A Systematic Review of the Implementation of Learner-Centered Pedagogy in Low- and Middle-Income Countries

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Abstract

This article provides a comprehensive descriptive overview of the implementation of learner-centred pedagogy (LCP) in low- and middle-income countries. Considerable time, money and resources have been invested in LCP in many countries worldwide, and yet we still lack a comprehensive body of evidence regarding its implementation and outcomes. This systematic review aimed at going beyond the limitations of individual studies, confined by time, context and samples, in order to offer stronger applicability and generalisability to wider contexts. The dataset for analysis consisted of 94 journal articles published between January 2001 and December 2020, selected based on explicit inclusion/exclusion criteria. A team of three researchers utilised EPPI-Reviewer and QSR NVivo to import, screen, and analyse the texts. The literature on LCP implementation was mapped by key variables such as country, educational setting, study participants, and methods. Firstly, the study found that despite LCP being explicitly promoted in numerous contexts, most classrooms were still predominately teacher-centred. Secondly, the review identified a wide range of constraints and enablers of LCP implementation, spanning across the individual, classroom, school, policy, and wider society levels. Thirdly, although several positive and negative outcomes of LCP emerged from the study, the review found that the objective evidence on LCP outcomes was somewhat limited, indicating that there is an urgent need for additional research to evaluate LCP outcomes. A conceptual framework of LCP implementation is presented, and implications for policy and future research are discussed.

Keywords: learner-centred, student-centred, systematic review, low-/middle-income countries.

Context and Implications

Rationale for this study

Despite the worldwide spread of learner-centred pedagogy (LCP), we currently lack a comprehensive body of evidence regarding its implementation and outcomes.

Why the new findings matter

The findings will help educational stakeholders decide *whether* and *how* LCP-related reforms should continue, based on the enablers, constraints and outcomes of LCP implementation identified in the review.

Implications for educational researchers and decision-makers

Firstly, educational researchers will benefit from having a clear summary of existing research which identifies opportunities to further enhance our knowledge; in particular, there is an important gap in the literature in terms of research on the outcomes of LCP implementation over time. Secondly, educational decision-makers will be better placed to decide a) the extent to which they should continue to allocate limited resources towards the implementation of LCP-related reforms; and b) how they may learn from the cumulative findings of existing case studies to increase the chances of successful implementation.

Introduction

This article provides a comprehensive descriptive overview of the implementation of learner-centred pedagogy (LCP) in primary and secondary educations in low- and middle-income countries. Learner-centred pedagogy, also known as learner- or student-centred education, is a broad and all-encompassing approach to teaching and learning which may include one or more of the following elements: (1) *Active participation*: learners "learn by doing," both individually and through their interactions with others; (2) *Adapting to needs*: learning is tailored to meet learner needs, and, where possible, it builds on learners' current knowledge and experiences; (3) *Autonomy*: learners are encouraged to work independently both inside and outside the classroom and to develop strategies to help them learn more effectively in the future; (4) *Relevant skills*: learners develop knowledge and skills that they are likely to need in real-world situations, including "higher order" skills such as creativity and critical thinking; (5) *Power sharing*: learners are given more choice and control over the content and process of their learning; and (6) *Formative assessment*: learners are assessed not only to be given a grade but they are also supported in their overall learning development (Bremner, 2021).

Although LCP is also present in high-income countries (Cornelius-White, 2007; Schweisfurth, 2013), it has gained immense policy traction in low- and middle-income countries in the past few decades. Under the Education for All (EFA) initiative led by large aid agencies (UNESCO et al., 2015; UNICEF, 2009), LCP has dominated the global educational discourse based on the premise that it will improve education systems and outcomes in low- and middle-income countries. The EFA movement highlighted the necessity of reforming the curriculum to reflect cultural underpinnings and learner needs, and the importance of making the teaching and learning process learner-centred (World Bank, 2000). By focusing on each student's needs and interests, LCP may be seen to be effective in

accomplishing the intended outcomes of individual development and equal rights. EFA has thus urged many sub-Saharan African countries to adopt new curricula that promote LCP for primary education as official pedagogy in schools (UNESCO, 2007). Following the recommendation made by donor organisations, many governments in low- and middle-income countries have adopted LCP concepts and practices in their educational policies and programmes. Examples include the post-apartheid curriculum reform in South Africa, which emphasises a learner-centred and participatory approach (Stoffels, 2005) and the adoption of LCP in the Namibian Life Science curriculum (Chisholm & Leyendecker, 2008).

However, despite the widespread introduction of LCP in low- to middle-income countries, empirical evidence on LCP implementation presents an obscure picture in terms of the degree of LCP implementation. Some scholars have reported success stories of LCP implementation (e.g., Lattimer & Kelly, 2013 in Kenya; Thompson, 2013 in Nigeria), whilst others report considerable challenges, for example due to material and human resource scarcity (Pontefract & Hardman, 2005; Sifuna & Kaime, 2007), lack of qualified teachers (O'Sullivan, 2004; Vavrus, 2009), and system incompatibility to LCP principles (Frost & Little, 2014; World Bank, 2008).

Research has begun to explore some of the possible relationships between LCP implementation and its outcomes. For example, based on the cognitive justification that LCP will bring about improved learning outcomes (Schweisfurth, 2013), Ngware et al. (2014) and Layne et al. (2008) demonstrated positive relationships between LCP implementation and academic performance of students. Conversely, Alexander (2008) and Schweisfurth (2013) point out that students' academic achievement in cross-national examinations – including the Programme for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS) – have not shown clear positive relationships in Western countries. Such an incomplete picture of the effectiveness of LCP implementation

has led some scholars to question the appropriateness and ethics of promoting LCP in non-Western countries without empirical backing (Guthrie, 2017; Nguyen et al., 2009).

Previous Reviews of Research on LCP in Low- and Middle-Income Countries

Most studies on LCP implementation in low- and middle-income countries have taken the form of an individual case study from one single country (Schweisfurth, 2011). Although these case studies provide rich, contextualised findings, they are inevitably confined to time, context, and samples, which may raise doubts about their relevance when applied to other settings. In contrast, systematic reviews of literature, whilst potentially missing out on some of the nuance and complexity of individual studies, tend to provide a more complete picture on a particular topic, with stronger transferability to wider contexts (Davies, 2000; Gough et al., 2012).

To our knowledge, two comprehensive reviews already exist on LCP implementation in low- and middle-income countries. Schweisfurth (2011) analysed 72 articles published in the *International Journal of Educational Development*, and identified four main factors hindering LCP implementation: (1) unrealistic expectations of change implementation; (2) practical and material constraints; (3) cultural expectations conflicting with LCP principles; and (4) power relationships between diverse stakeholders. Schweisfurth's review highlights that the recent academic discourse on LCP in developing countries has leant towards negativity, with relatively few success stories and numerous problems in implementation.

Another extensive review was carried out by Guthrie (2021a, 2021b). Based on 1112 publications found through internet searches, Guthrie surveyed trends of classroom pedagogies in 142 countries. In a stark summary of the findings, Guthrie reported that there had not been a single success story in any of the 142 countries. He argued that most countries in the global South have cultivated cultural dimensions which contradict the key principles of LCP, and suggested that education systems would be better off improving the effectiveness of

teacher-centred, "formalistic" approaches, rather than continuing to try to implement learner-centred, "progressivist" ones.

Although the previous two reviews summarised and analysed findings of individual research studies, there were certain limitations of each. The studies reviewed by Schweisfurth (2011) came from one particular journal, *International Journal of Educational Development*. Several other journals in the field – *Comparative Education*, *Comparative Education Review* and *Compare: A Journal of Comparative and International Education*, to name just three – have published research on LCP-related topics; therefore, excluding them from a review runs the risk of missing key research on LCP implementation. Guthrie (2021a) obtained the literature for review through a wide variety of sources ranging from Google Scholar, ResearchGate and aid agencies' websites. Journal articles, however, were excluded if they required payment for access. This might engender a similar problem to that of Schweisfurth (2011), given that important scholarly works that may have significantly contributed to the field may have been excluded.

A further point to consider is that the two existing reviews did not explicitly outline the selection criteria of the literature, leaving issues of quality control somewhat vaguely in the hands of the authors. Schweisfurth (2011) explains the selection criteria of articles that "address principles and practice of LCE [learner-centered education] more or less directly in the studies they report" (p. 425), that were published between 1981 and 2010, and that were available online at the time of the review. Guthrie (2021a) describes specific search words, education levels, and study foci (p. 34) but depends on his own judgment to determine whether to include particular research in the review (p. 35). It is not our intention to suggest that Guthrie's judgement was not trustworthy; however, as Gough et al. (2012) argue, without an explicit explanation of how and why studies are identified and included, it is difficult to examine the appropriateness, consistency, and rigour of the reviewers' decisions, thus

potentially making it more difficult to assess the validity of the conclusions. In conducting a systematic review on LCP implementation in low- and middle-income countries, this article addresses a gap within the published literature, through a rigorous and exhaustive literature search with explicit inclusion criteria and a clear process for quality appraisal.

Aims and Importance the Review

In addition to filling a gap in the theoretical literature, there is a clear practical rationale for this review. As described earlier, vast quantities of time, money and resources have been invested in the implementation of LCP worldwide, but we currently lack a comprehensive body of evidence regarding LCP implementation. The study as a whole sought to examine the following four research questions:

RQ1. What research has been conducted on the implementation of LCP in primary/secondary education in low-/middle-income countries?

