
ZENEX

Decision Framework for the Design and Implementation of School Interventions



The single most important lesson learnt about schooling by researchers, non-governmental organisation (NGOs) and government, in a decade of activity in schooling, is that it is a social phenomenon of immense complexity, opaque to the best-intentioned interventions based on the most self-evidently righteous explanations...it would seem that no one knows quite why the best efforts have produced so little change, or quite why schooling outcomes at levels other than matric, despite our best efforts, seem to have declined even further.

Taylor, Muller and Vinjevold (2003:128)

How to develop school interventions that make a positive difference?

This question is posed against the backdrop of a “crisis” in schooling in South Africa. All the international comparative data (such as TIMMS, SACMEQ, PIRLS) as well as numerous internal analyses (of low pass marks, low scores on standardized measures such as systemic evaluation tests, low throughput to Matric, etc.) show that we have a serious problem.

The logic of interventions dictates that one designs and implements interventions that should meet the (most urgent) needs of your target group. But this logic is premised on the assumption that there are usually a restricted number of identifiable needs in society or in a community that can be met. The analogy in the field of schooling is as follows: you have a well-functioning school that is well-resourced and most of the teachers are properly trained, dedicated and efficient in teaching - but there is no FET science teacher. This is an isolated problem that can be addressed through a dedicated intervention.

The shotgun approach

- But what if you have a school that is mostly dysfunctional, where there are large numbers of teachers who are under-qualified, where there are insufficient resources at all levels (learning and teaching resources) and where there is poor leadership and inefficient school management? The result is a school environment and culture that is debilitating which results in repeated and widespread poor learner performance. If you have to design school interventions that have to tackle THIS situation, there are a limited number of options (besides giving up and acknowledging that this is government's responsibility anyway):
- The shotgun approach: You develop “whole school” interventions that try and remedy the situation at every level from district (demand and accountability) to school leadership and management to teacher development to learner performance. This approach is premised on the assumption that (1) the nature of the problem is complex and systemic [interaction effects] and needs an integrated and “systemic” intervention; (2) even if you do not know which is the main cause of poor school performance, the comprehensive nature of the intervention “guarantees” some positive outcome. It goes without saying that this approach is hugely expensive and it is really only government and large foundations (such as Zenex) that can even afford to contemplate this (examples are the Dinaledi, QLP, SDP, initiatives).

The targetted approach

- The targetted approach: You target some part of the problem only. This can refer to any of the following:
 - School selection
 - Selecting schools in some provinces only
 - Selecting only primary or only high schools
 - Selecting only the worst performing schools (often in deep rural areas)
 - Selecting minimally functional schools (rural and urban settings)
 - Target group selection: Prioritising one level within a school such as school leadership and management or only teacher training or only learner enrichment
 - Domain selection: Selecting only one domain such as Mathematics or Language

(Note: It is worth stating the obvious that even within a targetted approach, there are degrees of scope. The Khanya initiative which targetted one domain only – getting computers into schools – still covered hundreds of schools in the Western Cape).

Thus....

A targetted approach requires some “decision-support”. We need a framework or tool which guides us in the process of making the most rational feasible decisions about various aspects:

- Which provinces, districts and schools te select?
- Which phases within schools to select?
- Which subject areas and grades to select?
- And perhaps – most difficult of all – which type of intervention to select to implement?

We need the best available evidence and information to all of these questions to inform our decision-making. In a nutshell: we need a knowledge-into-action framework.

