	PerTeacherCost_2	Calculations for Model 2
	PerTeacherCost_3	Calculations for Model 3
	PerTeacherCost_4	Calculations for Model 4
	PerTeacherCost_5	Calculations for Model 5
	PerTeacherCost_6	Calculations for Model 6
	PerTeacherCost_7	Calculations for Model 7
	PerTeacherCost_8	Calculations for Model 8
	PerTeacherCost_9	Calculations for Model 9
	PerTeacherCost_10	Calculations for Model 10
Data, Lists and Tools	Lists	Lists for data validation
	Inflation ZAR	This sheet contains the inflation figures used to adjust any 2020 costs to reflect 2025 prices.

In the sheets where user input is expected (**pink** in the table above), only cells with a **blue** or **green** background should be edited ( **20** OR **0%** ). Cells with a **white** background are normally pre-filled or cells with calculations, and should not be edited manually.

Figure 2 shows a view of the assumption sheet to demonstrate how the different models are laid out, and where input can be provided in the sheet.



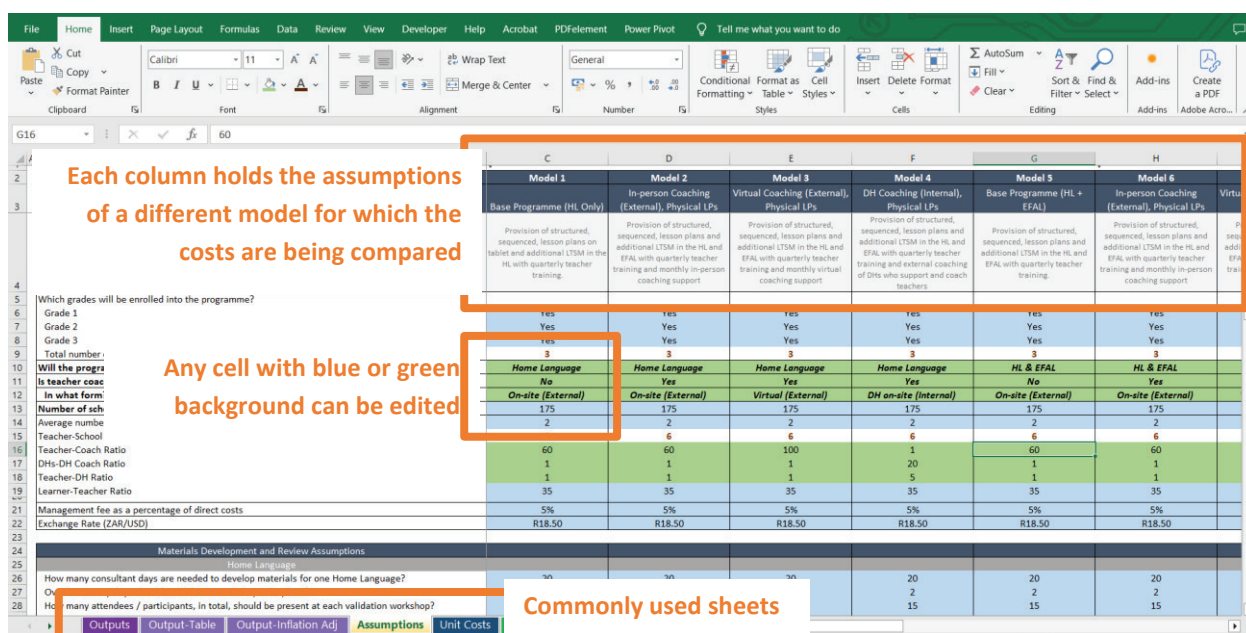


Figure 2: View of the Excel Tool, showing the Assumptions sheet

## Calculation Approaches

### Inclusion and Exclusion of Cost Categories

There are four options which determine what costs are included or excluded: HL/HL+EFAL, Tablets or Hardcopy, Coaching/No Coaching, Type of coaching. The exclusions are shown in **white** in Figure 2.

	Languages		Tablets		Coaching			
	HL	HL+EFAL	Hardcopy / Physical	Tablets	No Coaching	In-person, external coaching	Virtual, external coaching	DH-led coaching
<b>Base Programme Cost</b>								
Material Initial Development (every 12 years)								
HL								
EFAL								
Material Review (Every 3 yrs, except for develop. year)								
HL								
EFAL								
Material provision: LTSM (Physical and Tablet)								
HL								
EFAL								
Material provision: Lesson Plan (Physical Only)								
HL								
EFAL								
Platform Access (Tablets Only)								
Material /App provision: Tables & Data (Tablet Only)								
Cost of Teacher Training (External & Internal)								
<b>Coaching Cost</b>								
<b>Coaching Costs (External and Virtual)</b>								
Coach recruitment (Once off per new coach)								
Running costs (External)								
Running Costs: In person (external)								
Running Costs: Virtual (external)								
<b>Coaching Costs (DH model)</b>								
Coach recruitment (Once off per new coach)								
Operational costs (External)								
Operational Costs: In person (external DH coach)								
Running Costs: DH led (internal)								

Figure 2: Diagram to show excluded costs given choices on Language, Tablets and Coaching

Figure 2, can be used to decode which cost buckets are included in the cost calculation

; in order for a line item to be included it needs to be **green** for all three choices.

For example, the first row in the Base Programme Costs – Initial Materials development for HL – is included in all models, regardless of Language, Tablet, and Coaching choices.

Instead, the first row in the Coaching Costs – Coach recruitment for External Coaches – is only included as a cost if either In-person external coaching or Virtual, external coaching is selected for this scenario.

## Annualisation of costs

The costs for each expense type are calculated either at a “per coach” or “per teacher” level. Certain costs, for example, material development or review or coach onboarding, only need to take place once every few years, so this cost is simply averaged over the number of years for which it is valid. Annualisation takes place for the following variables:

- **Material Development and Review:** This takes place over a 12-year cycle, where every 12-years new material is developed, and every 3 years in between there is a review and updating of the material.

Thus, the development cost is divided by 12, and the review cost is multiplied by 3 and divided by 12 (3 reviews every 12 years).

Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12
Development			Review			Review			Review		

- **LTSM (including Lesson plans if no Tablets):** The cost of LTSM provision is divided by the years the teachers are on the programme (LTSM is only provided once).<sup>2</sup>
- **Tablets:** The cost of Tablet provision is divided by the number of years the teachers are on the programme (they will only get a tablet once).<sup>3</sup>

<sup>2</sup> A note that if the programme was rolled out over time, a slightly different model, not linked to teacher training, may need to be adopted for the material (eg. Training might take place every 7 years for a teacher, but materials are replaced after 5 years). This additional complexity is not considered in the model.

<sup>3</sup> Same as footnote 2.

- **Coach/DH Coach Onboarding, Formal Training Course and Recruitment Costs:** These onboarding costs are divided by the number of years coaches are expected to stay with the programme (on average).
- **Coach/Head Coach Laptop and Tech Set-up:** The Laptop/Tech costs are divided by the number of years the laptop is expected to last.

### Calculation of final cost per teacher

Costs are calculated at three possible Units:

- ZAR/All Teachers
- ZAR/Teacher
- ZAR/Coach

To obtain per teacher costs, the ZAR/All teachers) costs are divided by the number of teachers and the ZAR/Coach costs are divided by the Teacher:Coach ratio.

The costs are then added together to get to a total cost per teacher. Per learner costs are then calculated using the average class size for a teacher.



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