We consider the findings of Research Question 1 to be of great value to educational researchers, as they bring together the types of research that have already been conducted, establishing clear gaps in the literature and thus opportunities for future study. To our knowledge, such a comprehensive "mapping" of the literature on LCP implementation has not been carried out to date. As argued earlier, a comprehensive, systematic overview of existing literature is not possible through individual studies and has not been adequately provided in earlier reviews (Guthrie 2021a, 2021b; Schweisfurth, 2011).

RQ2. To what extent has LCP been implemented?

The answers to Research Question 2 are likely to be of significant interest to educational decision-makers. LCP-related reforms have been introduced in low and middle-income countries, at least at the policy level, for several decades, and it is vitally important for us to know the extent to which such policies have actually translated to LCP being evident

in the classroom. This will help policy officials make more pertinent policy decisions to allocate limited resources.

RQ3. What are the constraints and/or enablers to LCP implementation?

The findings of Research Question 3 further complement those of Research Question 2, as they bring together the factors that may have helped and/or hindered the degree of LCP implementation. Such findings are likely to be useful for a wide range of stakeholders, as they may reflect on the constraints that may be hindering LCP implementation in their contexts, and possibly learn from those factors cited as enablers of LCP implementation. It may be that the findings on constraints and enablers lead to certain changes which have a positive impact on LCP implementation. Alternatively, it may lead decision-makers to decide that LCP is unrealistic and/or undesirable in their contexts, or at least must undergo adaptation to fit with cultural and material contexts. Either way, such decisions move us closer towards potentially improving the learning of children in these schools.

RQ4. What are the outcomes of LCP implementation?

Finally, the findings of Research Question 4 are also extremely important. Given the large number of resources invested in LCP implementation, it is vital to see if such approaches are actually having an impact on learning and learners. This may take the form of academic learning outcomes, but may also extend to broader outcomes such as psycho-emotional outcomes and changes in human relationships. Stakeholders who read the findings of this review will be in a much better position to decide the extent to which it is worth continuing to invest in LCP approaches, as well as the degree to which the aims of LCP-related reforms may be adapted to better fit the needs of their contexts.

Method

To address the research questions above, a team of three researchers collaborated to conduct a systematic review of literature. The review was facilitated by two main tools:

EPPI-Reviewer and QSR NVivo. Figure 1 summarises the overall process of retrieval, screening, and analysis of the texts. Although it is not realistic to locate every single item of relevant literature, we employed an "exhaustive" search strategy (Brunton et al., 2012, p. 110), given that we established clearly defined inclusion criteria and considered every text that met these criteria.

[Figure 1 near here]

Stage 1: Initial Retrieval of Texts

Stage 1 involved importing texts from nine databases in Education and Social Sciences into EPPI-Reviewer (see Figure 1 for the full list). There were five inclusion/exclusion criteria at this stage. Texts needed to be *journal articles* that were written in *English*, as this was the language all three researchers could understand. For practical purposes, we narrowed the *date* range to a 20-year period (Jan 2001-Dec 2020). Moreover, we restricted the study to *low- and middle-income countries* (based on the World Bank [2021] list) and to studies relating to *primary and secondary* level education. Finally, texts needed to have the term "learner-centred," "student-centred," or "child-centred" (or similar variants such as the USA spelling "learner-centered") in the *title and/or abstract*.

A total of 1890 texts were imported into EPPI using the initial search criteria, of which 1027 were duplicates and were immediately removed using EPPI's duplicates functionality, thus producing 863 texts to proceed to the screening stage. The number of 863 texts retrieved at the first stage may seem a rather small number for a systematic review; we considered including variants of LCP-related terms – such as outcome-based education (Botha, 2002; Jansen, 1998), active teaching (Ngware et al., 2014), and problem-based learning (Schweisfurth, 2013) – but decided to focus on the terms "learner-centred," "student-centred," and "child-centred" in order to keep the review scope focused and feasible. Adding more of these related concepts to the search terms could be a useful extension to the present review.

Stage 2: Screening on Title & Abstract

Stage 2 consisted of two reviewers reading the title and abstract of each of the 863 texts to check whether they met the six previous criteria. At this stage, we excluded texts that were not *empirical*, i.e. the findings had to be drawn from quantitative and/or qualitative evidence, and not merely theoretical papers (N.B. previous reviews, even of empirical

research, were also not included in this review, as we were aiming to analyse the findings of individual studies). We also excluded texts that were not *relevant to the topic,* i.e., not clearly presented in the context of the implementation of an LCP-related change. In a small number of cases, the whole text had to be opened (for example, to check what educational level the text related to). All texts were reviewed anonymously by at least two reviewers. When all reviewers had completed their screening, we utilised EPPI's "reconciliation" functionality to resolve disagreements. At the end of Stage 1, the 863 initial texts were reduced to 461.

Stage 3: Screening on Full Text

Stage 3 involved screening the remaining 461 texts to decide they had sufficient *methodological rigour* to be included in the review. To judge methodological rigour, we utilised the "quality appraisal" criteria from Oketch et al. (2014, p. 85), which included the following categories: "focus," "transparency," "appropriateness," and "validity and reliability of conclusions". Here, "focus" referred to whether the study explicitly studied the implementation of an LCP-related reform. Although we had already excluded many texts that were not relevant in Stage 2, this was solely based on reading the title and abstract. On closer examination of the 461 texts, we excluded an additional 224 texts as they did not focus explicitly on the implementation of an LCP-related reform. A further 19 texts had to be excluded because we could not access the articles themselves. In some cases, we were able to locate the texts through means such as internet searches or by consulting ResearchGate. However, in many cases, despite our best efforts, links were broken and/or there did not appear to be any online presence of the article, despite appearing in educational research databases.

The remaining 218 texts were then assessed in terms of "transparency", "appropriateness" and "validity and reliability of conclusions". Here, "transparency" related to whether research questions, methods of data collection and approach to analysis were

clearly articulated in the article (for example, we typically excluded texts based on this criterion if they had very limited or no "Methods" section). "Appropriateness" referred to whether the overall research design, participants, sampling techniques and approach to analysis were appropriate to address the research questions. Finally, for "validity and reliability of conclusions" we considered whether there were any key validity and/or reliability issues, whether the authors provided sufficient evidence to support their conclusions, whether other possible factors were taken into account when drawing conclusions, whether claims of generalisability (and/or transferability) were appropriate, and whether there was a clear and coherent argument permeating the study.

In order to increase inter-rater reliability, each text was screened anonymously by at least two reviewers using EPPI, and any disagreements were reconciled by at least two reviewers. When an agreement could not be reached, the text was read by a third reviewer, who made the final decision. All research is likely to have limitations, and the process of agreeing to include or exclude texts based on methodological rigour was, to a certain extent, subjective. For example, if texts included a Methods section with some very strong elements, but some missing elements, it was sometimes challenging to reach a final decision. Ultimately, the review process forced us to reach reasonable conclusions regarding whether the problems that we identified were sufficiently important to merit exclusion from the review, or whether such issues could be overlooked in the context of the overall quality of the paper. Overall, although the process was not an "exact science", we consider that reaching agreement between three experienced postdoctoral researchers provided a reasonable level of assurance that the texts in the study were of sufficient methodological rigour to warrant inclusion in the review. A total of 135 texts were excluded based on transparency, appropriateness and validity and reliability of conclusions, leaving the current total of included texts at 83.

It is important to clarify that, when excluding texts based on methodological rigour, we excluded texts immediately when we agreed that at least one of the criteria above had not been met. For example, if we considered that there were validity and/or reliability issues in the study, we ticked the box "exclude for validity/reliability" and immediately moved on to the next text. We did not continue to evaluate the texts in any more detail (i.e. to check whether the text also had issues of transparency and/or appropriateness) as we felt this process would be excessively time-consuming and would not have directly informed the main aims of the review. Future research could perhaps collect this data in order to obtain a clearer picture of most common methodological issues identified over a wide range of journal articles.

There is always a possibility of missing relevant texts in a systematic review. Indeed, certain texts did not appear in the nine databases, despite fulfilling our selection criteria. However, we were able to locate 11 additional texts by scanning the reference lists of every text we had included up to this point (83), a practice recommended by Brunton et al. (2012). We then subjected these additional texts to the same inclusion/exclusion criteria as all the other texts. During the process of scanning reference lists, we encountered a small number of texts that appeared very relevant to the topic area but did not technically fulfil our criteria (e.g., Vavrus, 2009, who used the term "constructivism" instead of "learner-centred", "student-centred" or "child-centred"). We chose *not* to include these texts, given that there was no clearly non-biased approach to including them at the expense of others. By the end of Stage 3, the total number of texts was reduced from 461 to 94.

Stage 4: Mapping the Literature and Thematic Analysis/Synthesis

Stage 4 involved the researchers reading each of the remaining 94 texts in detail. We utilised NVivo to classify each text by a number of key variables: Region, Economic status,

Educational setting, School subject, Participants and Methods. This allowed us to conduct certain cross-tabular comparisons, a selection of which are presented in the Results section.

An important classification at this stage was the degree of LCP implementation (RQ2). Here, we created three broad categories: "Predominately LCP" (i.e. learner-centred characteristics were much more apparent than teacher-centred characteristics); "Predominately TCP" (i.e. teacher-centred characteristics were much more apparent) and "Balance between LCP and TCP" (i.e. a mixture of both LCP and TCP approaches were reported, with neither LCP nor TCP dominating). We classified each text that reported on the degree of implementation into one of these three categories, based on our overall evaluation of the information that had been presented to us in the text. Similar to our decisions to include or exclude texts based on methodological rigour, this was far from being an "exact science". Indeed, as texts had utilised a range of different methods and approaches, we would clearly not be able to create standardised, objective measures to judge the degree of LCP implementation. Moreover, one might argue that virtually all contexts would represent a "balance" between LCP and TCP, given that no classroom is likely to be completely "learner-centred" all of the time, and conversely classrooms are unlikely to be completely "teacher-centred" all of the time. However, we used our own judgment, agreed upon as a research team, based on the data reported in the articles. We feel that although these classifications are imperfect, they have helped provide an overall picture of the tendencies relating to the extent to which LCP is actually evident in the classrooms studied. It is unclear how else we would have achieved such an overview without creating these three, albeit imperfect, categories.