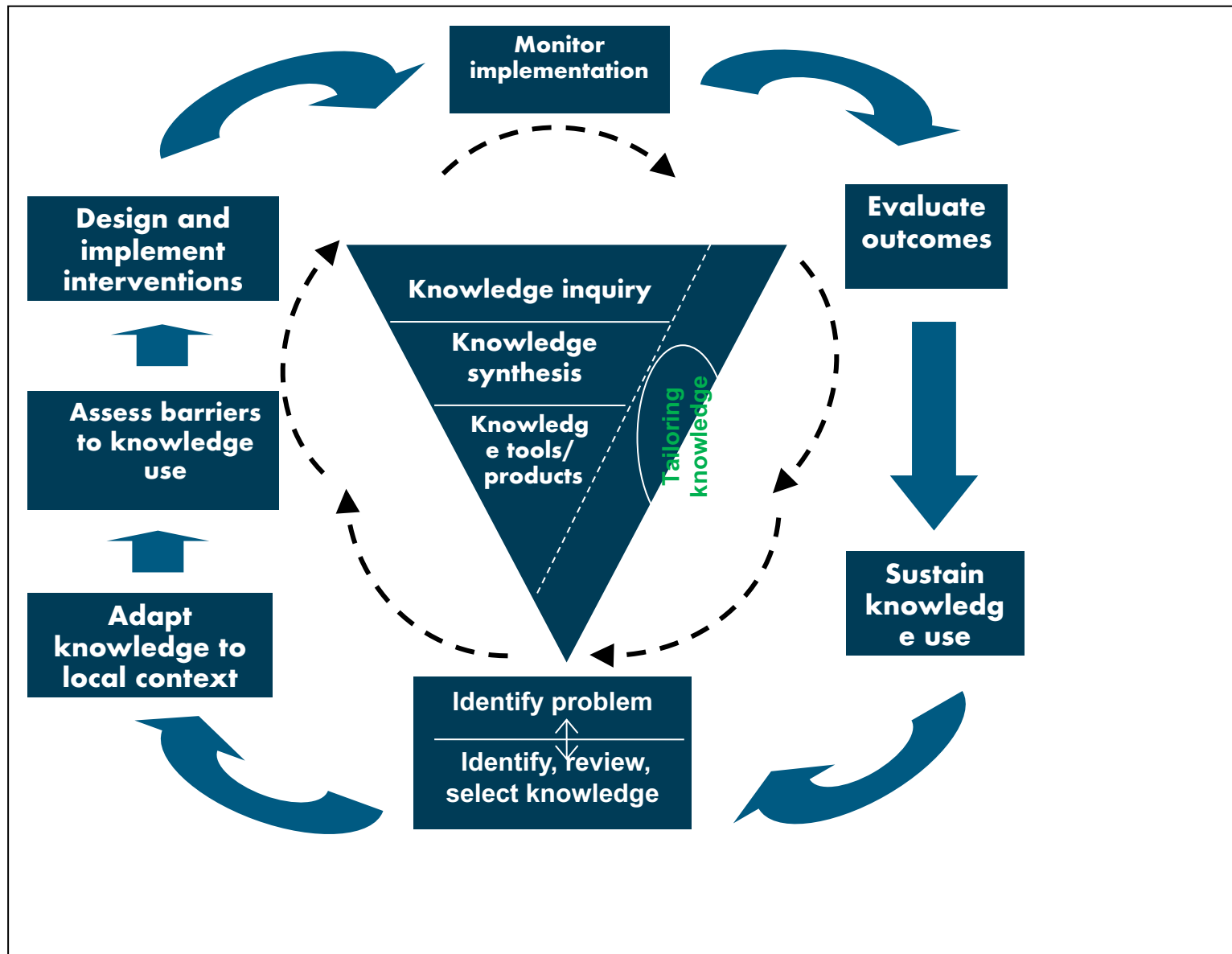
1. KNOWLEDGE-INTO-ACTION FRAMEWORK

The logic: From research to evidence to action

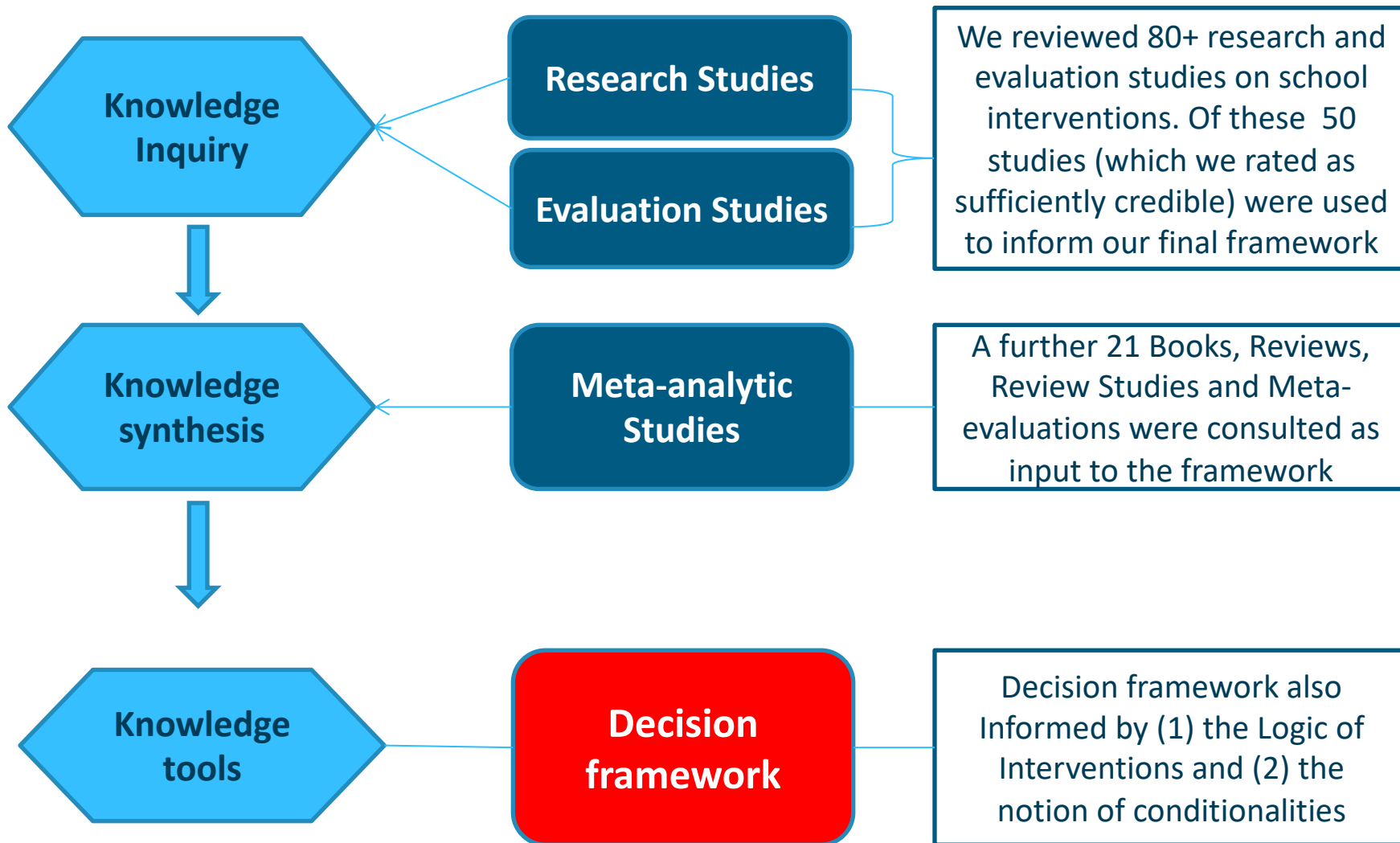
The Knowledge-to-Action Cycle is a conceptual and heuristic framework for translating knowledge in a particular field into useful and actionable knowledge. Basically it consists of a **knowledge creation process** model that has been added to a **planned-action cycle**: Knowledge creation is understood to consist of three phases: (1) knowledge inquiry; (2) knowledge synthesis; and (3) the construction of knowledge tools and products

