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# Teachers' guides: isn't that what they *should* be?

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## Abstract

This essay reflects on recent research and pedagogical interventions by international organisations working in low and middle income countries (LMICs), in relation to preparing teacher's guides. In particular, it examines the rationales and implications of decisions made by some agencies and programmes that have sought to improve early grade learning in LMICs. At the heart of the essay is the wider question of how change happens within centralised education systems, which are typical in LMICs, and how external interventions might contribute better to the process of change.

The stimulus for writing this essay was in part the publication by the World Bank of a document advocating certain ways of preparing and evaluating teacher's guides, and the Bank's request for feedback[1]. At the same time, the experience of participating in several webinars during the pandemic made me more aware of widely different understandings of notions such as scripting for teachers. One presentation included a statement that 'I prepared for this presentation by writing a script, so what's wrong with providing scripts for teachers?' On another occasion, a commentator referred to the need to provide scripts for teachers who are new to the idea of competency-based teaching, to which my instinctive response was: scripting for competency-based teaching would seem to be a contradiction in terms.

[1] https://blogs.worldbank.org/education/raising-foundation-without-lowering-ceiling-how-utilize-teachers-guides-facilitate-high

 

The essay discusses the role of scripting in lesson plans and teacher's guides and suggests that the terms direct instruction, structured pedagogy and scripted lessons have – for some people – become almost synonymous, and that more precise language would be beneficial. The essay does not reject these terms or approaches, but argues for a more considered, consistent and nuanced use of the cited research and of the terms themselves.

At the end of the essay, some suggestions are proposed for an approach that recognises the need for teachers to contribute to the design of any educational intervention, and that teachers' own decision-making should be provided for within any pedagogical intervention, as contrasted with approaches that assume that controlled inputs lead to controlled outcomes.

Keywords: Teachers' guide, structured pedagogy, direct instruction, scripted lessons, low and middle income countries, early grade literacy

## Structured pedagogy and direct instruction

The principal questions for designers of externally-funded educational interventions might arguably be as follows: What are the critical elements for improving an education system? To what extent can teaching and learning materials contribute to this process of improvement? And might this contribution vary considerably when comparing, on the one hand, LMICs – where textbook policy and practice tends to be more centralised – with, on the other hand, more devolved OECD country systems where textbooks may have less influence on classroom practice?

Clear terminology is important. Two terms have increasingly been adopted by organisations and commentators who are interested in improving educational outcomes through system-wide interventions: namely, structured pedagogy and direct instruction. A landmark publication for the World Bank*, Facing Forward: Schooling for Learning in Africa* (Bashir et al. 2018), states that 'Structured pedagogy has been proven to have a significant, measurable effect on students' learning outcomes'. A slightly earlier meta-study (Snilstveit et al., 2016) synthesised a number of studies of primary and secondary school children in mainstream LMIC education published between 1990 and June 2015 and found that 'structured pedagogy programmes have the largest and most consistent positive average effects on learning outcomes'.

In practice, if we understand pedagogy – as I do – to be 'the act of teaching in relation to the ideas that inform and explain it' (Alexander, 2009), the examples of structured pedagogy found in the two above publications do not describe a pedagogical approach but more often describe a multi-prong or 'bundled'

 

intervention, including non-pedagogical elements, particularly for early grade literacy interventions.

For example, Snilstveit et al's definition (2016) is:

> We find that structured pedagogy programmes have the largest and most consistent positive average effects on learning outcomes. Typically, structured pedagogy interventions include development of new content focused on a particular topic, materials for students and teachers, and short term training courses for teachers in delivering the new content.

For other commentators, by contrast, structured pedagogy is practically synonymous with direct instruction and scripted lessons[2].

Although the terms structured pedagogy and direct instruction have followed very different trajectories – the former only becoming common in the past decade, whereas the latter has featured in pedagogical debate for decades – they have both become prominent in recent years. They have also, increasingly, come to be used almost interchangeably. *At first glance*, the terms perhaps seem to mirror each other; *pedagogy* and *instruction* may even seem synonymous, while structured implies firmness, rigour, efficiency and control. 'Structured' also implies that the pedagogy has been structured by someone other than the teacher. Direct may be understood as being based on a teacher's preference for frontal, teacher-led instruction, with a large degree of control. For some commentators, it may also be understood as teachers being directed by a third party in the form of training and/or written guides.

On the other hand, the two terms inhabit different policy spaces: structured pedagogy appears to be limited to the arena of international development and is not found in domestic contexts in the US or UK, whereas direct instruction has more often been the subject of research and debate in English-speaking OCED countries even though it may also be used in some middle income countries. The term direct instruction is less commonly found in research in LMICs, perhaps because teaching practices in LMICs tend to be highly teacher-led in any case.

In spite of this apparent mirroring, both terms are subject to a range of interpretations. For many, direct instruction is contrasted with a constructivist approach. Barak Rosenshine, whose work on teaching methods has become influential

[2] Examples of detailed, scripted lessons can be seen in many teacher's guides. It is interesting to note that the largest textbook publishing sector in the world, that of English Language Teaching, often includes scripted lessons in teacher's guides. This is in spite of the fact that many ELT textbooks have for decades followed a teaching methodology known as a communicative approach, in which one might expect 'communicative' to imply a greater degree of flexibility and open-endedness in teaching and learning than the idea conveyed by a scripted approach.

 

in some parts of the US and UK teaching community in recent years (e.g. Sherrington, 2019), and who was the author of IBE's booklet 'Principles of Instruction' (published in 2010), also contributed a paper entitled 'The Empirical Support for Direct Instruction' to a volume exploring two schools of research into pedagogy and learning: one being direct instruction, the other being constructivism (Rosenshine, 2009).

This apparent distinction between two approaches – direct instruction and constructivist-based – although embraced by theoreticians and some practitioners, including many of the contributors to the Rosenshine (2009) volume, is not necessarily recognised by many teachers who use a combination of approaches in their daily teaching practice, including more student-centred, collaborative and/or inquiry-based activities as well as direct instruction and explicit teaching.

## The emergence of structured pedagogy in donor-funded activities

The growing use of the term structured pedagogy (and structured lesson plans) in LMICs has accompanied a dramatic increase in support for early grade reading in donor-funded programmes in the past 15 years (Chabbott, 2014). As recently as the first decade of this century, international agencies appeared to show little interest in teaching practices associated with primary school reading and writing in LMICs.[3]

In 2003, Margo O'Sullivan – who contributed to a three-year-long initiative in Namibia in the late 1990s, which developed structured lesson plans – found 'no evidence of the use of structured reading lessons in developing countries' (O'Sullivan, 2003). She also ascribed the emergence of the notion of structured reading lessons in such countries to the UK government's introduction of the Literacy Hour in English and Welsh schools (since discontinued as a national strategy in England and Wales). This in turn drew on the Directed Reading Activity (DRA) of the 1970s, which O'Sullivan (2003) says 'does not specify what is to be done, but "rather provides an organisational pattern" and a solid foundation.'

Even as late as 2013, Orr et al's meta-study (Orr et al, 2013), which was based on 23 studies of 'the effectiveness and/or cost-effectiveness of interventions to improve classroom performance of untrained or under-trained teachers' in LMICs, was able to cite only O'Sullivan's work in terms of structured lessons plans.