After classifying each text (thus "mapping" the literature), we proceeded to read each text's Findings, Discussion and Conclusion sections, and used NVivo to code a wide range of themes that had been explicitly mentioned in each text. The approach to analysis broadly followed the principles of "thematic synthesis" outlined by Thomas and Harden (2008). The

coding process was informed by our overall aims, but nodes and sub-nodes were created inductively as they emerged. For each text, the same two researchers (this was increased to three for the first 15 texts) conducted the process simultaneously over videocall. Once we had completed coding each of the 94 texts, two researchers carried out an extensive process of checking and organising the codes, with a total of 182 nodes in the final list. Consistent with the approach of "thematic synthesis," themes from individual studies were restructured into a more comprehensive overarching Conceptual Framework (Figure 2), which we present in the following Results section.

It is important to reiterate that the overall aim of this paper was to provide a comprehensive descriptive overview of the themes emerging across the 94 texts. By providing a "complete picture" of LCP implementation, we have inevitably had to reduce the detail in which we discuss each of the texts, which may be seen as a limitation of the study. However, we would argue that the overall benefit of a "complete picture" is that it provides readers with a full summary of the findings across all four research questions. Further work, exploring specific themes in more detail, has been carried out; for example, see Bremner et al. (2022) for a more extensive discussion on the outcomes of LCP implementation (RQ4).

Results

RQ1. Mapping the Literature

This section outlines the general characteristics of the 94 articles that formed part of this systematic review, thus addressing RQ1.

Country, Region and Economic Status

A total of 38 countries were represented in the study. Table 1 provides a general overview of all 94 texts and indicates which regions and countries each text focused on.

[Table 1 near here]

Tables 2 and 3 add further detail by including the percentage representation of countries in terms of region and economic status. Table 3 shows that low-income countries (27%) and upper-middle income countries (23%) were less represented than lower-middle income countries (38%), although there were overall a higher number of texts from upper-middle income countries. This can be partly explained by upper-middle income countries like China (10), Turkey (9) and South Africa (8) having a fairly high number of texts per country.

[Table 2 near here]

[Table 3 near here]

Educational Setting and School Subject

A total of 87 texts were based at schools, with nine texts focusing on pre-service training. The number of texts focusing on primary (46), lower secondary (45), and upper secondary (40) schools was very similar. A total of 44 articles related to education in general, whereas 50 texts related to a specific subject. Of the specific subjects, Science (29) was the most popular, followed by Maths (14) and Other language (12), which tended to be English.

Participants

There was a clear focus on teachers (82), which is understandable given their prominent role in implementing LCP. Students (29) were also fairly well-represented, but considerably less so than teachers. Fewer articles focused on school leaders (15), teacher trainers (10), policymakers (7) and parents (3).

Methods Employed

In terms of methods used, 11 texts were classified as solely *quantitative*, 47 as solely *qualitative*, and 36 as *mixed methods*. Regarding overall methodological approach, 21 texts were classified as *case studies*, 21 as *evaluations/interventions*, 7 as *action research* and 3 as *ethnography*. The remaining texts did not fit neatly into any broad methodological category. Table 4 provides further detail regarding the methods employed. The total numbers exceed the total number of texts, as many articles used more than one method. Overall, there was a tendency towards qualitative methods, with interviews (66) the most popular method.

[Table 4 near here]

Conceptual Framework: Organising the Thematic Findings

We now present the details of the thematic findings of the study. To aid the reader in making sense of the findings, we present a conceptual framework (Figure 2). Figure 2 builds on existing frameworks such as the models depicting systemic changes in education (Kennedy, 1988, p. 332) and laminated learning system (Tikly, 2015, p. 245), in that sub-systems are embedded within larger structures which are interlinked and influence each other. Our conceptual framework maps out specific factors critical to LCP implementation, as represented by key themes and the number of texts that mentioned them (Figure 2). The numbers in brackets relate to the number of texts citing *enablers* (blue) and *constraints* (pink), and may be consulted before referring to a specific section of the findings.

The framework contains three main organising principles. Firstly, it demonstrates a visual sequence of change: broadly speaking, the *constraints and/or enablers* on the left-hand side are seen to contribute to the extent of LCP *implementation* in the middle column, which, in turn, may lead to certain *outcomes* on the right-hand side.

This by no means implies we are suggesting causality or a strictly linear order of change. Indeed, non-linearity and interconnectedness between each factor are indicated by the second key organising principle: the embeddedness of smaller-scale layers within larger ones (represented by concentric circles). Factors related to individuals are embedded within classroom-related factors; classrooms are part of schools; what is happening within schools are influenced by policies formulated by government policy; finally, all previous levels are embedded in, and influenced by, factors in wider society. Each factor situated in one layer mutually interact with, are related to, and are affected by other factors beyond the particular layer and across different phases of LCP implementation (i.e., enablers/constraints, LCP implementation, and outcomes). To give an example, a teacher's belief in LCP placed in the individual layer might contribute to an increased extent of LCP implementation in the classroom layer. Conversely, a teacher may increase their belief in LCP by exercising LCP-related practices in their lesson. Thus, the embeddedness of different policy levels captures the non-linear relationships between the broad phases of LCP implementation and across different layers.

The third organising principle of the framework is that we have distinguished between the "parts" and "partners" of the system. As Wedell (2013) highlights, the "parts" of the system indicate both visible and invisible components and structures that make up an education system. The "partners," on the other hand, are the people within the education system, and those who, in theory, could make changes to the "parts".

[Figure 2 near here]

Having introduced and explained our conceptual framework, we first present our findings on the degree of LCP implementation (RQ2). We then consider what may have led

to differing degrees of success of implementation by focusing on the constraints and/or enablers (RQ3). Finally, we summarise the outcomes of LCP implementation (RQ4).

RQ2. Degree of LCP Implementation

In this section, we assess the overall extent to which LCP had been implemented across the 94 texts, thus addressing RQ2. A total of 71 texts discussed the extent to which LCP had been implemented in the context of an LCP-related change. As explained in Stage 4 of the Method section, we broadly categorised these texts into one of three categories: "Predominately LCP," "Balance between LCP and TCP," and "Predominately TCP" (see Tables 5-8). Overall, there was a clear tendency towards "Predominately TCP" (34; 47.9%), followed by "Balance between LCP and TCP" (24; 33.8%), with the fewest texts in "Predominately LCP" (13; 18.3%) (Table 5).

[Table 5 near here]

Moreover, as Table 6 highlights, none of the four solely quantitative papers reported findings that we classified as "Predominately LCP." Indeed, Table 7 indicates that there were no texts including experimental data, and only one text with quantitative data, that was classified as "Predominately LCP." In fact, most observational data points towards either a "Balance between LCP and TCP" (26) and "Predominately TCP" (34). As shown in Table 8, articles containing solely qualitative methods reported a higher number of texts classified as "Predominately LCP" (8). However, the overall tendency for qualitative studies was still "Predominately TCP" (16).

[Table 6 near here]

[Table 7 near here]

[Table 8 near here]

RQ3. Constraints and Enablers to LCP Implementation

Having reported the degree of implementation of LCP, we now examine what factors were reported to have been "constraints" (obstacles), or "enablers" (facilitators) of LCP implementation, thus addressing RQ3. In this section, we have included a selection of references to individual texts. These examples are not exhaustive, and due to limitations of space, we have restricted the number of references per point to three or less. As mentioned earlier, the aim of this paper is to provide a comprehensive descriptive overview of research on LCP implementation, meaning that we are not able to pick apart the intricacies of each individual article in detail. This section may be more clearly understood if read in conjunction with the Conceptual Framework (Figure 2): we begin by presenting the findings relating to "individual" level factors (in the centre of Conceptual Framework), and then move outwards towards the "classroom", "school", "policy" and "wider society" level factors.

Individual Level Factors

Teachers' Beliefs in LCP. A total of 41 articles reported teachers' beliefs as constraints to LCP implementation. Many teachers lacked familiarity with LCP practices (e.g., O'Sullivan, 2001, 2004 in Namibia) and resisted changing their pedagogical approach (e.g., Akello & Timmerman, 2018 in Uganda; Joong, 2012 in China; Vavrus & Bartlett, 2012 in Tanzania), often because their image of an ideal teacher contradicted with LCP principles (e.g., Crossley et al., 2017 in Fiji; Fu, 2020 in China; Hovhannisyan & Sahlberg, 2010 in Armenia). In 14 studies, teachers expressed concerns that LCP-related practices would impact negatively on their students' learning, especially in terms of preparing them for

examinations (e.g., Frost & Little, 2014 in Ethiopia; Jennings, 2012 in Jamaica; Shaobing & Adamson, 2014 in China). Consequently, some teachers viewed teacher-centred teaching as more effective and appropriate in their contexts (e.g., Haser & Star, 2009 in Turkey; Song, 2015 in Cambodia). In Turkey, Altinyelken (2011, 2015) reported that teachers specifically worried about the reduction of teaching content associated with the implementation of LCP, claiming that developing critical thinking would require a solid knowledge base that would be better established through more traditional methods. In 6 studies, authors reported teachers' concerns over students making excessive noise (e.g., Khoboli & O'Toole, 2011 in Lesotho; Vavrus & Bartlett, 2012 in Tanzania) and interruptions of classroom order (Shaobing & Adamson, 2014 in China; Sikoyo, 2010 in Uganda), which were perceived to result from LCP-related activities. Another 5 studies indicated that some teachers possessed deficit views of children (e.g., Brinkmann, 2015, 2019 and Sriprakash, 2009 in India). For example, Brinkmann (2019) revealed teachers' negative attitudes towards "low"- caste children in India who some teachers believed were "incapable of learning" (p. 7).