- ***Knowledge inquiry*** refers to the results of individual research studies (primary studies e.g. surveys/ case studies/ evaluation studies);
- An example of ***knowledge synthesis*** is the systematic review of research findings in a particular area
- Examples of a ***knowledge tool*** are clinical practice guidelines , policy briefs and – in this case – decision-frameworks for intervention design and evaluation

Knowledge-into-Action Cycle



How we adapted the logic of KiA to designing a decision framework



On presenting “evidence” in the Framework

First, we have only included and used findings and results from studies which we have rated to be either ‘credible” or “moderately credible” in terms of good practice in research design and methodology.

Second, where we believe that the evidence in support of a particular conclusion is convergent and confirmatory we have indicated this. Conversely, where we believe the available evidence is too ambivalent and inconclusive to warrant any strong conclusions, we have also indicated this.

Third, even in cases where there is sufficient reason to trust a body of convergent and confirmatory evidence, the conclusions that follow from such evidence often have to be qualified. Even where evidence points to a particular conclusions or conclusions, these are usually conditional on other factors being in place or true. In cases like these, we have stipulated the conditions under which we believe such evidence is valid.

The use of evidence in the “decision” framework

In the real world decisions that are made in developing and implementing school interventions are not only or always based on the best available evidence. In addition to scrutinising and weighting the best available evidence and even stipulating the conditions under which such evidence provides support for a particular course of action, the application of the framework as a decision-framework must take other factors into account. This is because actionable decisions – especially when the stakes are high - are informed by considerations and criteria that are not necessarily related to evidence or matters of evidence. We thus distinguish between three different kinds of decisions:

- **Evidence-based** decisions (decisions informed by the best available scholarship and research)
- **Resource-based** decisions (decisions which are constrained by the available time and money – “reality-test” decisions)
- **Value-based** decisions (decisions informed by differences in values, interests and ideology)