[3] In 2006–08, I was a consultant to a large USAID-funded reading book support project in Egypt (the National Book Program), in which there was no focus at all on the pedagogy of teaching and reading. See https://www.csmonitor.com/2006/0308/p01s04-wome.html

 

At the same time, Westbrook et al's literature review of pedagogy, curriculum, teaching practices and teacher education in developing countries (2013), although assuming an association between structured pedagogy and direct instruction, in fact found that 'Very few studies reported on successful practices using structured pedagogy and direct instruction. Although some studies reported on a small number of effective interventions based on structured pedagogy with marginalised poor and rural children, these interventions need to be evaluated more rigorously.' This may be due to the interpretation that the authors of the literature review themselves placed on the notion of 'structured pedagogy'.

O'Sullivan's structured lesson plans were tailored to the context of the teachers in Namibia with whom she was working. It is worth quoting extensively from her milestone paper, which says that the approach …

> … was effective in significantly developing pupils' reading skills. The main reason for this seems to be that it provided teachers with a structure and 'close guidance', within which to practise and develop their skills in comprehension, word study, and in developing activities based on reading texts. This led them to view reading as a process of attaining information, a complex interactive process whereby the reader obtains meaning from the text, rather than as a mechanical memory technique. Its effectiveness, as evident in the improvements of pupils' reading skills, supports the use of prescription with unqualified teachers. It begs the question: is it possible for unqualified teachers to develop their own lesson plans, if they do not have a foundation upon which to do this? Perhaps, structured lesson plans provide this foundation. (O'Sullivan, 2003)

## Recent interpretations of structured pedagogy in donor-funded activities

In their World Bank publication, Bashir et al (2018) define structured pedagogy very broadly. Their concluding section (chapter 7, p. 437) states that 'One of the most effective classroom interventions is structured pedagogy – a combination of teacher training, ongoing teacher support, resources for teachers, and classroom learning materials for students.'

Similarly broadly, Kim and Davidson ('Promoting Successful Literacy Acquisition through Structured Pedagogy', 2019), cite Bashir et al., and go on to say that, 'Structured pedagogy has been proven to have a significant, measurable effect on students' learning outcomes'. They describe six principles of structured pedagogy:

1. Maximizing instructional time;
2. Practicing systematic and explicit instruction;
3. Establishing instructional routines;
4. Providing scaffolding;

 

5. Making assessment-informed decisions, and;
6. Fostering Social and Emotional Learning and Engagement.'[4]

Kim and Davidson take pains to explain that they are not advocating for prescribing lesson plans, stating that 'Structured pedagogy is sometimes mischaracterized as not sufficiently inquiry-based or failing to promote critical thinking. [It] is very much aligned with these ideas and is necessary to promote higher order critical thinking skills.'

The Bashir et al study describes several case studies where learning outcomes were favourably impacted by 'structured pedagogy' programme designs. In the example from Burundi, for example, the authors say: 'a fairly consistent education policy that has favored a "structured pedagogy" approach and has been implemented in practice seems to explain the relatively higher performance of Burundi children.' There is no suggestion of a narrow version of direct instruction: the main feature relating to pedagogy (p. 77) states: 'Teachers' use of appropriate pedagogical practices and resources in the class-room: A participative approach is used to teach reading and writing in first and second grades. A whole-word method and pedagogical supports such as posters are used. Reading and writing are done at the same time, in an active manner, using play.'

In 2020, UNICEF's Eastern and Southern Africa Office published an overview of structured pedagogy 'for real-time equitable improvements in learning outcomes', which defined the approach as a 'package of practices with four inter-connected components which are implemented concurrently: teacher professional development, TLMs [teaching and learning materials] formative assessment, and primary caregiver engagement'. (Chakera et al, 2020)

The opening statement of RTI's recently launched (January 2021) Science of Teaching platform[5] sees structured pedagogy as an essential approach for system-wide educational improvements in LMICs, in which teachers' decision-making lies at the heart of changes in teaching practice and improvements in learning outcomes:

> Learning outcomes in low and middle-income countries are disastrously low. The task of improving foundational literacy and numeracy outcomes hinges on raising the quality of teaching and supporting the instructional decision-making of individual teachers – tens of thousands of them in many countries. Structured pedagogy programs have shown an ability to support teachers to make those

[4] This inclusion of SEL and engagement is not widely cited elsewhere in discussions of structured pedagogy.

[5] https://shared.rti.org/content/focusing-science-teaching-improve-foundational-literacy-and-numeracy https://scienceofteaching.s3.eu-west-3.amazonaws.com/index.html#/

 

> individual pedagogical decisions at large scale and that those changes can have a meaningfully large impact on learning outcomes.

The RTI platform defines structured pedagogy broadly, as follows, but unlike Bashir et al and Kim and Davidson, it includes daily lesson plans:

> Key elements of structured pedagogy programs include 1) student books and materials, typically at a 1:1 ratio, 2) teachers' guides that provide daily lesson plans for teachers at various levels of specificity, 3) teacher training organized to reinforce specific skills in teaching the lessons, and 4) ongoing support to teachers implement the structured pedagogy program, typically including coaching and or communities of practice. Other elements are included in specific structured pedagogy programs, such as assessment results for monitoring program implementation, various technology supports including for teacher coaching, and continuous assessment by teachers.[6]

Other examples can also be seen of initiatives by NGOs in LMICs, operating outside donor-funded projects. In India, Central Square Foundation argue that structured pedagogy is a 'scientific, evidence-based, learner-centered approach to teaching that equips every teacher with clearly defined objectives, proven methods, well-structured tools, and practical training. Such a scientific approach has been proven to work for teaching foundational literacy and numeracy skills in children.' (Nayak and Upreti, 2020.)

Given the range of interpretations of structured pedagogy outlined above, is it possible to identify common elements across the various interventions? For example, does structured pedagogy usually imply direct instruction? The above examples show a very diverse understanding of structured pedagogy. For some commentators, it is a combination of elements in a programme, rather than support for a particular kind of *pedagogy* or a particular way of planning teaching and learning materials including teacher's guides. At the same time, it can be seen that due to the enormous efforts of bilateral and multilateral agencies to support LMICs to improve reading outcomes, and the number of programmes designed to change the practices of teaching reading and writing, the increasing profile of structured pedagogy programmes and the increasing interest in prescribed methodology are closely linked to the increasing profile of early grade reading interventions.

## Scripting for teachers

Some agencies have long argued for greater use of scripting. For example, USAID's EdData (2014) stated: 'When the results demonstrate that the teachers need it, we

[6] https://scienceofteaching.s3.eu-west-3.amazonaws.com/index.html#/lessons/pw4nS4OM7i8RlNTLi_2HIB1QNz0sRP3f

 

provide teachers with scripted and prescribed daily lesson plans. Although some would decry such practices as "de-professionalizing" the teacher, untrained and low-skilled teachers overwhelmingly welcome such practical support. Moreover, once teachers become experienced, confident in their own abilities, and knowledgeable of how to teach, the script becomes less necessary.'[7]

The interest in scripting has emerged from some agencies' interest in exerting a greater influence on classroom practice in order to improve learning outcomes. This position has been held by many, both in LIMCs and in OECD countries, and has been part of a long-standing debate about the merits end effects of prescribing methodology. For example, in the 1970s, the noted British curriculum researcher Lawrence Stenhouse cautioned that there is no such thing as 'teacher-proof curricula' (Stenhouse, 1975).

