Introduction to the Zenex Foundation series on Learning Backlogs

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Introduction: the Zenex Foundation series on Learning Backlogs

1. **Overview** of four specialist papers;
   - > Primary School Mathematics
   - > Senior Phase Mathematics
   - > Early Grades Literacy
   - > Senior Phase English

These papers offer fine-grained details that enable deeper understanding of learning backlogs

2. Some **"Wicked Problems"** on learning backlogs:
   - > Language
   - > Resources
   - > Accountability

What the specialist papers show about learning backlogs in SA

- Learning backlogs are part of the poor learning outcomes evident on national and international tests.

- They are structural, and **historically deep-seated**.

- Backlogs **begin in the Early Grade**s and are compounded as learners move up the system.

- Backlogs are most obvious in poorer schools but **apparent in better-resourced schools as well.**

- Interventions so far have yielded **limited results** at best.

- Backlogs **manifest differently** in different grades and subject domains:

  > **Mathematics** (a hierarchical, disciplinary structure) – mastery of fundamental skills and basic concepts is essential for the mastery of new skills and concepts.

  > **English/literacy** (reading, writing and oral participation) in a multilingual context – mastery of a certain level of **reading** by the end of Grade 3 is essential for success in later grades.

It is unlikely that changes will be straightforward or achieved through one-size-fits-all interventions.

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Summary: Mathematics in both Primary Schools and Senior Phase

Both papers show that learning backlogs involve **foundational concepts** in Mathematics. They begin in early grades and are carried forward.

Poor learning outcomes and backlogs are **historical**, not recent. They are evident in all grades and, to a greater or lesser extent, **across the whole system**.

Both point to the **heavy content load of the CAPS Mathematics** curriculum in relation to the time available, suggesting that coverage demands are unrealistic.

Both papers call for curriculum changes that go **beyond simple trimming**.

Both advocate very strongly for curriculum changes to draw on a range of expertise in Mathematics education as well as on the findings from past interventions (including diagnostics and remediation). These are <u>expert</u> tasks.

Early Grade Mathematics

- Since 1994 – **OBE onwards – SA** has not had a **standards-based mathematics** system.

- **Lowering the "pass mark"** and **automatic progression** have led to **great diversity of learner competency** – classrooms include those with little or no competence at the stipulated level alongside those performing at grade level. Classrooms are now so **heterogeneous** that they are **multigrade** in terms of learner competency.

- This places even **greater demands on teachers**, who are expected to cover the stipulated grade level content as if all students have met the competency levels of previous grades, which they clearly have not.

- The ripple effects of multigrade classes are also experienced in **high-achieving schools.**

Interventions need to be based on diagnostic and remediation processes.

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Senior Phase Mathematics

- Learners **enter SP with significant backlogs.**

- In SP Mathematics, there is an important **shift:** from a more numeric and calculation-based form of Mathematics to a **more abstract and symbolic** form of Mathematics.

- Research on Grade 8 learners' tests responses shows **poor understanding of fundamental concepts** in number and measurement. This indicates that these learners would be **unlikely to cope** with the reasoning and logic required for **introductory algebra**.

- Backlogs are **not likely to be remediated straightforwardly** by single or short-term interventions. **Systemic intervention** is needed to specifically target backlogs.

Curriculum changes require a deliberative process led by Mathematics education experts together with skilled teachers.

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A comment on language: "Additive Bilingualism" in SA classrooms

- The Early Grades Literacy and Senior Phase English papers both point to the effects of two sets of policies: the **Language in Education Policy (LiEP)** and its adaptation in the curriculum (**CAPS**).

- Learners begin in the Foundation Phase (Grades 1 to 3) in their home language. In Grade 4 (the start of the Intermediate Phase) English becomes the language of learning and teaching (with Afrikaans also being supported in Afrikaans-medium schools). After this, African languages are not resourced for teaching.

- **It is assumed that learners who speak African languages – the majority in the country – will have sufficient proficiency in English reading and writing to learn through the medium of English after Grade 3.**

- If children do not achieve a certain level of reading mastery before the end of Grade 3, they are unlikely **to succeed** in later grades without intensive remediation.

Both papers call for the need to address the LiEP and CAPS in remedying backlogs.

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Early Grades Literacy

- The majority of South African children **perform extremely poorly** in reading and writing in the early grades.

- Learning backlogs are **differently experienced** in middle class and poor schools. They are a consequence of historical, structural disparities rather than individual failings.