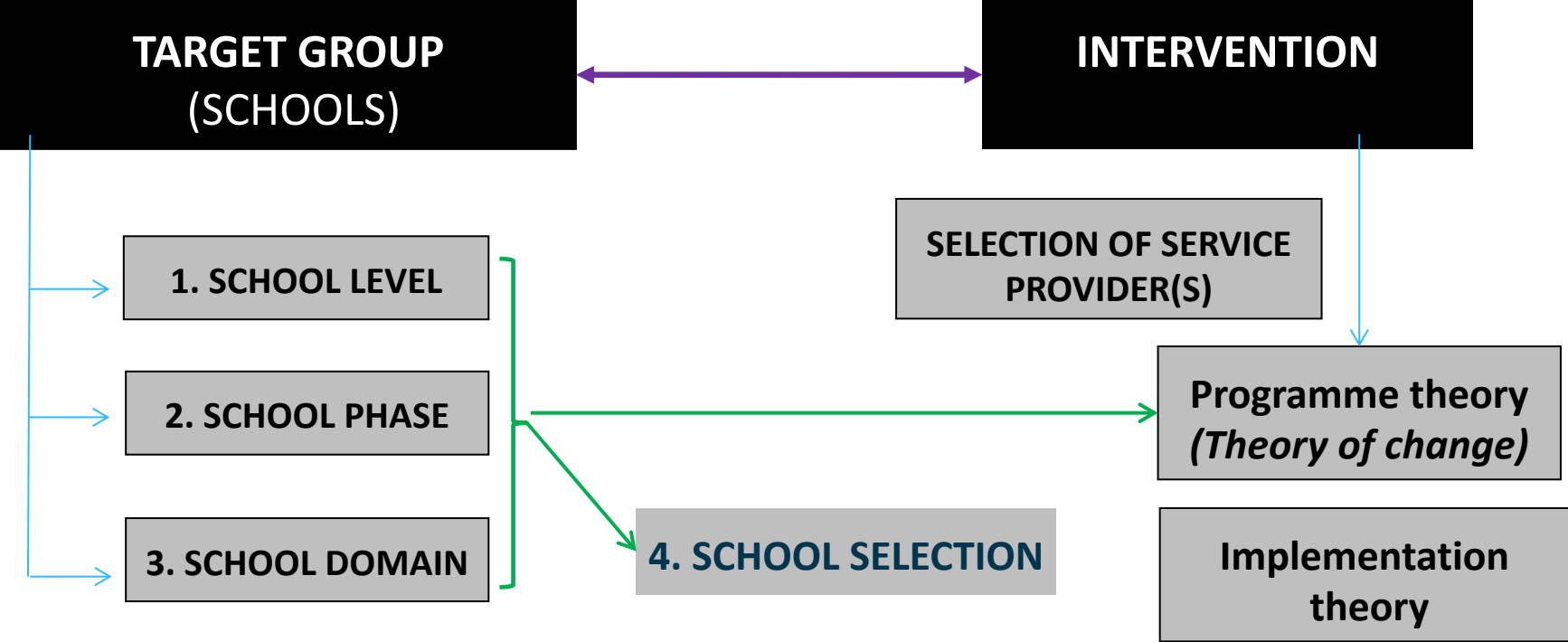
THE FRAMEWORK

Clarification

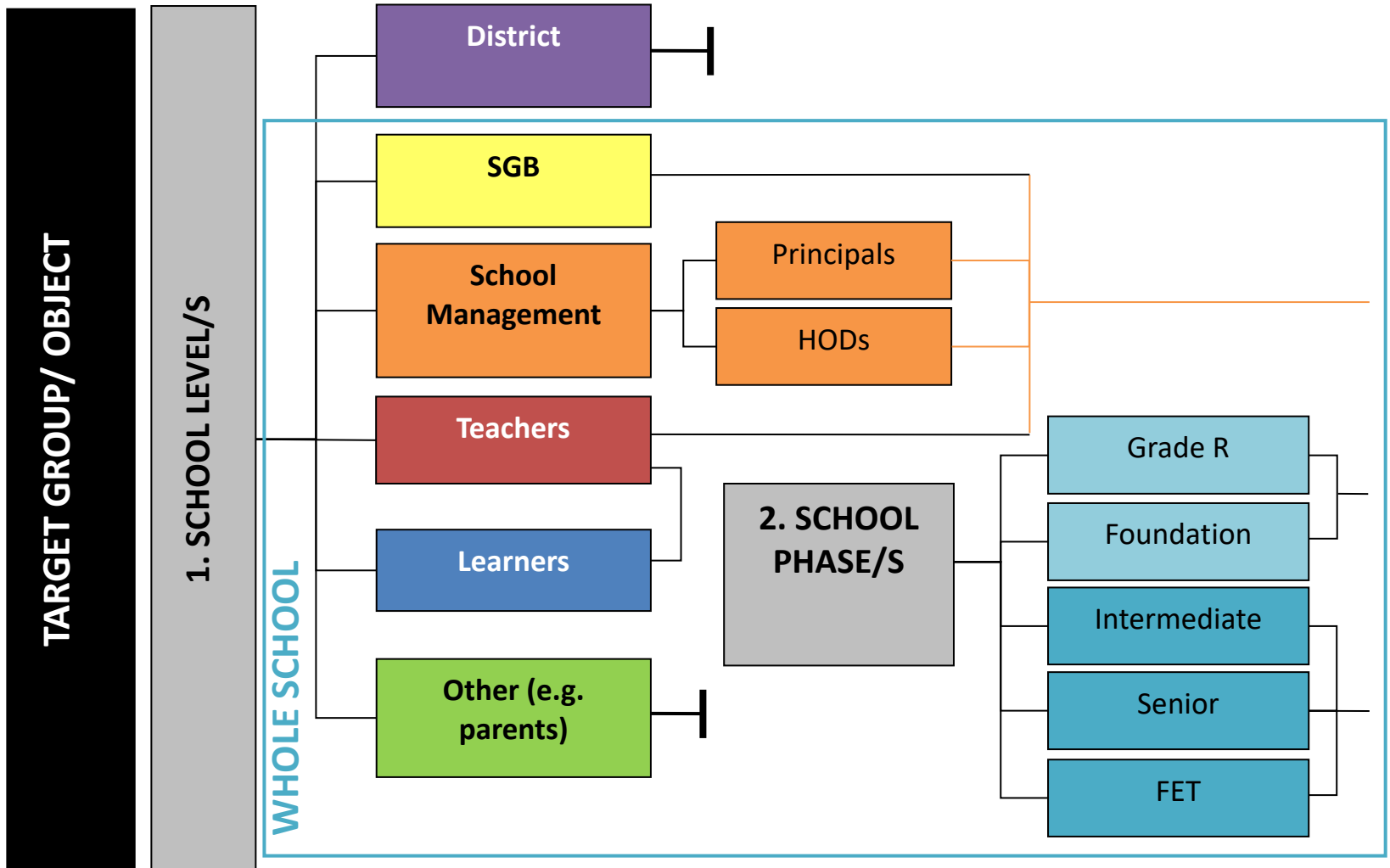
The logic of interventions is quite straightforward: we design an intervention to address specific needs of target groups (or target units). An intervention is generally assessed to be successful if the predicted (positive) outcomes and impact of the intervention are achieved. Stated differently: our intervention has been of benefit to our target group. At the highest level of analysis the framework distinguishes between these two “components”: the target group or object” and “the intervention”. At the next level of analysis, each of these components are further “unpacked”. The specific context is that of school interventions and this partially informs the second level of analysis. The target group is then further analysed in terms of “School level”, “School phase”, “School domain” .

As far as the logic of interventions are concerned, we further distinguish between the “programme theory” (the intervention’s theory of change) and the “implementation theory” (how the intervention will be delivered to the target group).