Over the past 30 years, scripting in the US has been closely associated with the teaching of phonics, which itself has been closely associated with the findings of the National Reading Panel (NRP). The NRP report (2000) says 'the role of the teacher needs to be better understood. Some of the phonics programs showing large effect sizes are scripted so that teacher judgment is largely eliminated.' (p. 2-96) Scripting, or semi-scripting, was also greatly encouraged by the US' No Child Left Behind Act of 2002, which financially rewarded schools that adopted 'scientifically based' reading programmes.

A study that is widely-cited in English-speaking OECD countries, and which influenced Rosenshine's own ideas, is Lawrence Engelmann's Direct Instruction (DI) method (the capitalised initials distinguish it from the broader notion of 'direct instruction'). Engelmann's programme of instruction, first developed in the US in the 1960s, depended on scripting. His early work on developing what he proposed as a fail-safe method for teaching pre-schoolers, including groups of autistic and deaf children, was extensively trialled alongside other approaches in order to discover 'once and for all' the answer to the research question 'What is the best method of beginning reading instruction?'[8] During the 1964–65 school year, seven methods – including DI – were tested in first grade classrooms, involving 33,000 children and hundreds of teachers and schools. The study, recounted in fascinating detail in Engelmann's provocatively titled book, *Teaching Needy Kids in Our Backward System* (2007), is an example of what can be done with low-achieving schools, given a

[7] USAID: https://www.rti.org/brochures/improved-learning-outcomes-donor-financed-education-projects-rti%E2%80%99s-experience

[8] The trial was carried out by the United States Office of Education Cooperative Reading Studies, more commonly called The First Grade Studies.

 

well organised, well designed, somewhat narrowly defined methodology, using very committed implementers in self-selecting schools.

Engelmann's Direct Instruction, and its scripted Reading Mastery programme, continues to generate controversy and the research is by no means clear. Rightmyer et al (2006) studied practices and outcomes of teachers using five different schemes, including a scripted DI scheme (SRA Reading Mastery) and found that 'a balanced (phonics plus fluency plus comprehension) model does as well as a phonics-intensive model in the first year (as measured by a phonics or a reading measure) but a balanced program pays off with greater fluency and comprehension in the second year.' McIntyre et al (2008) examined 'achievement in scripted models against achievement in non-scripted models of early reading instruction', by comparing outcomes from the scripted SRA Reading Mastery with four other, non-scripted approaches. They found that 'no significant differences in achievement emerged between the children receiving instruction in scripted or non-scripted models.'

Eppley and Dudley-Marling (2018), having reviewed all available studies of Direct Instruction over the period 2002–13, concluded that 'DI's emphasis on low-level skills limits students' affordances for learning what readers actually do in the process of reading meaningful texts. From this point of view, DI not only does not work, it will likely exacerbate the learning difficulties endemic in high-poverty schools and special education classrooms where DI is most often used.'

It is likely that fail-safe, scripted methods are far from guaranteed to lead to the desired outcomes, at least in high resource contexts. Janine Remillard, a leading analyst of the role and impact of instructional materials in the US, cites Jerome Bruner (1977): 'A curriculum is more for teachers than it is for pupils. If it cannot change, move, perturb, inform teachers, it will have no effect on those whom they teach. It must be first and foremost a curriculum for teachers. If it has any effect on pupils, it will have it by virtue of having had an effect on teachers.'

Scripting implies that plans are implemented as planned. In practice, classroom conditions often make this impossible. Once again, in the US, Larry Cuban (2021) reviewed several studies into the difference between teachers' plans and the number of decisions they actually have to make during a lesson:

> In distinguishing between planning lessons and actual classroom teaching – what academics call "interactive" teaching – researchers found that teacher-driven routines governed the total number and frequency of decisions. However, these routines for managing groups of 25-35 while teaching content and skills — taking attendance, going over homework, doing seat-work, asking questions – were unpredictably interrupted by the unexpected (e.g., upset students, PA announcements, student questions, equipment breakdown). thus, spontaneous,

 

unplanned decisions had to be made. Both the expected and unexpected pile up teacher decisions.

A difficult question therefore must now be asked. Do Eppley and Dudley-Marling's findings regarding the teaching of 'low-level skills' in higher-income, well-resourced contexts such as the US perhaps not apply in LMICs? Could it be that in LMICs, where reading materials often consist only of a textbook and where teachers are working within a different classroom culture, a narrow emphasis on phonics, taught by a teacher who is following a script, might be the soundest approach?

A related question must be: is there a case for scripting early grade reading (and maths) lessons even if there is less of a case for other lessons? Or, on the other hand, might it be argued that, given the huge variation in the relative ages of children in grade 1 or kindergarten, and the likely effect this will have on the academic attainment of each child at this stage, there is more need for teachers to be able to respond flexibly to the different needs of their young students?

## Scripted lesson plans in LMICs

The recent, multi-agency-supported Global Education Evidence Advisory Panel's (GEEAP) *Best Buys* report (2020) looked at cost-effective evidence for improving learning in low- and middle-income countries. The Smart Buys section of the report includes 'Great Buys' and 'Good Buys'. Although the 'Great Buys' (which are meant to be both highly cost-effective *and* supported by a strong evidence base) include only one item[9], the report identifies several 'Good Buys', including 'Structured lesson plans with linked materials and ongoing teacher monitoring and training' (see also Angrist et al, 2020).

One of the studies to support this finding is from Gambia (Eble, 2019), where, 'in a randomized controlled trial across 169 rural villages … scripted lesson plans, after-school supplementary classes, and frequent monitoring and teacher coaching dramatically improved learning outcomes.' The complex Gambia intervention, which led to dramatic improvements in early grade reading outcomes, included scripted lesson plans but also included many other components – such as para teachers delivering after-school supplementary classes, frequent monitoring that focused on improving teacher practice (coaching), and 'improved curricular materials'. The number of elements therefore makes it difficult to isolate the effect of the lesson plans, and the study does not say what the improved curricular materials were, making it difficult to draw sound conclusions. Thomas (2020) questions the value of such 'multi-prong' RCTs, where the effect of any single element is impossible to isolate.

[9] Namely, 'Giving information on the benefits, costs, and quality of education'.

 

The research reported by Eble (2019) combined 'three well-known levers for improving learning'. The second of these levers – 'an improved, scripted curriculum targeted at students' current learning levels – was ascribed to four previous studies: Banerjee et al., 2007, 2017; Lakshminarayana et al., 2013; Piper et al., 2014). By bracketing scripted curriculum with targeted learning levels in this way, the Eble study gives the impression that the two elements are naturally linked in the four referenced studies. However, the Banerjee et al 2017 paper, which mainly describes the success of Teaching at the Right Level (TaRL) in achieving scale-up, in fact contains no discussion of scripted curriculum. Likewise, the Lakshminarayana et al paper describes an intervention called Cooperative-Reflective Learning (CRL), which does not appear to be at all scripted:

> CRL promotes learning through social interaction. Students of all levels of ability work together in structured groups toward a shared or common goal. It fosters peer learning, develops higher order thinking and leadership qualities, and makes children responsive to learning. The CRL pedagogy was used to reinforce the curriculum that children learnt in class during school hours and was tailored to students' class-specific needs and learning levels. Teaching methods based on CRL included self-learning materials, use of a group leader to lead the group and group work.

The third paper cited, by Piper et al (2014), reports on the PRiMR intervention in Kenya, which indeed uses scripted lessons. Piper's work will be discussed at more length below.