Albeit reported by far fewer studies, teachers' beliefs might also serve as enablers to LCP implementation, as mentioned in 14 texts. For example, in Kenya, Kerkhoff et al. (2020) and Lattimer and Kelly (2013) reported that teachers demonstrated significant motivation and enthusiasm to push forward the LCP-related changes. Such teachers expressed a clear desire to try to change their pedagogies (e.g., Di Biase, 2019a in the Maldives; Niesz & Krishnamurthy, 2013 in India; Rogan & Aldous, 2005 in South Africa).

Teachers' Motivation to Teach. Teacher motivation and commitment was cited as constraint to LCP implementation in 4 studies. The general lack of motivation teachers held, either due to low salaries and low social status (e.g., Altinyelken, 2010 in Uganda) or low commitment to teaching profession (Brinkmann, 2015, 2019 in India) led many of them to hold feelings of apathy towards LCP implementation. In contrast, 13 texts reported teacher

motivation as an enabler to LCP implementation (e.g., Brodie et al., 2002 in South Africa; Hovhannisyan & Sahlberg, 2010 in Armenia). In India, Niesz and Krishnamurthy (2013) described how dozens of teachers volunteered to develop activity-based learning materials. A few studies observed teacher commitment in the context of teacher training; teachers' aspiration for lifelong learning, learning technology and bringing education reform led them to participate in training without any pay in Kenya (Kerkhoff et al., 2020), whilst in Tanzania, Msonde & Msonde (2017, 2018, 2019) described how teachers were willing to engage in learning study cycles to learn from and support each other.

Teacher Competency and Experience. A lack of teacher competency and/or experience was explicitly mentioned in 23 texts. Studies cited teachers' lack of subject knowledge (e.g., Akello & Timmerman, 2018 in Uganda; Jennings, 2012 in Jamaica; Soysal & Radmard, 2017b in Turkey), general teaching skills (e.g., Brodie et al., 2002 in South Africa; Stronkhorst & Akker, 2006 in Eswatini), and inadequate experience of LCP in practice (e.g., Vavrus & Bartlett, 2012 and Voogt et al., 2009 in Tanzania). As stated by Brinkmann (2019), even those teachers with learner-centred beliefs may not be able to execute LCP practices if they do not possess competencies or "the understanding and skills needed to implement LCE [learner-centred education]" (p. 11).

Students as Constraints and Enablers. A total of 16 studies reported that students' unfamiliarity with LCP-related activities resulted in their reluctance to accept LCP-related practices (e.g., Bligaut & Au, 2014 in South Africa; Mtika & Gates, 2010 in Malawi; Shaobing & Adamnson, 2014 in China). In Nigeria, Bature and Aweh (2019) reported that students felt that the new LCP approaches were "strange," and they "were not interested in the shift" (p. 352). Some students viewed teacher-centred approaches as more effective (e.g., Blignaut, 2015 in South Africa; Mungoo & Moorad, 2015 in Botswana; Serbessa, 2006 in Ethiopia). Moreover, 4 studies reported students' general lack of motivation towards learning

(e.g., Joong et al., 2019 in the Philippines; Sifuna & Kaime, 2007 in Kenya). A further 10 studies suggested that students' disruptive behaviour (e.g., Akello et al., 2016 in Uganda; Shaobing & Adamson, 2014 in China; Vavrus & Bartlett, 2012 in Tanzania) was hindering teachers' efforts to implement LCP.

Albeit relatively few, 6 studies referred to students as enablers of LCP implementation. Such instances included student enthusiasm, which further motivated teachers to continue to implement LCP (e.g., Lattimer & Kelly, 2013 in Kenya), and students who were "well behaved, under control, hard working, and motivated" (Rogan & Aldous, 2005, p. 327 in South Africa). Authors such as Le (2018) in Vietnam and Shraim and Khlaif (2010) in Palestine highlighted the importance of training learners to become accustomed to LCP approaches. For example, Le (2018) described how Vietnamese teachers had spent the first two weeks of classes introducing students to new pedagogical models, thus preparing them to transition from "students" to "mini-teachers" (p. 230).

Classroom Level Factors

Resources Invested. The shortage of teaching and learning materials was one of the most common constraints, mentioned in 42 articles. Some classrooms completely lacked basic materials such as textbooks (e.g., Akello & Timmerman, 2018 in Uganda; Wahyudi & Treagust, 2004 in Indonesia), whereas, in other cases, students had to share textbooks with several peers, making it difficult for them to fully engage in learning processes (e.g., Chiphiko & Shawa, 2014 in Malawi; Jennings, 2012 in Jamaica; Roberts et al., 2015 in Tanzania). The scarcity of resources like computers (e.g., Coskun & Alkan, 2010 in Turkey; Kerkhoff et al., 2020 in Kenya; Shaobing & Adamson, 2014 in China), and science equipment (e.g., Rogan & Aldous, 2005 in South Africa; Sifuna & Kaime, 2007 in Kenya; Sikoyo, 2010 in Uganda) were also commonly reported.

Classroom Infrastructure. A total of 25 articles reported insufficient facilities and/or infrastructure as a constraint to LCP implementation. In many classes, basic furniture such as desks and chairs (e.g., Barrett, 2007 in Tanzania; Chiphiko & Shawa, 2014 in Malawi; Rogan & Aldous, 2005 in South Africa), science laboratories and libraries (e.g., Otara et al., 2019 in Rwanda; Rogan & Aldous, 2005 in South Africa; Sifuna & Kaime, 2007 in Kenya) or even the physical classroom itself (e.g., Joong et al., 2019 in the Philippines; Mohammed & Harlech-Jones, 2008 in Pakistan; Roberts et al., 2015 in Tanzania) were missing. In other cases, studies reported that classroom infrastructure was not appropriate for learner-centred teaching. For example, several classes had their pupils sit in rows while facing their teachers, encouraging them to listen passively to teachers rather than interact with them or their peers (e.g., Burner et al., 2017 in Iraqi Kurdistan; Serbessa, 2006 in Ethiopia; Tarmo, 2016 in Tanzania). In contrast, 2 studies reported benefits when key facilities such as libraries and computer equipment were provided (e.g., Blignaut & Au, 2014 in South Africa; Kerkhoff et al., 2020 in Kenya).

Appropriateness of Resources. Even if sufficient materials were provided, 13 studies reported that they were not always congruent with LCP principles. The quality of textbooks was often poor (e.g., Crossley et al., 2017 in Fiji; Jennings, 2012 in Jamaica; Serbessa, 2006 in Ethiopia). In Botswana, Koosimile (2005) pointed out that textbooks were based on behaviourist principles and did not encourage learners to engage in higher order thinking. Some textbooks did encourage LCP-related practices, and in such cases, students may have engaged in more activity-based learning (e.g., Le, 2018 in Vietnam). However, Le adds that although each individual activities followed LCP tenets, the overall experience of the students may not have been learner-centred, because the teachers' instructional guides only directed the teachers towards superficial changes. In contrast, 13 texts reported examples of appropriate and useful resources (e.g., Niesz & Krishnamurthy, 2013 in India; Stronkhorst

& van den Akker, 2006 in Eswatini) with some studies stressing the importance of useful teacher guides and support material (e.g., Di Biase, 2019b in the Maldives; Gado, 2005 in Benin; Jennings, 2012 in Jamaica).

Class Size. Related to the scarce resources and facilities were overcrowded classrooms, a factor identified as a constraint in 34 articles. The scale of a "large class size" varied from 30 students to over 100 (e.g., Altinyelken, 2010 in Uganda; Serbessa, 2006 in Ethiopia; Wang, 2011 in China). With such large groups, many teachers gave up trying to implement LCP activities such as group work and discussions, given that managing their students required a lot of time and energy (e.g., Al-Ramahi & Davies, 2002 in Palestine; Song, 2015 in Cambodia; Soysal & Radmard, 2017a in Turkey). Studies also reported that overcrowded classrooms prevented teachers from assessing students' individual needs, especially given the limited time available (e.g., Akello et al., 2016 in Uganda; Barrett, 2007 in Tanzania; Serbessa, 2006 in Ethiopia).

Heterogeneity of Students. A final classroom level factor was the heterogeneity of students, which was mentioned by 14 studies. Studies considered overly heterogenous students in terms of their age (e.g., Akello & Timmerman, 2018 in Uganda; Mungoo & Moorad, 2015 in Botswana) and academic levels (e.g., Haser & Star, 2009 in Turkey; Koosimile, 2005 in Botswana). Students were sometimes categorised as "faster" and "slower learners," and it was common for teachers to leave the latter behind (e.g., Barrett, 2007 in Tanzania; Di Biase, 2019a in the Maldives). In addition, some of the students themselves reported frustration at different levels in the same group (e.g., Mungoo & Moorad, 2015 in Botswana; Song 2015 in Cambodia).