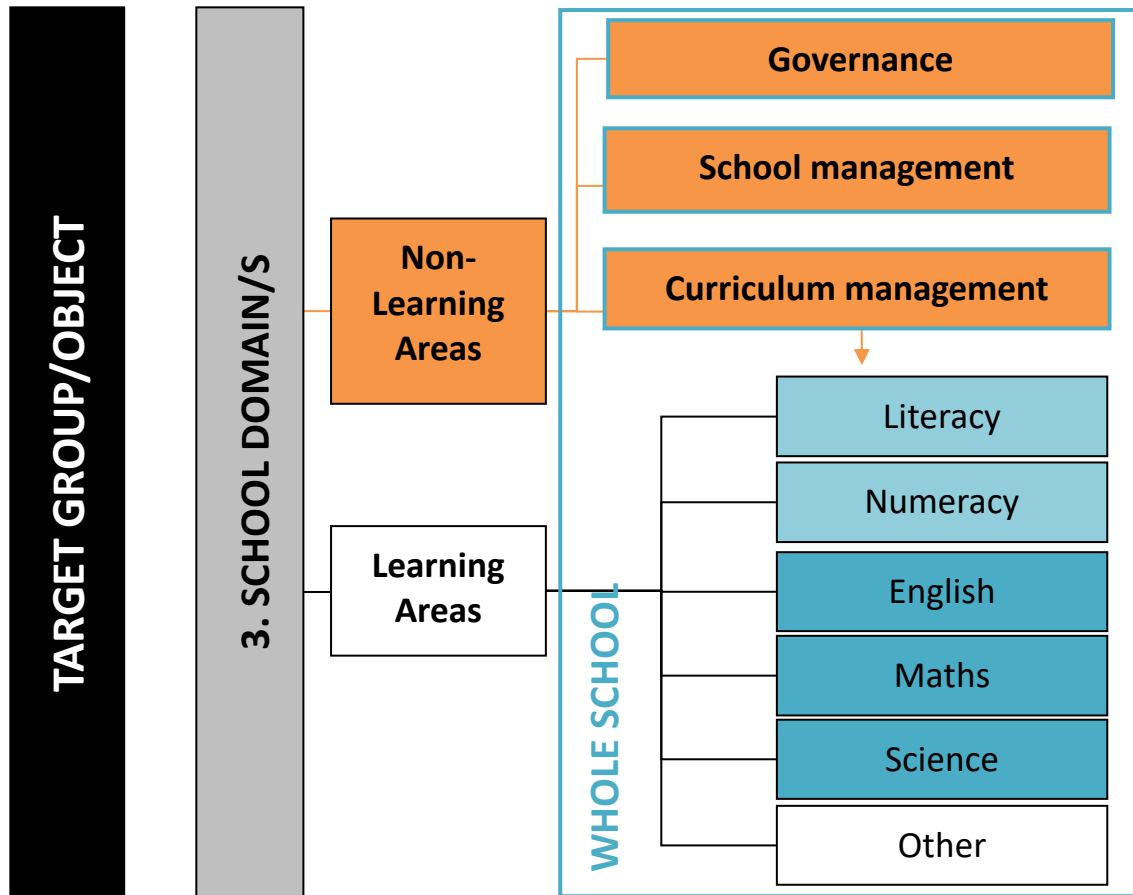
Intervention decision framework for schools