A multi-prong intervention that is similarly difficult to interpret can be seen in the Reader Booster Programme, implemented in Papua New Guinea (Macdonald & Vu, 2018), which found 'evidence that a teacher training approach providing highly scripted lesson plans can improve basic reading skills in a low-cost, remedial course format, especially for girls.' The Macdonald survey concludes with:

> A natural question is how much flexibility should teachers have within the curriculum in a developing country context? Highly structured approaches are appealing in contexts where teacher qualification and ability vary considerably. While in developed countries, the use of highly scripted lesson plans has received mixed reception, evaluations of interventions providing teachers with specific teaching methods and lesson plans have been shown to be successful in developing countries to improve early reading skills. The Reader Booster Programme adds to this evidence-base, demonstrating an intervention that is formatted as a remedial course aimed at improving specific reading skills.

This may be the case, but the design of the research may instead show that an intervention in which specific teachers were given specific training led to learning outcomes that were better than other schools where no training was given. We do not

 

know what would have happened if the training had used less scripted lessons, but which nevertheless followed a structured instructional sequence.

To conclude this review of widely-cited interventions from the past decade, Nava Ashraf, Abhijit Banerjee and Vesall Nourani (2020) report on an intervention designed to train science teachers in Uganda to 'teach students to learn like scientists'. The definition of structured pedagogy is narrower and the claims on its behalf are more qualified:

> structured pedagogy is based on the idea that for learning certain specific skills, it is important that the student goes through a set of fixed steps that are universally applicable. While this is likely to be an important feature of a high-quality educational experience, it is clear that it cannot be a substitute for promoting a deeper understanding and that this part of learning probably becomes important as students move to higher grades. To get to this, teachers need to get students to reflect on questions that do not, or sometimes cannot, have a textbook answer. To guide a learner through such an experience requires skill and human interaction through a mode that is unlikely to be replaced by a script.

## Scripted teachers' guides: what does research actually say?

Recent research has sought to isolate more narrowly the effect of scripting lessons for teachers in LMICs. Piper et al. (2018a) carried out a mixed methods survey of teacher's guides and classroom practice, which analysed the components of RTI-led projects from 2009 to 2017, including teachers' guides, classroom observations and teacher interviews. Their analysis – the first of its kind to look at the relationship between the content of teacher's guides and classroom practice – examined 34 guides from 13 countries (in 19 projects), as well as teachers' practice and teachers' own comments on teacher's guides in four sub-Saharan African countries. By including consultations with teachers, the study benefits from a valuable extra dimension.

The study had three research questions (RQs): RQ1. How does the level of scripting differ across projects? RQ2. Does the level of scripting have a relationship with how teachers use the teachers' guide? RQ3. Does the level of scripting impact the amount of time it takes for teachers to learn to do the routines correctly?

After presenting the three research questions, the authors describe how an additional question was added: 'Program impact, measured by gains in oral reading fluency, was compared with each program's scripting level to investigate whether there was a relationship between scripting and program impact' on the basis that 'The large number of RTI programs with teachers' guides and impact data allowed us to analyze the relationship between teachers' guide scripting and program impact.'

The study therefore looked in particular at whether varying the level of scripting in teacher's guides might be associated with the level of learning outcomes. It found that

 

'the key takeaway … is that structured teachers' guides improve learning outcomes, but that overly scripted teachers' guides are somewhat less effective than simplified teachers' guides that give specific guidance to the teacher but are not written word for word for each lesson in the guide.'

Finding a good balance between *modelling* and *scripting* appears to be the conclusion – an example of the Goldilocks principle.[10] Piper subsequently co-authored a blogpost with David Evans, which says of the above study: 'the guides that yielded the largest gains in student learning provided some detail for the teachers but not a word-for-word script'.[11] This therefore appears to be a well-evidenced, nuanced and useful finding. It provided something of a corrective to Piper's earlier study in Liberia (Piper and Korda, 2011), which had concluded that 'The experience of EGRA Plus makes quite clear that the use of scripted programs for teacher professional development can have significant impacts on reading outcomes… Moreover, increasing the scriptedness of the lesson plans increased the effectiveness between the midterm and final assessment.'

Piper's work has probably had more influence on the design of early grade literacy programmes than that of any other researcher in the past decade. Most of the examples of good teacher's guide design in Appendix A of the diagnostic tool for teacher's guides recently developed by the World Bank[12] are selected from teacher's guides produced by projects led by Piper in Liberia and Kenya. Piper and Korda's 2011 paper, although less nuanced than Piper et al. 2018, is cited by Kim and Davidson (2019) who stated that 'Scripted lessons have consistently been shown to be effective in improving students' learning.'

The findings of Piper et al (2018a) may seem to provide rather contrasting conclusions, namely:

- more 'structured' programmes are *more* effective.
- more scripted programmes are *less* effective

[10] https://www.hertsforlearning.co.uk/blog/goldilocks-principle-and-curriculum-design

[11] The uniqueness of this study of the impact of teacher's guides on classroom practice underlines how little research has been carried out, particularly in LMICs, into the relationship between textbooks and classroom practice and behaviours. This kind of study, using a close-up methodology such as that employed by Graham Nuthall in his ground-breaking work (Nuthall, 2007), would be tremendously useful to policymakers, publishers and writers alike.

[12] https://documents1.worldbank.org/curated/en/676201616097288750/pdf/Manual.pdf

 

However, it is also worth noting the methodology that the authors used to calculate the level of scripting. In order to analyse the degree of scripting in the teacher's guides, the authors used a measure of the *number of pages per lesson* and the *number of words per page* of each guide. From this, they devised a scripting index. This index therefore takes no account of the overall *amount of teaching content* in any teacher's guide, which could in some cases push the index up considerably, regardless of the level of scripting for each activity.

For example, the sample teacher's guide shown on pages 22–23 of the World Bank's Diagnostic Tool manual proposes a very demanding sequence of nine activities in a lesson of just over 30 minutes. The scripting index would probably score this sample as *highly scripted*. The overloaded content, which would put great pressure on the teacher to complete the activities in a very limited time, would almost certainly have a negative impact on learning outcomes.

Whether or not we agree that the data can demonstrate a direct relationship between the format of teacher's guides and the learning outcomes (and we should acknowledge that Piper et al. say they present the data 'cautiously'), the analysis shows that the concept of *structured programmes* cannot be linked directly to the concept of *scripting*.

In the same year, Piper et al (2018b) published a second significant paper, based on an RCT conducted in Kenya, in which they state that 'To our knowledge, to date, no studies have examined the impact of structured teachers' guides over and above the impact of other program components, an issue which we address below.' The authors placed their research in a wider, global context: 'Our current study also addresses the controversy regarding the effectiveness of an approach using structured teachers' guides provided to teachers. … Researchers have … documented negative impacts of scripted lessons on teacher motivation ... The potential for structured teachers' guides to assist teachers to change their teaching methods, however, might be particularly helpful in contexts like Kenya's, where teachers generally have less preparation and academic background than in Western contexts.'

The authors appear to equate structured lesson plans with scripting, although it is not clear:

> In the United States, critics have raised concerns about scripted lesson plans potentially limiting both the curriculum and the ability of teachers to adapt content to make it more relevant to their students... Researchers have also documented negative impacts of scripted lessons on teacher motivation… The potential for structured teachers' guides to assist teachers to change their teaching methods…, however, might be particularly helpful in contexts like Kenya's, where teachers generally have less preparation and academic background than in Western contexts.