School Level Factors

School Leaders' Commitment and Support. A total of 15 articles referred to a lack of school leaders' support as a constraining factor for LCP implementation. Several school

authorities were perceived to have little interest in, and provided insufficient support for, teachers' efforts to implement LCP (e.g., Crossley et al., 2017 in Fiji; Hovhannisyan & Sahlberg, 2010 in Armenia; Saito et al., 2008 in Vietnam), which may have been due to school leaders' beliefs being guided by traditional teacher-centred approaches (e.g., Tan, 2016 in China). The lack of understanding and trust in LCP from school leaders sometimes meant that insufficient school-level funds were allocated to support LCP implementation (e.g., Akello & Timmerman, 2018 in Uganda; Sifuna & Kaime, 2007 in Kenya). In China, Shaobing and Adamson (2014) reported that school leaders appeared to offer their support to LCP initiatives, but only at a very superficial level, with no specific guidance or support for teachers. In Namibia, O'Sullivan (2001, 2004) argued that the less supportive school leaders were, the less effective the implementation of LCP tended to be.

Conversely, 14 studies reported examples in which school leaders were enabling factors in LCP implementation. In Malawi, Croft (2002) argued that the participation of school managers in LCP training had enhanced their understanding of and appreciation for LCP, whilst in South Africa, Brodie et al. (2002) argued that those schools practicing LCP were often led by principals who understood the importance of the educational change. Several other studies indicated that school leaders in relatively successful LCP-related changes had provided useful resources and encouragement (e.g., Di Biase, 2019a in the Maldives; Msonde & Msonde, 2018 in Tanzania; Sun & Gao, 2019 in China).

Other Teachers' Commitment and Support. In addition to school authorities, other teachers in schools were cited as a constraint in 5 texts. Not all teaching colleagues favoured LCP-related approaches (e.g., Hovhannisyan & Sahlberg, 2010 in Armenia; Mtika & Gates, 2010 in Malawi; van de Kuilen et al., 2020 in Rwanda), and sometimes researchers observed "tension and conflict" among them (Brodie et al., 2002, p. 555 in South Africa). In India, Brinkmann (2019) found that teachers with low-LCP beliefs acted as a "vehicle of these

wider ideological beliefs" (p. 7), passing it onto younger teachers at their own schools. In contrast, 3 studies demonstrated instances of other teachers acting as enablers to LCP implementation. For example, in China, Lai (2010) described a school in which teachers of different subjects collectively planned lessons and discussed difficulties they encountered.

Policy Level Factors

Policy Officials' Commitment and Support. A total of 10 studies mentioned a lack of commitment and support from policy officials as negatively influencing LCP implementation (e.g., Al-Ramahi & Davies, 2002 in Palestine; Shaobing & Adamson, 2014 in China). In India, Brinkmann (2019) argued that teacher-centred beliefs were apparent at all levels of the education system, including policy officials, thus making reform down to the classroom level even more challenging. In certain cases, centralised school inspections imposed pressures on teachers and schools to complete the curriculum (e.g., Haser & Star, 2009 in Turkey; Jennings, 2012 in Jamaica). In contrast, Rogan and Aldous (2005) reported a distinct lack of school monitoring in South Africa, the absence of which was seen as a constraint.

A total of 4 studies suggested that if enough support is provided by policy officials, they may become enablers of LCP implementation. For example, Roberts et al. (2015) reported that financial support from and interactions with ward education officers supported the implementation of a learner-centred after-school program in Tanzania. In China, Sun and Gao (2019) argued that frequent communication with and exceptional support from authority figures had helped teachers implement a learner-centred "flipped" approach. Finally, Niesz and colleagues (Niesz & Krishnamurthy, 2013; Niesz & Ryan, 2018) praised the leader of an activity-based learning movement in India, who consulted with his colleagues and inspired those below him in the system to put the changes into practice.

Curriculum Design. Another key factor at policy level related to curriculum design. This included issues relating to the alignment of LCP concepts within the curriculum, time constraints to complete the curriculum, medium of instruction issues, and compatibility with standardised examination systems.

LCP Policy Messages. According to 28 studies, teachers found it difficult to comprehend the principles and goals of LCP, even after participating in teacher training (e.g., Lai, 2010 in China; Otara et al. 2019 in Rwanda). Authors highlighted that teachers needed more comprehensive guidance on LCP (e.g., Koosimile, 2005 in Botswana; Le, 2018 in Vietnam), both to understand the need for a pedagogical reform (e.g., Shaobing & Adamson, 2014 in China) and to understand how they might implement it (e.g., Thijs & van den Berg, 2002 in Botswana). Even when the general principles of LCP were communicated appropriately, practical guidance was often vague or missing (e.g., Msonde & Msonde, 2018 in Tanzania; Mtika & Gates, 2010 in Malawi; Serbessa, 2006 in Ethiopia).

Indeed, teachers were sometimes seen to understand LCP at a rather superficial level (e.g., Sabella & Crossouard, 2018 in Jordan, Shah & Quinn, 2016 in East Timor; Thijs & van den Berg, 2002 in Botswana), for example equating LCP simplistically with the use of particular teaching aids (e.g., Courtney, 2008 in Cambodia), or certain classroom activities like group discussions and student demonstrations (e.g., Lai, 2010 in China; Rogan & Aldous, 2005 in South Africa). In addition to an insufficient understanding of LCP, teachers, and sometimes even policymakers, had distinctive understanding and interpretations of what LCP entails (e.g., Al-Ramahi & Davies, 2002 in Palestine; Altinyelken, 2011, 2015 in Turkey; Lai, 2010 in China). For example, in Cambodia, Ogisu (2018) describes how two LCP-based donor projects with different emphases did not provide a shared understanding of LCP among different levels of stakeholders, which ultimately caused considerable confusion.

Curriculum and System Flexibility. A total of 16 texts cited the rigidity of curricula and/or the system as a whole as a constraint to LCP implementation. For example, the centralised nature of education systems in China (Wang, 2011), Palestine (Al-Ramahi & Davies, 2002) and Turkey (Altinyelken, 2015) prevented flexible adaptation of the curriculum to local needs. In some cases, the curriculum and textbooks produced by the government presented one-size-fits-all means of learning (e.g., Jennings, 2012 in Jamaica; Kerkhoff et al., 2020 in Kenya) which did not allow room for teachers to respond to localised challenges. This appeared to be especially apparent in more formalistic regimes such as Vietnam (Le, 2018; Saito et al., 2008) and Rwanda (van de Kuilen et al., 2020).

Conversely, 17 studies reported cases in which LCP implementation was facilitated by curriculum flexibility and contextualisation. Several authors reported that LCP implementation was more successful when classroom realities were acknowledged and teachers were allowed to adapt central policies to context (e.g., Khoboli & O'Toole, 2011 in Lesotho; O'Sullivan, 2001, 2004 in Namibia; Sriprakash, 2010 in India). In the Maldives, Di Biase (2015) argued that the synergy between local knowledge brought by Maldivian teachers and constructivist teaching introduced from external experts had resulted in successful co-designing of learner-centred lessons. In Kenya, Lattimer and Kelly (2013) attributed a successful LCP-related change to an ongoing dialogue with teachers and students, whilst in Vietnam, a headteacher in Le's (2018) study attributed their school's success to granting teachers autonomy to adapt learning activities.

Level of Curriculum. The overly challenging content and expectations of the curriculum was also considered a constraint by 17 studies (e.g., Crossley et al., 2017 in Fiji, Mungoo & Moorad in Botswana). Several authors highlighted that it was difficult for students to participate in certain LCP-related activities when they did not possess foundational subject knowledge, study habits, or basic literacy (e.g., Haser & Star, 2009 in

Turkey; Joong et al., 2019 in the Philippines; Wang, 2011 in China). Furthermore, some teachers felt that teacher-centred approaches were more suited to low achievers than learner-centred ones (e.g., Sikoyo, 2010 in Uganda; Soysal & Radmard, 2017a in Turkey; Tongpoon-Patanasorn, 2011 in Thailand). Indeed, in Cambodia, Song (2015) reported that some teachers had adapted different approaches depending on the unit stages; a teacher-centred approach was used when new topics were introduced because "pupils do not know anything" (p. 41), whereas more familiar topics could begin to be taught through more learner-centred strategies.

Time-related Issues. One of the most common constraints to LCP implementation related to the number of hours dedicated to certain subjects and for planning within the overall design of the curriculum, as reported by 42 studies. Specifically, 21 texts cited the lack of time to prepare LCP lessons, and 34 texts referred to a lack of time to cover the curriculum. Many teachers expressed that their working days were already overloaded (e.g., Barrett, 2007 in Tanzania; Shaobing & Adamson, 2014 in China; Song, 2015 in Cambodia) and that they would struggle to introduce learner-centred approaches given that such approaches were seen to require extra time (e.g., Di Biase, 2015 in the Maldives; Shraim & Khlaif, 2010 in Palestine; van de Kuilen et al., 2020 in Rwanda). The previously mentioned issues of overcrowded classrooms also contributed to workload, as many teachers had to mark assignments and prepare for examinations on top of lesson planning (e.g., Jennings, 2012 in Jamaica; Mohammed & Harlech-Jones, 2008 in Pakistan; Otara et al., 2019 in Rwanda).