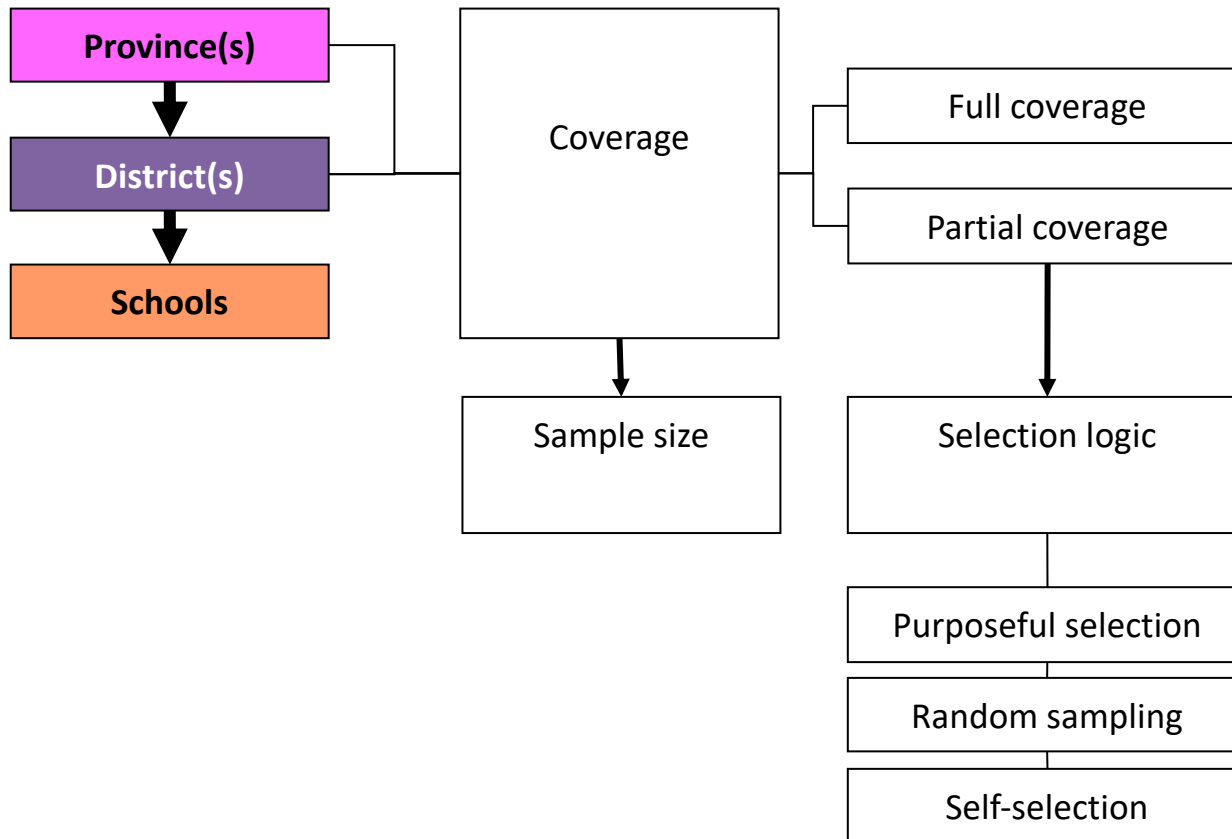
1. School level & 2. School phase



3. School domain/s



4. School selection



Why school selection is a crucial issue

(1) Where schools are located (geographically) are directly correlated with a range of contextual factors related to learner performance (socio-economic status of teachers, learners and parents; access to resources, poverty indicators, etc.).

(2) The geographic location of schools has a direct impact on the degree of success of implementation of the intervention (deep rural versus metropolitan schools).

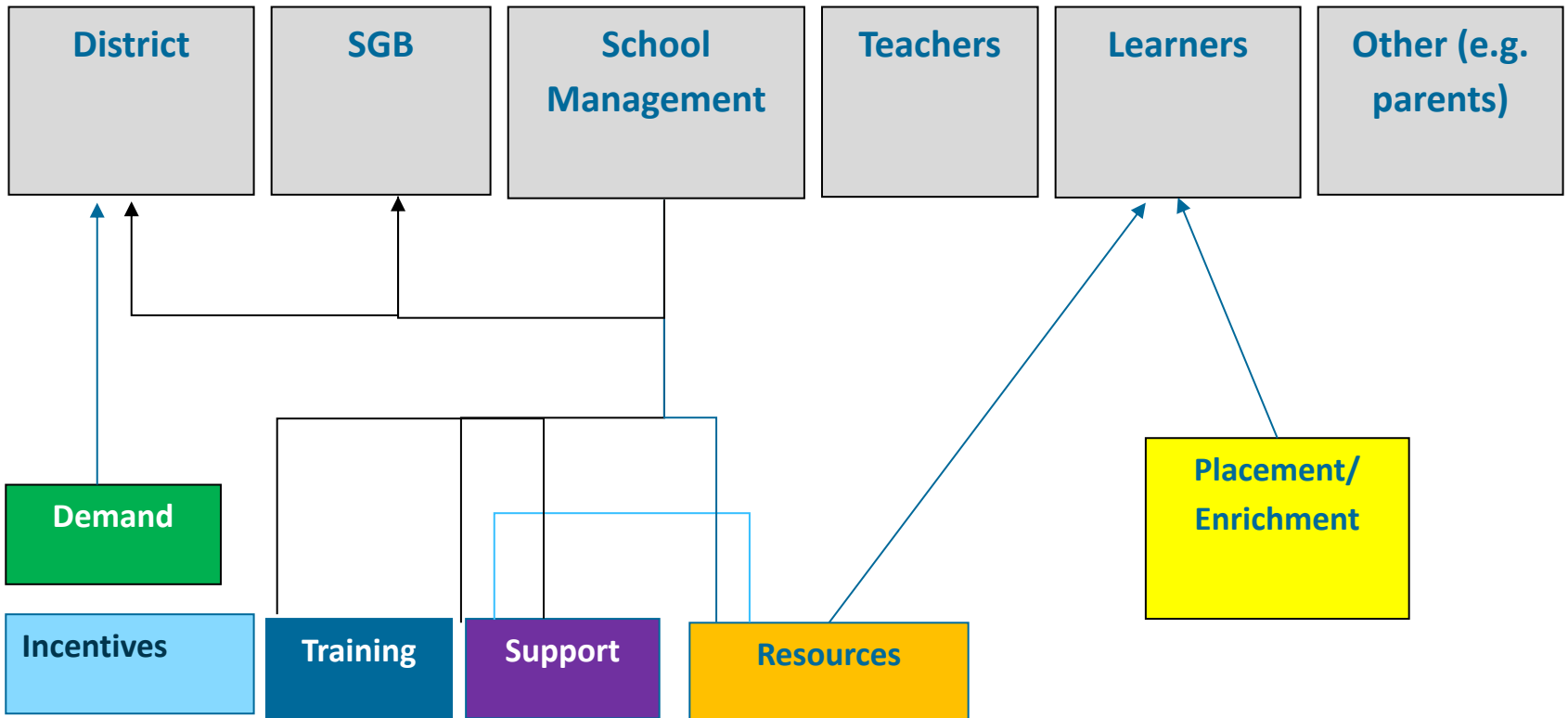
(3) From an evaluation design perspective, it is imperative that rigorous and unbiased selection methods are employed in the selection of schools. This means that random sampling or at least matching of schools (with control schools) should be the preferred method. More importantly, there are numerous pitfalls associated with any form of self-selection (where the schools select themselves or the provincial or district officials select schools).

School Selection: Findings

There is sufficient converging evidence that support the view that the selection of schools should be based on some criteria of minimum functionality or effectiveness. As Schollar and Roberts (2011) found in their meta-evaluation: “Where basic levels of professional and managerial functionality do not exist, an NGO-run programme is unlikely to be able to change pre-existing practices”. This in effect means that school selection becomes a process that is **purposeful or criterion-based**. It also means that more effort is being put into the “measurement” of what constitutes a minimally functional and effective school.