- There are **"two universes"** of experiences in schooling. For poor schools, there is no escape from the **drudger**y that is school without additional additional enrichment activities. School learning becomes **increasingly difficult**.

- The paper provides **snapshots of four large-scale interventions** (GPLMS, EGRS, NECT, MCC).

- The most promising interventions largely **combine** systematic and structured instructional materials, just-in-time training, and classroom-based support (a 'relatively high dose of **coaching**').

- The paper calls for:

  > Revision and updating of **the LiEP**
  > **Proper resourcing** to include informational books in African languages in FP
  > Allowing learning **in African languages in later grades** by providing trained teachers, textbooks and reference materials and assessment
  > **Teacher education** and **teacher development** that is targeted to the actual learning conditions of most classrooms

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Senior Phase English

- Many learners in **high-quintile schools** are below grade- and age-appropriate reading norms.

- Learning to <u>read</u> in English requires an understanding of how sounds are represented **alphabetically**, but also requires **sufficient practice** in reading to achieve **fluency**, sufficient **vocabulary**, and **background knowledge** to read for meaning, as well as **sufficient monitoring** of comprehension and misunderstandings. In all these dimensions South African classrooms fall short.

- The teaching of reading focuses more on **individual word-level meanings and literal understandings**, rather than extending to **text genre, interpretation, and evaluation.**

- **African languages** are not resourced for teaching, and there are **insufficient print-based mater**ials for emergent readers to build proficiency and stimulate interest, particularly in non-fiction.

- **"Matthew effect"**: children who read well are more likely to enjoy reading, read more, and hence read better; children with inadequate vocabularies tend to read less, with less enjoyment, which further limits their vocabulary and knowledge, which in turn inhibits further ability in reading.

- <u>Writing</u> in the Senior Phase is **limited in both quality and quantity**. Learners write too little and receive little formative feedback on writing. Most writing is done in the personal genre, with little practice in writing in more factual or abstract genres (such as narrative, argument and report writing).

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Recommendations from the four papers

- All four papers recommend **changes to the current curriculum**, as well as possible interventions for addressing backlogs alongside the grade-specific content of the curriculum.

- The **Mathematics** papers make **specific recommendations** about immediate and long-term steps that could be taken to deal with learning backlogs. These draw on the authors' own research as well as broader literature on Mathematics education. The papers stress the importance of drawing on a range of **Mathematical education expertise** in making curriculum changes.

- Both of the English papers refer to the **language policies** accompanying the curriculum (including the LiEP) as a factor in backlogs. Again, both draw on the authors' research as well as broader literature to show different dimensions of language education. Both refer to the **inadequacy of resources** for teaching and learning in African languages. Both make recommendations for fundamental as well as immediate changes.

The analysis and recommendations of the four papers are detailed and subject-specific. They provide many insights about the CAPS curriculum and its implementation, and these warrant careful consideration by policymakers and those interested in addressing learning backlogs.

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Addressing learning backlogs as 'wicked problems'?

"Wicked problems" in public policy debates

- "Wicked problems" are **complex, intractable** problems that **resist clear definition**, whose **parameters** are hard to establish, where there are **conflicting interests**, and for which there are "**no solutions** in the sense of definitive and objective answers" (Rittel & Webber, 1973)

- They are **multidimensional** problems that extend beyond a singular rationality, and **solutions** that are achieved are likely to **be imperfect or partial**.

- To address wicked problems, political theorist Brian Head suggests the value of **open processes** and using a **range of approaches** without expecting "**one best solution**".

- Head proposes:

  "a strong focus on considering problems from several perspectives, designing instruments or programs that accommodate complexity and ambiguity, accounting for crises and surprises, improving policy and evaluation capabilities and strengthening the collaborative capacities of the policy system".

- From the papers, I identify three **"wicked problems"** pertaining to the **curriculum**: language; resourcing of schools; and accountability and responsibility in schooling systems.

How might we approach these in open and inclusive processes, that acknowledge different interests, and recognise that remedies may be partial and without "one best solution"?

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Language education in a multilingual context

- In debates in South Africa and elsewhere, there are different approaches to language, language learning, and multilingualism:

  - Languages as bounded entities, learnt sequentially

  - Languages and literacy as contextual social practices

- The first approach is dominant and is evident in CAPS. But this should not mean that other positions are ignored. These different approaches should not be hardened into binary "truths".

- Language in education may be viewed as a wicked problem.