A lack of time was also mentioned in relation to the curriculum itself. Many curricula were seen to be overloaded even before the introduction of LCP, and teachers felt under increased pressure to cover the curriculum (e.g., Barnes et al., 2018 in Ethiopia; Crossley et al., 2017 in Fiji; Saito et al., 2008 in Vietnam). In Pakistan, Mohammed and Harlech-Jones

(2008) indicated that teachers were evaluated not so much on how they taught but how many pages of the book were covered. LCP-related practices were perceived to consume more classroom time (e.g., Mtika & Gates, 2010 in Malawi; Song, 2015 in Cambodia; Vavrus & Bartlett, 2012 in Tanzania), a situation that was exacerbated by overcrowded classrooms (e.g., Altinyelken, 2010 in Uganda; Wang, 2011 in China), thus leading many teachers to revert to teacher-centred practices (e.g., Chiphiko & Shawa, 2014 in Malawi; Thompson, 2013 in Nigeria; Zenda, 2017 in South Africa).

Medium of Instruction. The medium of instruction (in most cases English) was cited as a constraint in 14 texts, and was mentioned by both teachers (7 texts) and students (11 texts). Many teachers and students were not adequately equipped with English, thus undermining classroom communication (e.g., Akello & Timmerman, 2018 in Uganda; Barrett, 2007 in Tanzania; Rogan & Aldous, 2005 in South Africa). Some authors reported that learners with little English knowledge tended to engage much less in lesson activities than those with a higher level of proficiency (e.g., van de Kuilen et al., 2020 in Rwanda; Mungoo & Moorad, 2015 in Botswana). Consequently, teachers often had to adopt coping strategies such as code-switching (e.g., Sikoyo, 2010 in Uganda) and tended to revert back to traditional teaching methods including lectures and merely providing notes (e.g., Wang & Ma, 2009 in China; Zenda, 2017 in South Africa).

Examination Systems. A total of 27 articles indicated that examination systems in their contexts were incompatible with LCP approaches (e.g., Hovhannisyan & Sahlberg, 2010 in Armenia; Shaobing & Adamson, 2014 and Tan, 2016 in China). In many cases, teachers, students, and parents prioritised student achievement which acted as a metric of teacher and school performance (e.g., Altinyelken, 2011, 2015 in Turkey; Rogan & Aldous, 2015 in South Africa). Schools with teachers who had adopted teacher-centred approaches were often perceived as having a higher level of achievement (e.g., Blignaut, 2015 in South Africa; Frost

& Little, 2014 in Ethiopia; Wang, 2011 in China), because it allowed teachers to transmit the "right knowledge" to pass examinations (Mungoo & Moorad, 2015, p. 168 in Botswana). Several authors reported that teachers and students regarded LCP-related strategies as not contributing to exam performance (e.g., Altinyelken, 2010 in Uganda; Jennings, 2012 in Jamaica; Voogt et al., 2009 in Tanzania). For example, Tan (2016) explained that doing well in high-stakes Chinese examinations (*gaokao*) was all that parents wanted for their children, and teachers' practices were therefore focused on helping students attain high scores on the test as opposed to focusing on learner-centred teaching approaches (see also Shaobing & Adamson, 2014).

Teacher Recruitment and Development. Another key domain of enablers and constraints involved teacher recruitment and development (i.e. pre-service and in-service teacher education). A total of 8 studies reported a general lack of adequately trained teachers (e.g., Jennings, 2012 in Jamaica; Msonde & Msonde, 2018 in Tanzania; Tongpoon-Patanasorn, 2011 in Thailand). Moreover, 3 studies discussed teacher a lack of punctuality and absenteeism in the context of LCP implementation (Barrett, 2007 in Tanzania; Frost & Little, 2014 in Ethiopia; O'Sullivan, 2004 in Namibia), which tended to be linked to poor working conditions, as examined below.

Working Conditions and Incentives to Change. Poor working conditions and limited incentives to change were cited in 9 texts. The teaching profession was often seen to have a relatively low social status, as reflected by low salaries (e.g., Al-Ramahi & Davies, 2002 in Palestine; Barrett, 2007 in Tanzania; Crossley et al., 2017 in Fiji) with few opportunities for promotion (e.g., Sifuna & Kaime, 2007 in Kenya), leading some teachers to undertake second jobs to supplement their salaries (e.g., Song, 2015 in Cambodia). As exemplified by a Ugandan teacher in Altinyelken (2010): "When my mind is busy and preoccupied with basic necessities of my own life, how can you expect me to perform well in the classroom?" (p.

166). Accordingly, many teachers were extremely demotivated; indeed, in India, around half of teacher participants in Brinkmann (2015) expressed that they would quit teaching if they could achieve a better paid occupation.

Only 4 studies cited examples of incentives that were seen to have positively influenced teacher practices. For example, encouragement from senior teachers and peers (Hovhannisyan & Sahlberg, 2010 in Armenia; Msonde & Msonde, 2018 in Tanzania), and even some pressure from the top (Lai, 2010 in China), motivated teachers to participate in training courses on LCP and to implement teaching innovations in the classroom.

Characteristics of Teacher Education: Constraints. Teacher education was identified as one of the most prevalent factors that determined the degree and quality of LCP implementation. A total of 13 articles referred to the lack of teacher training in general (e.g., Kerkhoff et al., 2020 in Kenya; Shraim & Khlaif, 2010 in Palestine; Sifuna & Kaime, 2007 in Kenya), whereas some specifically related to an absence of training on LCP-related teaching strategies (e.g., Jennings, 2012 in Jamaica; Otara et al., 2019 in Rwanda; Saito et al., 2008 in Vietnam). When training was provided, 11 texts reported that this was often insufficient in length. For example, authors cited training courses lasting 10 days (Altinyelken, 2010 in Uganda), 7 days (Lai, 2010 in China; Vavrus & Bartlett, 2012 in Tanzania), or even 2 days (Otara et al., 2019 in Rwanda), but these were not considered long enough in order for teachers to fully understand LCP principles and successfully apply them in practice. In addition to a lack of time, 9 studies argued that there was insufficient follow-up and ongoing support to accompany training courses (e.g., Al-Ramahi & Davies, 2002 in Palestine; Mohammed & Harlech-Jones, 2008 in Pakistan; Mtika & Gates, 2010 in Malawi). Indeed, several studies reported that school monitoring and supervision by teacher educators and/or education officers were either absent or sporadic (e.g., Akello & Timmerman, 2018 in

Uganda; Rogan & Aldous, 2005 in South Africa; Stronkhorst & van den Akker, 2006 in Eswatini).

In addition to quantity and length of training, some teachers complained that training courses were overly transmission-based, as cited by 6 texts. For example, Jennings (2012) highlighted that the focus of training in Jamaica's Reform of Secondary Education was "telling the teacher *about* it, rather than *how to do it*" (p. 265; italics in original). Indeed, training courses on LCP were often delivered through non-LCP strategies; that is to say, LCP principles were presented in theoretical terms, but not modelled in action (e.g., Altinyelken, 2011 in Turkey; Mtika & Gates, 2010 in Malawi; Niesz & Krishnamurthy, 2013 in India). A further 13 studies explicitly cited a lack of practical experiences, such as teaching practices, microteaching, and peer observation, as a constraint (e.g., Blignaut, 2015 in South Africa; Saito et al., 2008 in Vietnam). For example, Altinyelken's (2010) work in Uganda reported teachers' frustrations at the lack of practical demonstrations of how LCP could be operationalised in practice, whilst, Haser and Star (2009) lamented the lack of practical teaching practices in a pre-service teacher education programme in Turkey.

A total of 13 texts reported that the teacher education experiences were overly prescriptive, with insufficient opportunity for adaptation (see previous section on "Curriculum and System Flexibility"). In Jamaica, Jennings (2012) was particularly critical of the "one-size-fits-all" approach to teacher training, stressing that "there was no attempt on the part of the planners to ascertain how stakeholders would perceive the various attributes of [the reform]" (p. 265). In Cambodia, Ogisu (2018) was particularly critical of how LCP had been implemented on a large-scale by centralised bureaucracies, reporting frustration at the lack of autonomy granted to teachers to adapt pedagogies in their classrooms. Moreover, 9 studies highlighted teacher educators as potential obstacles to LCP implementation, for example due to their lack of experience with learner-centred approaches (e.g., Barnes et al.,

2018 in Ethiopia; Otara et al., 2019 in Rwanda; Rogan & Aldous, 2005 in South Africa), and variability of understandings (e.g., Courtney, 2008 in Cambodia; Msonde & Msonde, 2018 in Tanzania). Finally, 7 studies highlighted that there were relatively few opportunities for teachers to collaborate and form communities of practice, especially in isolated schools in which there were limited teachers per subject (e.g., Di Biase, 2019a in the Maldives; Haser & Star, 2009 in Turkey; Lai, 2010 in China).

Characteristics of Teacher Education: Enablers. In contrast to the previous section, there were several examples of teacher education environments that were seen to be conducive to effective LCP implementation. Firstly, there were 7 texts that identified course length as an enabler of effective training (e.g., Khoboli & O'Toole, 2011 in Lesotho; Niesz & Krishnamurthy, 2013 in India; Sun & Gao, 2019 in China), with the general message being that teachers needed time to try out the changes first and learn from their experiences over time in order to have the best chance of implementing LCP more successfully. Linked to this was the notion of ongoing support, which was cited in 6 studies (e.g., Lattimer & Kelly, 2013 in Kenya; Niesz & Krishnamurthy, 2013 in India; O'Sullivan, 2001 in Namibia). For example, in Belize, Hull et al. (2016) described how experienced mentors paid visits to schools once every two months in order to review teachers' progress, listen to their challenges, and provide relevant feedback.