 

However, in the study itself, the teacher's guides for the Kenya RCT consisted of '150 days of partially scripted lessons'. The provision of the guides was accompanied by training that 'focused on how the teachers could effectively implement the lessons utilizing the partially scripted approach in the PRIMR teachers' guides.'

The results of the research show a significant impact from providing teacher's guides, in addition to the coaching and textbooks on a 1:1 ratio.

Not surprisingly, given the additional burden that this would have put on the research design, the paper does not examine whether *other kinds of teacher's guides* might have led to the same impact as the partially scripted lessons.

It would be interesting to know the views of the teachers who were consulted, on the apparent findings of the paper. For example, what relation might there be to classroom discipline? Why might scripted or semi-scripted lessons be more effective than their own lesson plans? Would they *normally* make intensive use of teacher's guides? If not, what was different on this occasion?

Other factors in this paper also need to be considered. Piper at al (2018b) do not describe the potential effect of the materials-focused training that accompanied the provision of the teacher's guides to the third study group. The paper says only that 'The trainings focused on how the teachers could effectively implement the lessons utilizing the partially scripted approach in the PRIMR teachers' guides.'

Recent evaluations of LMIC interventions elsewhere have come to different conclusions, and have not found that more scripting is more effective. Instead, long-term research in South Africa suggests that the effectiveness of standard lesson plans depends on getting the answers to the following questions right[13]:

> Are the curriculum materials or structured lesson plans which teachers are requested or encouraged to follow of high quality, with appropriate scope and depth of knowledge? Is the mode of authority non-coercive and supportive of teachers' engagement with the prescribed knowledge? And do teachers have educationally sound reasons for following or adapting the materials?

To this, we might add Anderson-Levitt and Diallo's (2003) observation from their research in Guinea that 'Ironically, it seemed to us that teachers who followed the Ministry's suggested lesson plan most faithfully included the three or four most competent and confident teachers … They gave the impression that to follow the script carefully and coherently required reflection before and during class.'

Funda Wande (*Reading for Meaning*) provides comprehensive teaching and learning resources and training for literacy and maths teaching in South Africa, with a balance between modelling and scripting, in which lesson plans are built around 15, 20, and 30 minute chunks, much like many teachers would plan their own lessons in

[13] https://link.springer.com/content/pdf/10.1007/s10833-018-9318-3.pdf

 

an easy-to-refer-to way, rather than in the form of scripting.[14] The evaluation of the Funda Wande programme by Witwatersrand University (Shalem et al, 2018) compared its approach with other early grade reading interventions in South Africa, some of which used a more scripted approach:

> Funda Wande has opted for a completely different approach, which centralises the understanding of how the acquisition of reading takes place. Exposition of all the elements of the process and how these interrelate and integrate makes it clear to teachers from the beginning why they are expected to change their teaching practice and what they may expect if they do it well.
>
> Instead of scripted lesson plans … Funda Wande works with a concise booklet and a programme of 19 videos. The course and the videos are sequentially ordered according to two ordering principles: First (epistemic), propositional knowledge comes first and then applied. Second (Pedagogical) demonstration of what 'gradual release' means. The course sparks discussion between professionals across line of authority - teachers, subject advisors and the master teacher. In this modality the assumption is that the teachers will be able to emulate the presenters once they have internalised conceptually a theory of reading and observed the modelling of its key reading activities. By the end of the course, teachers are expected to be able to talk confidently about teaching reading and the privileged repertoire associated with it and absorb enough conceptual knowledge to allow for meaningful engagement with learners when activities are done in the classroom.

Nic Spaull, the founder of the Funda Wande approach, is not opposed to scripted lessons *per se*. Commenting on the Bridge International approach, he says: 'Bridge International Academy offers a school-in-a-box solution where teachers are trained for 7 weeks and offer scripted lessons in a highly structured and specified way. Most educationists will hate it but I just think to myself – what kind of education would these kids be receiving if they weren't at these pop-up schools? Sometimes the counter-factual is far worse than even a below-average solution.'[15]

A more recent evaluation of the Funda Wande project contains a passage that, while lengthy, is probably essential for interpreting the results of all such interventions:

> … the variation in effectiveness of structured pedagogic interventions observed in the literature are not only a function of the programme type's applicability and transferability to different contexts (referring to the programmes external validity – see Bates and Glennerster, 2017; Pritchett and Sandefur, 2015). One specific programme is also only one realisation in a class of possible iterations under the

[14] https://fundawande.org/img/cms/resources/FW%20Lesson%20PLan%20(Gr%201%20Term%201%20ENG)%20Fial%20Print.pdf

[15] https://nicspaull.com/2013/12/09/thank-you-madiba-for-changing-all-the-rules/

 

> same umbrella class of intervention ("teacher incentives", "providing textbooks", "coaching", etc.). The latter, which Nadel and Pritchett (2016) call a class of programme's design space, refers to the multiple design elements and potentially many possible choices within each of those design elements. Together, the role of contextual factors and the specific design- and implementation details of programmes could explain why multiple school based interventions that have succeeded at the pilot and proof of concept stage (often implemented with high fidelity by committed non-governmental organisation (NGO) implementers and at a smaller, more manageable scale) often fail to reproduce positive effects when replicated at scale (as is generally required by governments) (see Bold et al., 2018); or why the same program implemented by the same actor across different countries yield different outcomes.[16] (italics added)

## What might a good teacher's guide development process look like?

Before making any suggestions about how teacher's guides might be written, it is worth taking a step back and offering a reminder that all of this discussion is based on a critical assumption – that the teacher's guides will actually reach the teachers and will be used by them. From personal experience and from anecdotal evidence of many colleagues, this is not always the case. Many teacher's guides in LMICs are neglected. What is not known is whether the quality of a teacher's guide is the main factor in whether it will be used or not, or whether teachers in many cases do not even have access to the guide. In an in-depth study of the challenges of providing teaching and learning materials in Sub-Saharan Africa (SSA), Read (2015) reported that 'a leading editor of textbooks for use in SSA recently commented in a discussion on appropriate TLMs [Teaching and Learning Materials] that she had never met a teacher who had used any of the teachers' guides designed to accompany and support the student textbooks.'

Furthermore, the printed teacher's guide may not be the most efficient way of communicating guidance or lesson plans to teachers in contexts with limited resources. Several initiatives in low resource contexts have shown that text messages to teachers can be effective (e.g. Kaleebu et al., 2013), and can also complement printed guides.

A second point to note is that almost all of the discussion in this paper relates to research into the use of lesson plans and teacher's guides for literacy and numeracy initiatives. With the enormous attention to early grade teaching in educational

[16] https://fundawande.org/img/cms/news/Impact%20Evaluation%20of%20Funda%20Wande%20Coaching%20Intervention%20Mb §idline%20Findings.pdf

 

interventions in the past decade it is sometimes possible to forget that there are many other periods on a school timetable.