  > Wicked problems are, by definition, complex and intractable. They are multilayered and require different approaches. They have no "one best solution" and in practice, it may be possible to achieve only partial gains.

What is required is deep deliberation involving different interest groups and understandings; open processes in policy change; moving away from advocating "one best solution"; and working for partial gains over time.

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Resources that mediate curriculum enactment

- Resources make a difference to **curriculum enactment**. Schools are differently placed to meet the academic and cultural demands of curriculum ("fortified" vs "exposed").

- Curriculum documentation presents knowledge to be learnt in universalist and abstract ways – but learning is **embodied** and **affective** as well as **cognitive**.

- A "wicked problem" is that **curriculum does not operate neutrally and fairly** to offer the same learning opportunities to all young people.

  > Wicked problems are, by definition, complex and intractable. They are multilayered and require different approaches. They have no "one best solution" and in practice, it may be possible to achieve only partial gains.

- A partial gain in addressing the problem of resource differentials would be for government to provide at least a **set of minimum resources for curriculum enactment.**

- At a policy level, a **more open process for curriculum change** could strengthen the collaborative capacities of the policy system itself.

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Classroom conditions

Extracts from the Early Grades Literacy Paper:

- "Crowding out of the school day with literacy and mathematics activities disproportionately affects students in poor schools who stand to lose the most from a diminished life skills curriculum and who have few resources to make up the losses via private enrichment programmes in arts, crafts, music and sports."

- "Regarding the physicality of classrooms, minimum conditions for learning and teaching include classrooms with adequate light so learners and teachers can see each other; classroom walls that can hold environmental print; classrooms with windows that open when it is hot and close when it is cold; class sizes with numbers of learners that make it possible for teachers to move easily in and amongst learners to work with the whole class; smaller groups of learners and individuals as needed; and a classroom layout that enables children to sit quietly to read, to listen, recount and act out stories and other oral and written texts. Attending to these physical aspects of classrooms together with achieving a maximum teacher:pupil ratio of 1:40 and reliable access to clean water and sanitation, will help increase teacher and learner resilience in poor schools."

Accountability

- Learning outcomes manifest in the smallest unit of the system – the classroom. But classrooms are not the only influence on learning outcomes.

- International experience over many years shows that **classroom practice is very hard to change.** Classrooms are hard to reach through the layers of the system and are influenced by multiple other interests.

- We need a **careful theory of change** that takes complexity into account. Include backward mapping?

- **Change flounders** when interventions are regarded as **objective "levers"** that may be operated to "shift" the practices of people and institutions at a distance, as if they are inert, disembodied entities. People have **capacities and motivations** that need to be taken into account.

- Accountability needs to operate **reciprocally** through the system (vertically and horizontally) and in open processes.

  - Teachers should certainly be held accountable for their classroom practices. But they cannot be held accountable for what is not in their control.

  - Governments and education departments should also be accountable and bear responsibility for their actions.

  - NGOs, funders and academics are not exceptions in this regard and should be accountable for interventions to bring changes to the public system.

Holding all actors appropriately and reciprocally accountable is "wicked problem"

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Accountability

Brian Ramadiro in his keynote address to the Literacy Association of South Africa Conference:

On the question of accountability. This is about who takes responsibility for failure of Black education? The state, teachers, and parents, variously and unequally, assume some accountability for the failure. However, much more powerful and influential groups who have shaped in decisive ways what is learned, under what conditions and in what languages, such as teacher educator and trainers, curriculum developers, policy wonks, have taken almost no accountability for ill-founded educational advice that the state and teachers have acted on in good faith. A case in point is a series of curriculum reform initiatives, viz., OBE, NCS, RNCs, C2000, CAPS, led by English-speaking White middle-class people are widely acknowledged to have been largely unsuccessful and at least partially a reflection of lack of appreciation of the implications of teaching and learning through African languages. (2019, p.8)

Working collaboratively for change

- There are **no simple or single interventions** to produce easy results in school change, or to eliminate the wicked problem of learning backlogs.

- By now, we need to acknowledge that "low hanging fruit" is a mirage, though there are certainly immediate actions to be taken and partial gains to be made.

- We need to work **collaboratively**, in **open** processes, accommodating a **range of interests**, and celebrating partial gains but recognising that achieving change in schooling is a **long journey**, not a short one.

Raymond Williams' "resources of hope":

"If there are no easy answers there are still available and discoverable hard answers, and it is these we can now learn to make and share."

Thank you