A total of 12 studies indicated that a feature of more effective training was that it was engaging, active, and delivered in a way consistent with LCP itself (e.g., Barnes et al., 2018 in Ethiopia; Niesz & Krishnamurthy, 2013 in India; Ogisu, 2018 in Cambodia). In Namibia, O'Sullivan (2001, 2004) utilised various LCP-associated strategies in her training, ranging from demonstration to role-play and group discussions. Similar to the above, 10 studies cited teacher education incorporating practical experiences as enablers (e.g., Ghebru & Ogunniyi in Eritrea, 2017; Hull et al., 2016 in Belize; Lai, 2010 in China). Microteaching and peer-

coaching by way of observation of and discussions with peers were also effective (e.g., O'Sullivan, 2001 in Namibia; Thijs & van den Berg, 2002 in Botswana; Tolley et al., 2012 in Thailand), enhancing teachers' understandings of new learner-centred practices and increasing their confidence to operationalise them in practice. Indeed, in China, Wang and Ma (2009) reported how student teachers participated in a five-week teaching practice at local schools, where they observed teaching, received feedback on lesson plans, and carried out their own teaching practices.

The value of embedding reflective elements within training programs was also cited as important in 8 studies (e.g., Khoboli & O'Tole, 2011 in Lesotho; Msonde & Msonde, 2019 in Tanzania). In China, a school-based teacher development program reported by Lai (2010) required teachers to submit selected pieces of written reflection, which were subsequently published in a school journal. Also in China, Wang and Ma (2009) argued that a series of opportunities to reflect contributed to students beginning to "critically examine their past experiences and beliefs, realising the value of LC in bringing better learning" (p. 245). Linked to the notion of reflection was the importance of incorporating flexibility to adapt to local contexts, a factor which was mentioned in 14 texts (e.g., Niesz & Krishnamurthy, 2013 in India; Roberts et al., 2015 in Tanzania). In Kenya, Lattimer and Kelly (2013) reported ongoing dialogue with teachers before, during, and after their training, which allowed teachers to consider how they might translate LCP approaches into the local context. Moreover, in the Maldives, Di Biase (2015) experienced teaching in local classrooms herself through "team teaching", which helped her open her eyes to the challenges faced. This led her to adapt her somewhat idealised notions of LCP, and understand how more localised, contextually appropriate pedagogies would be more likely to be successful in this context (see also Croft, 2002 in Malawi; O'Sullivan, 2004 in Namibia). Regarding teacher trainers, there were only two texts in which we classified teacher trainers as "enablers" (Hovhannisyan

& Sahlberg, 2010 in Armenia and Roberts et al., 2015 in Tanzania); however it may well have been that positive training courses may have been implicitly linked to positive teacher trainers, without these being explicitly mentioned in the literature. The final category of teacher education as enablers was teacher collaboration, cited in 10 texts. Texts cited the importance of teachers having opportunities to network with other teachers in and outside of their school, thus helping them form communities of practice (e.g., Hovhannisyan & Sahlberg, 2010 in Armenia; Lai, 2010 in China). In some cases, teachers formed collaborative learning groups where they discussed their understandings of LCP and shared its challenges, which in turn motivated them to experiment with the new approaches (e.g., Mohammed & Harlech-Jones, 2008 in Pakistan; Msonde & Msonde, 2018 in Tanzania).

Wider Society Level

***Human Relationships*.** A total of 20 studies discussed human relationships in wider society as a potential constraint to LCP implementation. Of these, 10 studies suggested that cultural inappropriateness of LCP contexts may be an obstacle to LCP implementation (e.g., Altinyelken, 2010 in Uganda; Sriprakash, 2009 in India; Wang & Ma, 2009 in China). O'Sullivan (2004) indicated that the adult-child relationship in Namibia was "one of respect and authority" (p. 595) in which children were brought up to follow adults' order and tradition, discouraging them from questioning established norms. This culture of respect might be seen to be incongruent with LCP principles, which tend to emphasise critical thinking and exploration, thus creating a "cultural mismatch" (Ogisu, 2018, p. 779). Altinyelken's (2011) work in Turkey also illustrates how the promotion of democratic values through LCP may contradict the authoritarian regime in Turkey, meaning that LCP implementation is likely to be superficial. This is echoed by the interview data obtained by Crossley et al. (2017), who argued that the LCP reform in Fiji was led by international and national desires and paid little attention to contextualisation at the local level. Consequently,

authors such as Koosimile (2005) in Botswana have argued that indicators used to measure LCP implementation – such as the level of flexibility and autonomy – were ultimately an "illusive ideal" (p. 214).

A total of 7 texts highlighted that hierarchical relationships existed between teachers and various educational stakeholders. This included teacher educators (e.g., Akyeampong, 2017 in Ghana), school authorities (e.g., Mohammed & Harlech-Jones, 2008 in Pakistan; Sikoyo, 2010 in Uganda), policymakers (e.g., Le, 2018 in Vietnam; Ogisu, 2018 in Cambodia), consultants (e.g., Saito et al., 2008 in Vietnam), and society as a whole (e.g., Brinkmann, 2019 in India). For example, in teacher training settings in Ghana, Akyeampong (2017) reported that it did not seem acceptable for pre-service teachers to question the knowledge and teaching practices which college tutors put forward. Moreover, at a professional development workshop in Vietnam, Saito et al. (2008) reported that the trainee teachers expected that the consultants would provide clear instructions on the teaching methods they would be expected to use, and thus resisted participating in group discussions because they considered they would gain little from talking with their peers.

A total of 18 studies highlighted that such hierarchies were also evident in the classroom, where similar relationships exist between teachers and students (e.g., Bature & Atweh, 2020 in Nigeria; Msonde & Msonde, 2019 in Tanzania; O'Sullivan, 2004 in Namibia). Several texts highlighted that some teachers were not comfortable relinquishing control over students and their learning (e.g., Khoboli & O'Toole, 2011 in Lesotho; Shaobing & Adamson, 2014 in China; Vavrus & Bartlett, 2012 in Tanzania). Furthermore, some studies highlighted that students are sometimes reluctant to speak up because it may contradict their long-standing cultural traditions. Indeed, teacher-student relationships are likely to reflect adult-child relationships in society, and in many contexts, children are not

encouraged to question adults but rather keep silent (e.g., Ogisu, 2018 in Cambodia; Serbessa, 2006 in Ethiopia; Roberts et al, 2015 in Tanzania).

Views of Knowledge. In addition to hierarchical human relationships, 22 studies stressed that beliefs in the fixed and unquestionable nature of knowledge represented an obstacle to LCP implementation. As highlighted in the previous section, in many contexts students were not used to expressing their thoughts and instead expected to receive knowledge from teachers (e.g., Mungoo & Moorad, 2015 in Botswana; Shaobing & Adamson, 2014 in China; Soysal & Radmard, 2017b in Turkey). Indeed, the review found that many teachers possessed a view of knowledge as fixed and as something to be transmitted from themselves to students (e.g., Barrett, 2007 in Tanzania; Gado, 2005 in Benin; Shah & Quinn, 2016 in East Timor). For example, in Tanzania, Tarmo (2016) reported that science teachers trusted scientific knowledge delivered by experts as absolutely true, and hence they considered material written in textbooks as unchanging knowledge which would always provide one right answer. In Vietnam, Le (2018) indicated that textbooks were developed under government supervision and were seen as the absolute source of knowledge, meaning that teachers had to follow the exact words and topics as "the 'correct' answer" (p. 231).

Parental Support. Finally, a total of 9 studies reported that a lack of support from parents had made it difficult for teachers to practice LCP. For example, some studies reported that many parents paid little attention to children's education, leaving the full responsibility to the school (e.g., Akello & Timmerman, 2018 in Uganda; Wang, 2011 in China). Conversely, some studies reported that parents were concerned about LCP because they perceived that their children did not learn as much under such approaches (e.g., Le, 2018 in Vietnam; Tan, 2016, China). In Turkey, Altinyelken (2011) even reported instances in which parents completed homework assignments for their children so they could achieve better marks.

There were 5 studies that cited examples in which parents and communities could potentially become enablers of LCP reforms. For example, in Lesotho, Khoboli and O'Toole (2011) reported that teachers had communicated the use of LCP approach with parents through school letters, whilst in India, Niesz and Krishnamurthy (2013) reported instances in which parents were invited into the classroom to observe LCP-informed lessons (see also Sun & Gao, 2019 in China). As Tan (2016) elucidates, unless a common understanding of education quality is reached between school leaders, teachers, and parents, LCP implementation in particular contexts is unlikely to be accepted by the wider society.

RQ4. Outcomes of LCP Implementation

This final section of the thematic analysis focuses on the outcomes of LCP implementation, thus addressing RQ4. As in RQ3, given that the aim of this paper is to provide a comprehensive descriptive overview of the themes emerging in the review, we have not been able to discuss individual papers in great detail. For a more detailed discussion of the reported outcomes of LCP implementation, see Bremner et al. (2022).

Students' Learning Outcomes

A total of 34 studies reported on student learning outcomes as a result of LCP implementation, of which 31 texts reported positive outcomes while 9 texts presented negative outcomes. There were 9 studies that collected what we considered "objective" evidence of students' learning outcomes, all of which reported positive outcomes, for example by conducting pre- and post-test of secondary students' learning during a lesson (Msonde & Msonde, 2017, 2018 in Tanzania), analysing primary school students' exercise books (Akello et al., 2016 in Uganda), and comparing three different "student-centred instructional strategies" of peer tutoring with high school students (Ismael & Alexander, 2005, p. 67 in Malaysia). Although the findings of the previous studies provide early indications to suggest that LCP may be effective, they did not utilise a comparison group,

meaning that they provide rather limited evidence about how much learners might have learnt anyway under previous approaches.