This trend towards criterion-based selection has superceded an earlier “epoch” where schools were selected because they were the weakest or poorest in a particular province or district. Although commendable, the philosophy to intervene in those schools “which needed it most”, has been shown not to work. A corollary of this approach was to leave the selection of the schools to the district or provincial authorities. Invariably schools again were selected that needed the most support – often where the province or district could not provide the required support themselves.

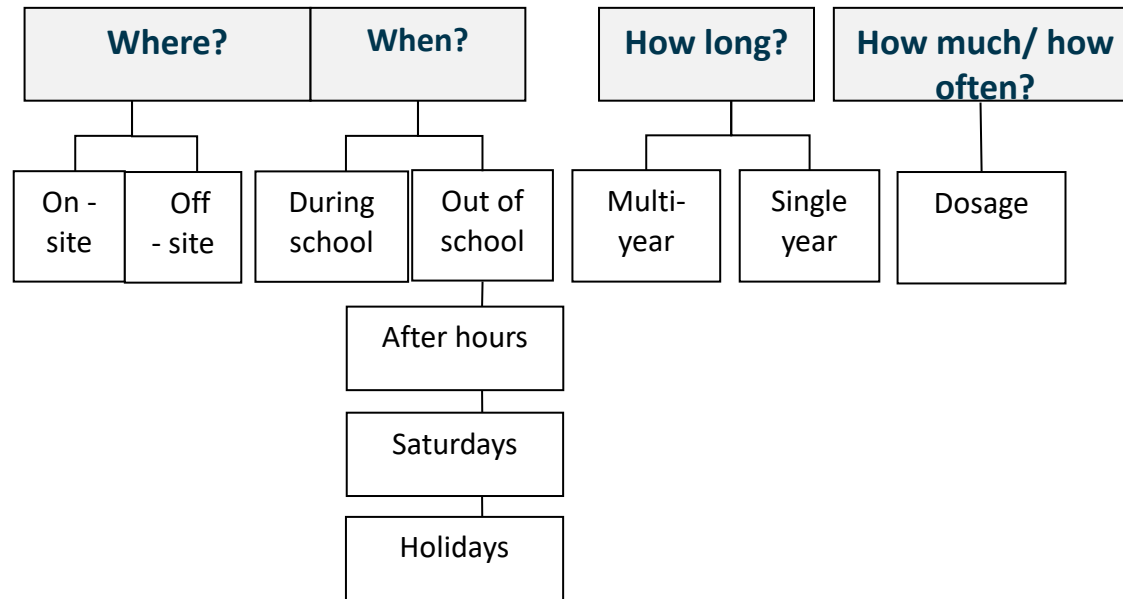
Intervention: Programme theory



Implementation: Selection Service provider(s)

- **WHO delivers the intervention?** Funders and donors typically use service providers as the “implementing agencies” of school intervention. The quality of the service provider is a crucial factor that determines whether the intervention will be successful or not. This implies that – irrespective of the number of different implementing agents – proper screening, selection and monitoring of the service providers are required. All things being equal, a smaller number of implementing agencies are preferred as this allows for more standardized delivery of the programme.

Intervention: Implementation theory



Which general factors could put the implementation at risk
[Timing/ Context/ Stakeholder Interests]?

Implementation Theory

- **SITE: Where will the intervention be delivered?** School interventions are typically delivered on site (at the school) or of site (centrally in a district or elsewhere). Linked to this decision is whether the intervention occurs during school time (mornings or afternoon) or during weekends and holidays. Provincial and school policies and practical/ logistical considerations will most likely determine which decisions are taken.
- **DURATION: How long will the intervention last?** Although little evidence was sourced about the optimal duration of school interventions, it is obvious that the duration will be correlated with the scope and complexity of the intervention. Very complex social programmes are typically multi-layered, multi-site and involve multiple and recursive causal strands. Such complex programmes – of which school interventions are good examples – are expected to take time to be properly implemented and hence to demonstrate impact.
- **DOSAGE: How much of the intervention will be delivered?** There is a growing body of evidence that points to moderate to strong correlations between the “amount” (or dosage) of the intervention and expected positive effects. In this case more is better. It is usually the case that the only constraint of the dosage will be resource-related (funding, time, etc.).

THE DECISION FRAMEWORK

[DESIGNING SCHOOL INTERVENTIONS]

Application of the framework: The Zenex Literacy Project (2014 – 2016)

How would one apply the framework that has been presented and discussed in the previous section in the real world of designing and developing school interventions? The framework dictates a set of seven decision steps which can be simplified in the following manner:

TARGET GROUP/ OBJECT

1. School level (Province/District)
2. School phase (Foundation/ Intermediate/Senior)
3. School domain (Learning and Non-learning areas)
4. School selection (Which schools and how selected)

INTERVENTION

5. Selection of service provider(s)
6. Programme theory (Intervention theory of change)
7. Implementation theory (How intervention will be delivered to target group)

1a. Selection of Province(s)

Considerations	ZENEX Literacy Intervention
Degree of saturation: Number of current interventions in province. Conversely where is demand for intervention greatest	Gauteng Provinces was not considered because of this consideration. Eastern Cape was identified as a province where few interventions have been implemented and where the demand generally is high
Adequate supply of service providers in the province(s) to be selected	Provinces such as Northern Cape, Limpopo and Free State were not considered because of this consideration
Existing partnership (between Zenex and province)	Zenex has long standing relationships with provincial and district officials in KZN and Western Cape