However, if we accept that both the *presence* and the *quality* of a teacher's guide may have an impact on learning outcomes in teaching early grade literacy and numeracy, we may consider the development of teacher's guides as part of a theory of change[17] or 'theory of improvement'.[18]

Theories of change require us to engage with teachers' own theories of action. Here, Viviane Robinson's observation, although she is writing for an OECD context, is relevant: '*Addressing teachers' theories of action is at the heart of improvement.* However, it is important to recognise that, for many teachers, their theory of action will be tacit, and they may find difficult to express and explain it.'[19] (Italics added)

Therefore, any studies of the effectiveness of teacher's guides should – as demonstrated by Piper et al (2018a) – engage with practising teachers. Similarly, the development of new teacher's guides, whatever the level of guidance or scripting that is to be included, should also engage with teachers rather than bypass them. Teachers' ability to respond to classroom needs cannot be discounted. Piper et al's paper reports that teachers frequently modified the guides they were provided with: 'The most frequent explanation for a modification was related to the students' needs. The teachers modified their lessons because they were concerned that at least some students in their classroom were not academically ready for the lesson.'

A theory of change or improvement that communicates to teachers that policymakers have no confidence in them is unlikely to win over those on whom the policymaker counts most to make the improvements happen. A good consultation process with practising teachers will also reveal useful information about page sizes, binding, the use of images of the student's textbook within the guide, as well as very practical matters relating to the weight of the publication and whether teachers like to have it with them in the classroom or prefer to consult it before a lesson.

Ball and Cohen (1996) proposed that knowledge of the intent behind curricular designs enables teachers to make decisions that reflect these aims:

> Though much about students is particular to individuals, much is not. Teachers' guides could help teachers to learn how to listen to and interpret what students

[17] 'A theory of change is a purposeful model of how an initiative—such as a policy, a strategy, a program, or a project—contributes through a chain of early and intermediate outcomes to the intended result. Theories of change help navigate the complexity of social change.' (Serrat, 2017)

[18] Viviane Robinson prefers the term 'theory of improvement' because the objective of educational interventions is improvement, not simply 'change'.

[19] https://theeducationhub.org.nz/reducing-change-to-increase-improvement/

 

> say, and to anticipate what learners may think about or do in response to instructional activities. To do so, teachers' guides could offer examples of a range of student work in the context of the material at hand, and comment on the meaning of the work, instead of simply stating lamely that 'answers will vary'.

They go on to add:

> Materials could be designed to place teachers in the center of curriculum construction and make teachers' learning central to efforts to improve education, without requiring heroic assumptions about each teacher's capacities as an original designer of curriculum.

Such information would therefore not predict specific student responses, but would help teachers to prepare for some of the uncertainties of teaching. Ball and Cohen conclude by saying that 'better curriculum can only be designed if it is designed to help teachers operate more thoughtfully and effectively in each of these domains'.

Given that much of the research into the links between teaching and learning materials and improvements in learning outcomes has taken place in the area of mathematics, it is useful finally to look at what maths education research has to say about teacher's guides. There is more research into the impact of teaching and learning materials (especially textbooks) in the domain of mathematics than in other disciplines.[20]

In an insightful paper that reflects the intense study of the writing of maths textbooks and teacher's guides in China, Li (2010) calls for teacher's guides to be 'written in such a way that can help teachers understand the mathematics curriculum and the topics in each volume, rather than a quick classroom instruction guide.' In her view, the guide can help the teacher understand the rationale for the way the textbook presents the content. This approach is echoed in Remillard (2000), who writes 'In addition to suggesting to teachers what they might say or do, text writers need to talk to teachers about these suggestions, about the mathematical and pedagogical ideas underlying them, and about students' likely reactions to them. In doing so, they need to make their agendas and perspectives accessible to teachers.' Remillard et al (2014) add that, 'Stein and Kaufman (2010) found that teachers' preparation for teaching using their textbooks correlated with the quality of instruction. In particular, teachers who read descriptions in the teacher's guide that articulated the central mathematical idea of the lesson were more likely to enact tasks in ways that reflected the goals of the curriculum.'

[20] For example, see Ann-Katrin van den Ham and Aiso Heinze (2018). Does the textbook matter? Longitudinal effects of textbook choice on primary school students' achievement in mathematics, in Studies in Educational Evaluation 59, 133–140.

 

Scripting seeks to provide teachers with professional development by training them in routines that are believed to be effective. It places teachers in the role of learners. However, in the same way that students learn best when they are gradually scaffolded to acquire knowledge and skills, teachers' learning also needs to be scaffolded. When scripting helps teachers to develop their pedagogical understanding so that they no longer depend on a script, there is surely a good rationale for providing such scripts. However, such scripts should form part of an approach to curriculum and professional development in which teachers' theories of action – as Vivian Robinson puts it – are actively sought, developed and nurtured. Otherwise, we may be treating teachers as rote learners.

## References

The following references have all been consulted, but not all have been cited.

Anderson-Levitt, K.M. and Diallo B.B. (2003). Teaching by the Book in Guinea. In: Anderson-Levitt, K.M. (eds) Local Meanings, Global Schooling. Palgrave Macmillan, New York. https://doi.org/10.1057/9781403980359_4

Angrist, N., Evans, D.K., Filmer, D., Glennerster, R., Halsey Rogers, F. and Sabarwal, S. (2020). How to Improve Education Outcomes Most Efficiently? A Comparison of 150 Interventions Using the New Learning-Adjusted Years of Schooling Metric, Policy Research Working Paper Series 9450. The World Bank. https://openknowledge.worldbank.org/bitstream/handle/10986/34658/How-to-Improve-Education-Outcomes-Most-Efficiently-A-Comparison-of-150-Interventions-Using-the-New-Learning-Adjusted-Years-of-Schooling-Metric.pdf?sequence=1&isAllowed=y

Ashraf, N., Banerjee, A. and Nourani, V. (2020). Learning to Teach by Learning to Learn. Job Market paper, November 13, 2020. http://economics.mit.edu/files/20802

Ball, D.L. and Cohen, D.K. (1996). Reform by the Book: What Is – or Might Be – the Role of Curriculum Materials in Teacher Learning and Instructional Reform? Educational Researcher, 25(9) https://journals.sagepub.com/doi/pdf/10.3102/0013189X025009006

Bashir et al. (2018). Facing forward: schooling for learning in Africa. World Bank. https://openknowledge.worldbank.org/bitstream/handle/10986/29377/9781464812606.pdf?sequence=14&isAllowed=y

Chabbott, C. (2014). *Institutionalizing Health and Education for All*. Teachers College Press.

Chakera, S., Haffner, D., Harrop, E. (2020) UNICEF Eastern and Southern Africa Region Working Paper – Structured Pedagogy: For Real-Time Equitable

 

Improvements in Learning Outcomes. UNICEF: Nairobi https://www.unicef.org/esa/media/7511/file/ESA-Structured-Pedagogy-2020.pdf

Cuban, L. (2021). The Complexity of Teacher Decision-making. (blogpost) HTTPS://LARRYCUBAN.WORDPRESS.COM/2021/04/28/THE-COMPLEXITY-OF-TEACHER-DECISION-MAKING/

Dubeck, M.M., Jukes, M.C.H., Brooker, S.J., Drake, T.L., and Inyega, H.N. (2015). Designing a program of teacher professional development to support beginning reading acquisition in coastal Kenya, *International Journal of Educational Development 41*. https://www.sciencedirect.com/science/article/pii/S0738059314001473

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B. and Osher, D. (2020) Implications for educational practice of the science of learning and development, Applied Developmental Science, 24(2), 97-140. https://www.tandfonline.com/doi/full/10.1080/10888691.2018.1537791

Eble, A. et al. (2019). How much can we remedy very low learning levels in rural parts of low-income countries? Impact and generalizability of a multi-pronged para-teacher intervention from a cluster-randomized trial in The Gambia. CDEP-CGEG Working Paper Series, no. 79. https://cdep.sipa.columbia.edu/sites/default/files/cdep/WP79Eble.pdf

Ede, A. (2006) Scripted Curriculum: Is it a Prescription for Success? *Childhood Education, 83*(1). https://www.tandfonline.com/doi/pdf/10.1080/00094056.2006.10522871?needAccess=true

Engelmann, S. (2007). *Teaching Needy Kids in Our Backward System.* ADI Press.