Decision: To select KZN, Eastern Cape and Western Cape

1b. Selection of Districts in Provinces

Considerations	ZENEX Literacy Intervention
Degree of saturation in districts (number of current interventions in the district). Conversely: In which districts are there a greater demand?	“Local” knowledge of conditions in each of the provinces was sourced during meetings with provincial officers
Proximity of districts and circuits to urban areas (and offices of service providers) Consideration of costs to be taken into account.	Districts in reasonable proximity to the urban areas of Durban (KZN), Port-Elizabeth (Eastern Cape) and Cape Town (Western Cape) were selected
Commitment of District offices to the proposed intervention	Site visits by Zenex staff to the respective district offices were undertaken to establish whether sufficient commitment and buy-in is present

Decision: To select Ilembe district [Ndwedwe circuit] (KZN), Port Elizabeth (EC) and Metropole South (WC)

2 and 3. School Phase and Domain

Phase: Evidence from review study

Evidence shows unequivocally that learners in Intermediate Phase are already behind on most performance measures.

Evidence (SACMEQ) shows that learners in Grades 1 – 3 who had been in Grade R in general perform better than their counterparts who were not.

Domain: Evidence from review study

Literacy: Evidence shows unequivocally that reading (and specifically the amount of reading) should be prioritised in any literacy or English-related intervention. A related finding points to the need to improve the English competency of the teachers.

Numeracy: Evidence that shows that interventions should target teacher training interventions to improve content knowledge in Mathematics.

Linking literacy and numeracy: There is persuasive evidence that the success of any numeracy intervention is conditional on a minimum level of literacy competency.

Decision: To select Literacy in Foundation Phase

4. School Selection

Conditionality	Issue	Practical considerations
<ul style="list-style-type: none"> Schools with a minimal level of functionality should be purposefully selected The selection could be based on some readily available school data (infrastructure/ ratio of learners to teachers, etc.). But an onsite functionality assessment should also be undertaken as a final selection screen 	Nr of schools	A trade-off between what is possible within the programme budget and what is minimally required from an evaluation design perspective will ultimately determine what the final number of schools should be
	Control schools included?	Evaluation design requirements make it desirable but cost-considerations may trump any such decision.
	Geographical spread of schools	Cost considerations may dictate the selection of schools that are not too far from district office
	SES Factors	SES differences are equally important to ensure high heterogeneity across schools

School selection for the Zenex Literacy Project

The final selection of schools was based on a rigorous and systematic process consisting of the following steps:

1. Identification of a preliminary list of potential schools in each of the three district selected. This identification was done based on (1) inspection of EMIS and ANA data as well as consultations with provincial officials
2. Onsite school functionality assessments were conducted at each of the 38 schools identified in Step 1 above. These visits were also used to verify school and learner data, availability of learner resources as well as for conducting a needs assessment at the schools.
3. A final list of 24 schools (8 per province) was compiled which was then finally validated with the district officials.

5. Selection of service providers

Decision	Practical considerations
Availability of service providers	Are there service providers (with a proven record) in the school domain (Literacy in this case)?
Should different service providers be used across the different provinces? OR Should the same service providers be used across all schools?	The final decision may have to be a trade-off between standardisation and cost considerations. Considerations of cost may dictate the selection of a smaller number of service providers
Ensure optimal quality assurance and control of service providers	In practice this will require a rigorous process of selecting, screening and “training” of service providers as well as continuous monitoring of their “performance”

Decision: To select ELET, Molteno and READ as service providers. This selection was done after proposals were invited and a subsequent process of screening and consultations.

6. Intervention: Programme theory

Evidence	Considerations and a decision
<p>Training is the most preferred mode of intervention – especially in the area of teacher development. Given other evidence that points to the need to improve teacher content knowledge (in English but especially in Mathematics), we believe training interventions at the individual teacher level are warranted..</p>	<ul style="list-style-type: none">• It is likely that a trade-off between the number of intervention areas (management, teachers, learners and others) and the number of intervention modes (training, support and resourcing) selected will ultimately need to be made. The available evidence is simply insufficient to determine an unequivocal decision.• Considerations of costs may prove to be the overriding factor as different (and multiple) intervention modes obviously have different cost implications.
<p>The evidence is inconclusive on the best intervention mode as far as (curriculum) management is concerned.</p>	
<p>There is strong evidence that appropriate and mediated interventions around teaching and learner resources make a difference.</p>	

Programme theory: Zenex Literacy Project

The design of the Literacy Intervention involved a number of steps:

1. Systematic review of the state of recent Literacy scholarship in South Africa
2. Establishing a reference group of three Literacy experts who were consulted on the different approaches to Literacy interventions
3. Selected service providers (cf. Next slides) were invited to present their preferred approaches (programme theories) in the basis of their past experience.
4. A subsequent process of clarification of the preferred programme theories are currently scheduled (logic model workshops) to arrive at a commonly accepted literacy programme theory across the three service providers.
5. A validation phase has been agreed upon where the three service providers will conduct school visits (2014) to establish the feasibility of their approach

7. Implementation theory: Site, Duration and Dosage

Decisions about the site of the Literacy project, the duration of different components of the project as well as dosage (how much and how often) are currently being clarified with the selected service providers. The final decision will be a trade-off between considerations about best practices, the preferences and needs of the schools selected and considerations of costs and logistics.

Another possible trade-off might involve the degree of uniformity in the Literacy intervention across the three provinces. There are significant differences exist in the balance between mother tongue and EFAL in these provinces which are likely to be reflected in the final implementation theories of the three service providers.

THANK YOU