Eppley, K. and Dudley-Marling, C. (2018). Does direct instruction work? A critical assessment of direct instruction research and its theoretical perspective, *Journal of* Curriculum and Pedagogy. https://www.tandfonline.com/doi/full/10.1080/15505170.2018.1438321

Evans, D, and Piper, B. (2020). Guiding Teachers Rather than Scripting Them. Center for Global Development. https://www.cgdev.org/blog/guiding-teachers-rather-scripting-them

Friedlander, E. and Goldenberg, C. (2016). *Literacy Boost in Rwanda: Impact Evaluation of a Two Year Randomized Control Trial.* Stanford Graduate School of Education. https://www.savethechildren.org/content/dam/usa/reports/ed-cp/rwanda-2-year-impact-evaluation.pdf

Hummel, J.H., Venn, M.L. and Gunter, P.L. (2004). In Teacher-Made Scripted Lessons. In Daniel J. Moran and Richard W. Malott (Eds.), *Evidence-Based Educational Methods*. Academic Press. https://reader.elsevier.com/reader/sd/pii/B9780125060417500085?token=6051FFBBA6F81A680374D779CAFAA2E5BF89BE6ABC0F21F352BE7

 

4F5E9D83F97FC789F522A25B820F02337CF5ABB9ACC&originRegion=eu-west-1&originCreation=20210403073312

Kaleebu, N., Gee, A., Maybanks, N., Jones, R., Jauk, M., and Watson, A.H. (2013). SMS story: Early results of an innovative education trial. *Contemporary PNG Studies, 19,* 50–62. https://search.informit.org/doi/abs/10.3316/INFORMIT.847057428946986

Kim, Y-S G. and Davidson, M. (2019). Promoting Successful Literacy Acquisition through Structured Pedagogy. USAID. https://www.globalreadingnetwork.net/resources/promoting-successful-literacy-acquisition-through-structured-pedagogy

Lakshminarayana, R., Eble, A., Bhakta, P., Frost, C., Boone, P., Elbourne, D., et al. (2013). The Support to Rural India's Public Education System (STRIPES) Trial: A Cluster Randomised Controlled Trial of Supplementary Teaching, Learning Material and Material Support. *PLoS ONE 8*(7). https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0065775#pone.0065775.s004

Li, J. (2004). Thorough Understanding of the Textbook – A Significant Feature of Chinese Teacher Manuals. In L. Fan, N.Y. Wong, J. Cai and S. Li (Eds.), *How Chinese Learn Mathematics: Perspectives from Insiders.* World Scientific Publishing.

Macdonald, K. and Vu, B.T. (2018). A Randomized Evaluation of a Low-Cost and Highly Scripted Teaching Method to Improve Basic Early Grade Reading Skills in Papua New Guinea. World Bank Policy Research Working Paper 8427. https://openknowledge.worldbank.org/bitstream/handle/10986/29833/WPS8427.pdf?sequence=1&isAllowed=y

Matić, L.J. and Gracin, D.G. (2021). How do teacher guides give support to mathematics teachers? Analysis of a teacher guide and exploration of its use in teachers' practices, Research in Mathematics Education, 23(1), 1–20 https://www.tandfonline.com/doi/citedby/10.1080/14794802.2019.1710554?scroll=top&needAccess=true

McIntyre, E., Rightmyer, E.C. and Petrosko, J.P. (2008). Scripted and Non-Scripted Reading Instructional Models: Effects on the Phonics and Reading Achievement of First-Grade Struggling Readers, *Reading & Writing Quarterly, 24*(4). https://www.tandfonline.com/doi/full/10.1080/10573560802004464?needAccess=true

Mili, and Winch, C. (2019). Teaching through textbooks: Teachers as practitioners of a discipline? *Theory and Research in Education, 17*(2), 181–201. https://doi.org/10.1177/1477878519862547

Milner, H.R. (2013). Policy Reforms and De-professionalization of Teaching. Boulder, CO: National Education Policy Center. https://nepc.colorado.edu/sites/default/files/pb-deprof-teaching_0.pdf

 

Nayak, A. and Upreti, P. (2020). Demystifying the Science of Teaching: A 'Structured Pedagogy' Approach to Improving Foundational Learning. Central Square Foundation blogpost, October 2020. https://centralsquarefoundation.org/articles/demystifying-the-science-of-teaching-a-structured-pedagogy-approach-to-improving-foundational-learning.html
Nuthall, G. (2007). *The Hidden Lives of Learners*. NZCER.

Orr, D., Westbrook, J., Pryor, J., Durrani, N., Sebba, J., and Adu-Yeboah, C. (2013). What are the impacts and cost-effectiveness of strategies to improve performance of untrained and under-trained teachers in the classroom in developing countries? London: EPPI Centre, Social Science Research Centre, Institute of Education, University of London. https://www.globalreadingnetwork.net/sites/default/files/media/file/Undertrained_teachers_2013_Orr.pdf

O'Sullivan, M. (2003). The Development of Effective Strategies to Teach Reading among Unqualified Primary Teachers in a Developing Country Context, *International Journal of Early Years Education, 11*(2), 129-140 https://www.tandfonline.com/doi/pdf/10.1080/09669760304702?needAccess=true

Piper, B. and Korda, M. (2011). EGRA Plus: Liberia. Program Evaluation Report. Research Triangle Park, NC: RTI International. https://files.eric.ed.gov/fulltext/ED516080.pdf_Piper, B., Zuilkowski, S.S. and Mugenda, A. (2014). Improving reading outcomes in Kenya: First-year effects of the PRIMR Initiative. *International Journal of Educational Development, 37*, pp. 11-21. https://www.sciencedirect.com/science/article/pii/S0738059314000145?via%3Dihub

Piper, B., Sitabkhan, Y., Mejia, J., and Betts, K. (2018a). Effectiveness of teachers' guides in the Global South: Scripting, learning outcomes, and classroom utilization. *RTI*. https://www.rti.org/rti-press-publication/teachers-guides-global-south

Piper, B., Zuilkowski, S.S., Dubeck, M., Jepkemei, E. and King, S.J. (2018b). *Identifying the essential ingredients to literacy and numeracy improvement: Teacher professional development and coaching, student textbooks, and structured teachers' guides,* World Development, 106, pp. 324-336 https://www.sciencedirect.com/science/article/pii/S0305750X18300287

Read, T. (2015). *Where Have All the Textbooks Gone?: Toward Sustainable Provision of Teaching and Learning Materials in Sub-Saharan Afr*ica. World Bank. https://openknowledge.worldbank.org/bitstream/handle/10986/22123/9781464805721.pdf?sequence=1&isAllowed=y

Remillard, J.T. (2000). *Can curriculum materials support teachers' learning?* Elementary School Journal, 100(4). https://www.journals.uchicago.edu/doi/abs/10.1086/499645

 

Remillard, J.T., and Reinke, L.T. (2012). *Complicating scripted curriculum: Can scripts be educative for teachers?* https://icubit.gse.upenn.edu/sites/default/files/RemillardReinkeAERA2012.pdf

Remillard, J.T., Harris, B. and Agodini, R. (2014). *The influence of curriculum material design on opportunities for student learning.* ZDM Mathematics Education, 46, 735–749. https://link.springer.com/article/10.1007/s11858-014-0585-z#citeas

Remillard, J., Van Steenbrugge, H., and Bergqvist, T. (2014). A Cross-Cultural Analysis of the Voice of Curriculum Materials, talk presented at International Conference on Mathematics Textbook Research and Development, 29-31 July 2014, University of Southampton, UK. https://icubit.gse.upenn.edu/sites/default/files/RVB%20ICMT2014%20Longer%20paper%20Version_0.pdf

Remillard, J.T., Reinke, L.T., and Kapoor, R. (2019). What is the point? Examining how curriculum materials articulate mathematical goals and how teachers steer instruction, International Journal of Educational Research, 93, 101–117. https://www.sciencedirect.com/science/article/pii/S0883035518305810?via%3Dihub

Rezat S., Visnovska J., Trouche L., Qi C., and Fan L. (2018). Present Research on Mathematics Textbooks and Teachers' Resources in ICME-13: Conclusion and Perspectives. In: Fan L., Trouche L., Qi C., Rezat S., Visnovska J. (eds) Research on Mathematics Textbooks and Teachers' Resources. ICME-13 Monographs. Springer, Cham.

Rieth, H. and Evertson, C. 1988. Variables Related to the Effective Instruction of Difficult-to-Teach Children, Focus on Exceptional Children 20(5), 1–8.

Rightmyer, E.C, McIntyre, E. and Petrosko, J.M. (2006). Instruction, development, and achievement of struggling primary grade readers, Literacy Research and Instruction, 45(3). https://www.tandfonline.com/doi/pdf/10.1080/19388070609558449?needAccess=true

Robinson, V. (2017). Reduce Change to Increase Improvement. Corwin

Rosenshine, B. (2009). The Empirical Support for Direct Instruction. In S. Tobias & T. M. Duffy, *Constructivist Instruction.Success of Failure?* Routledge.

Rosenshine, B. (2010). Principles of Instruction. IBE. http://www.ibe.unesco.org/fileadmin/user_upload/Publications/Educational_Practices/EdPractices_21.pdf

RTI (2014?): Improved Learning Outcomes in Donor-Financed Education Projects: RTI's Experience. https://www.rti.org/brochures/improved-learning-outcomes-donor-financed-education-projects-rti%E2%80%99s-experience

Serrat, O. (2017). Proposition 24: Theories of Change, in Oliver Serrat (Ed.) Knowledge Solutions: Tools, Methods, and Approaches to Drive Organizational

 

Performance. Springer. https://www.adb.org/sites/default/files/publication/704196/powering-learning-society-during-age-disruption.pdf

Shalem, Y. (2017). Scripted lesson plans: What is visible and invisible in visible pedagogy? In Barrett, B., Hoadley, U., and Morgan, J. (Eds.) Knowledge, Curriculum and Equity: Social realist perspectives. Routledge.

Shalem, Y. et al. (2018) Teacher autonomy in times of standardised lesson plans: The case of a Primary School Language and Mathematics Intervention in South Africa. Journal of Educational Change 19(2). https://www.researchgate.net/publication/322986003_Teacher_autonomy_in_times_of_standardised_lesson_plans_The_case_of_a_Primary_School_Language_and_Mathematics_Intervention_in_South_Africa

Shalem, Y., Dawba, A., and Koornhof, H. (2018b) Funda Wande: Teaching Reading in the Foundation Phase. University of the Witwatersrand, Johannesburg. https://fundawande.org/img/cms/news/Shalem%20et%20al%202018%20Funda%20Wande%20training%20report%20(Draft%2019%20Oct%202018)%20(1).pdf

Sherrington, T. (2019). Rosenshine's Principles in Action. John Catt.

Snilstveit, B. et al. (2015). Interventions for improving learning outcomes and access to education in low-and middle-i*ncome countries: a systematic review.* 3ie Systematic Review 24 https://www.3ieimpact.org/sites/default/files/2019-01/SR24-education-review_2.pdf

Speizer, I.S., Mandal, M., Xiong, K. et al. (2020). Impact evaluation of scripted lesson plans for HIV-related content in a life orientation curriculum: results from two provinces in South Africa. BMC Public Health 20, 1542 https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-020-09640-2

Stein, M.K., and Kaufman, J.H. (2010). Selecting and Supporting the Use of Mathematics Curricula at Scale. American Educational Research Journal, 47(3)

Stenhouse, L. (1975). An introduction to Curriculum Research and Development. Heineman.

Thomas, G. (2020). Experiment's persistent failure in education inquiry, and why it keeps failing. *British Educational Research Journal* (not yet formally published) https://bera-journals.onlinelibrary.wiley.com/doi/epdf/10.1002/berj.3660

Tishauser, J. (2019). *Graham Nuthall: Educational Research at its Best*. John Catt Educational. https://cloud.3dissue.com/2389/3124/219883/researchED3/offline/download.pdf

Vinson, K.D. and Wayne Ross, E. (2004). Defending Public Schools, Volume III: Curriculum Continuity and Change in the 21st Century. Praeger. https://www.academia.edu/807903/Defending_Public_Schools_Curriculum_Continuity_and_Change_in_the_21st_Century_DPS_Volume_3_

Wang, B., Deveaux, L., Knowles, V. *et al.* (2015). Fidelity of Implementation of an Evidence-Based HIV Prevention Program among Bahamian Sixth Grade Students.

 

*Prev Sci 16*, 110–121 https://link.springer.com/article/10.1007%2Fs11121-014-0486-y#citeas

Westbrook, J. et al. (2013). Pedagogy, Curriculum, Teaching Practices and Teacher Education in Developing Countries: Final report. University of Sussex – DFID. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/305154/Pedagogy-curriculum-teaching-practices-education.pdf

Wolf, S., Turner, L.T., Jukes, M.C.H. and Dubeck, M.M. (2018). Changing literacy instruction in Kenyan classrooms: Assessing pathways of influence to improved early literacy outcomes in the HALI intervention, *International Journal of Educational Development, 62.* https://www.poverty-action.org/sites/default/files/publications/Wolf%20Turner%20Jukes%20Dubeck_2018_IJED%5B1%5D.pdf

World Bank. (2011). Information for Accountability: Impact Evaluation of EGRA and teacher training. http://documents1.worldbank.org/curated/en/772611468057237703/pdf/724570WP0Liber0012020120Box371917B.pdf

World Bank. (2020). Cost-effective approaches to improve global learning: What does recent evidence tell us are 'Smart Buys' for improving learning in low- and middle-income countries? http://documents1.worldbank.org/curated/en/719211603835247448/pdf/Cost-Effective-Approaches-to-Improve-Global-Learning-What-Does-Recent-Evidence-Tell-Us-Are-Smart-Buys-for-Improving-Learning-in-Low-and-Middle-Income-Countries.pdf

World Bank. (2021). Teacher's Guide Diagnostic Tool. Washington, DC: The World Bank. http://documents1.worldbank.org/curated/en/676201616097288750/pdf/Manual.pdf

 