Although not explicitly carrying out an experimental study, in Ethiopia, Cianca (2012) compared the frequency of interactions between the workbooks of students who had received a "traditional" approach compared to those who had participated in the "reading buddies" (p. 411) programme, and reported that there were more examples of English language use in the reading buddies group. The most robustly designed quantitative studies in the review all focused on science teaching, and used larger samples to compare LCP outcomes (in the treatment groups) with traditional teacher-centred outcomes (in the control groups). All five learner-centred treatment groups demonstrated statistically significant improvements in terms of overall test scores (Ozkan & Topsakal, 2020 in Turkey), knowledge and problem-solving abilities (Shahat et al., 2017 in Egypt), achievement and science process skills (Koksal & Berberoglu, 2014 in Turkey); knowledge on the topic (Karpudewan et al., 2015 in Malaysia), and science process skills and attainment (Ong & Ruthven, 2010 in Malaysia). The findings of such studies provide some preliminary data regarding the potential effectiveness of LCP; however, it must be recognised that the objective evidence remains rather thin, and there may also be methodological limitations of such studies (see Bremner et al., 2022 for a more detailed discussion).

There were considerably more texts that cited non-objective evidence of LCP outcomes, i.e. from teachers and/or students' perspectives. A total of 23 studies reported teachers' views that LCP had led to increased learning (e.g., Niesz & Ryan, 2018 in India; Shraim & Khlaif, 2010 in Palestine; van de Kuilen et al., 2020 in Rwanda), increased understanding (e.g., Ghebru & Ogunniyi, 2017 in Eritrea; Voogt et al., 2009 and Roberts et al., 2015 in Tanzania) and improved performance in examinations (e.g., Bature & Atweh, 2020 in Nigeria; Lattimer & Kelly, 2013 in Kenya; Zenda, 2017 in South Africa). Another 23

studies reported students' general positive classroom experiences of LCP, with 11 texts specifically reporting that students felt they had learnt more than under previous teacher-centred approaches (e.g., Bature & Atweh, 2019; Lattimer & Kelly, 2013; Msonde & Msonde, 2019).

A total of 9 studies reported little to no improvements in students' learning outcomes, although it must be pointed out that all of these came from non-objective perceptions as opposed to objective evidence. For example, in Turkey, teacher participants in Altinyelken (2011) reported that despite students improving their oral and written communication, their students ultimately learnt less due to reduced lesson content and time-consuming activities. Other studies reported teachers' perceptions that LCP did not enhance students' development of higher order skills (e.g., Jennings, 2012 in Jamaica; Joong, 2012 in China) or even basic understandings of the subject being taught (e.g., Le, 2018 in Vietnam; Tan, 2016 in China).

Students' Non-Cognitive Outcomes

The "outcomes" of LCP implementation were not limited to their learning outcomes but also non-cognitive outcomes. A total of 23 studies reported positive non-cognitive outcomes as a result of LCP-related reforms. In some studies, children were observed to have become more interested in the subject and motivated to learn (e.g., Altinyelken, 2010 in Uganda; Roberts et al., 2015 in Tanzania; Zenda, 2017 in South Africa). Two experimental studies indicated that LCP had significant effects on intrinsic motivation and learning behaviours (Cheng & Ding, 2020 in China) and attitudes toward science (Koksal & Berbeloglu, 2014 in Turkey). In addition, some studies reported that LCP had contributed towards increased student self-esteem and confidence (e.g., Altinyelken, 2010 in Uganda; Niesz & Krishnamurthy, 2013 in India; Roberts et al., 2015 in Tanzania). In Kenya, Lattimer and Kelly (2013) demonstrated how an oral history project, where students were invited to

publish their projects in books, had transformed their sense of self, leading to an increased sense of empowerment.

In contrast, 3 studies reported less positive non-cognitive outcomes in terms of students' confidence (Jennings, 2012 in Jamaica), autonomy (Shraim & Khlaif, 2010 in Palestine) and learning behaviours in general (Hovhannisyan & Sahlberg, 2010 in Armenia).

Teachers' Attitudes/Beliefs towards LCP

A commonly cited outcome of LCP implementation, reported by 28 studies, involved teachers becoming more positively disposed towards LCP after having taken part in an LCP-related reform (e.g., Akello et al., 2016 in Uganda; Cianca, 2012 in Ethiopia; Wahyudi & Treagust, 2004 in Indonesia). Survey results (e.g., Isikoglu et al., 2009 in Turkey; Jennings, 2012 in Jamaica; Joong, 2012 in China) indicated that teachers had gained more favourable views of LCP over the course of implementation of an LCP-related change. In Eritrea, Ghebru and Ogunniyi (2017) reported that 84% of pre-service teachers showed "noticeable perceptual shifts" (p. 56) between pre-test and post-test when they were exposed to an LCP-related training course. In India, Niesz and Krishnamurthy (2013) highlighted that teachers who were initially sceptical about LCP came to espouse it as they observed their students learned more. In Kenya, Lattimer and Kelly (2013) described similar findings, stating that teachers had expressed that implementing LCP had been a positive experience and that they would recommend LCP approaches to other teachers.

Relationship Changes

A total of 16 studies reported positive teacher–learner relationships as a consequence of LCP implementation. Authors observed that classroom relationships shifted from teacher-controlled to more democratic (e.g., Allen et al., 2018 in Indonesia; Altinyelken, 2011, 2015 in Turkey; Bature & Atweh, 2020 in Nigeria) and more informal (Al-Ramahi & Davies, 2002 in Palestine), with the teacher moving "from the stage to the backstage" (Sun & Gao, 2019, p.

13 in China). Indeed, teachers' role developed into more of a guide (Burner et al., 2017 in Iraqi Kurdistan; Lattimer & Kelly, 2013 in Kenya) and even friend (van de Kuilen et al., 2020 in Rwanda). In contrast, 2 studies reported limited or negative changes in student-teacher relationships. In East Timor, Shah and Quinn (2016) observed few changes in traditional teacher-student relationships, whilst in Tanzania, Vavrus and Bartlett (2012) presented teachers' concerns that students may begin to doubt teachers' expertise if they were to begin to pose questions to the students (see previous section on hierarchical human relationships).

Changes in relationships between the students themselves, with 13 texts citing positive changes. Some studies reported that LCP implementation had led to enhanced student–student interactions and peer support (e.g., Akello et al., 2016 in Uganda; Stears, 2009 in South Africa; Msonde & Msonde, 2019 in Tanzania), whilst in Indonesia, Wahyudi and Treagust (2004) reported that an LCP treatment group showed significantly better student–student relationships than the control group. The potential longer-term effects on peer relationships were mentioned in 2 studies. In Uganda, Altinyelken (2010) related enhanced student–student interactions with the development of their skills to form friendships and maintain favourable interpersonal relationships. Moreover, Burner et al. (2017) referred to increased collaboration between boys and girls, which had not been common in Kurdish classrooms. In contrast, 2 studies introduced negative examples of student–student relationships after LCP implementation: that more capable learners ended up doing all the work (Mungoo & Moorad, 2015 in Botswana) and that some boys had annoyed girls during group work (Wahyudi & Treagust, 2004 in Indonesia).

Wider Societal Outcomes

Although the outcomes discussed thus far pertain to individual and rather short-term outcomes, Altinyelken (2011, 2015) considered potential longer term wider societal impacts

derived from LCP implementation. When discussing the introduction of LCP in Turkey, Altinyelken reported that teachers and experts had noted that children were becoming more critical compared to previous generations. She argued that this might contribute to democratising classroom processes and eventually to promoting a more democratic society. However, Altinyelken also suggested that LCP implementation may have exacerbated existing inequalities in Turkey, given that children with more affluent family backgrounds could more easily afford the equipment and materials required for LCP-related activities. She therefore warned that one of the outcomes of LCP implementation could be that it might actually reproduce and/or widen social inequalities, and thus LCP might be blamed as "an elitist pedagogy" (Altinyelken, 2015, p. 494) which might ultimately produce a less democratic society with larger socio-economic gaps.

Discussion

This systematic review of research into the implementation of LCP in low- and middle-income countries has yielded a vast number of themes and potential discussion points. A selection of those which we feel are most pertinent are examined now, as well as our recommendations and implications for future policy.

Teacher-Centred Pedagogy More Prevalent, but More Evidence is Needed

An important finding of the review is that there were still relatively few cases in which LCP was the dominant pedagogy in the classroom. Out of 71 texts reporting on the degree of LCP implementation, only 13 (18.3%) were classified as "Predominately LCP," while 24 (33.8%) were broadly a "Balance between TCP and LCP" and 34 (47.9%) were still "Predominately TCP." This would resonate with the findings of Guthrie (2021a), who found that the vast majority of studies (94.8%) on LCP implementation had demonstrated "the continuation of formalism" or "only some surface adoptions of progressive techniques" (p.

249). The evidence that we have collected and analysed in this review draws less stark conclusions than those drawn by Guthrie; however, it agrees with him in the sense that TCP is still considerably more prevalent than LCP in most contexts. These findings are important, as they show that despite LCP being introduced, at least at the policy level, in numerous countries worldwide, the overriding tendency continues to lean towards teacher-centred pedagogy in the majority of classrooms.

Even if LCP is evident in a classroom, this does not necessarily mean that new approaches will lead to positive results. It is therefore important to consider not only the *degree* of LCP implementation, but also the *outcomes* of implementation. Here, the review's findings would seem to differ greatly from those reported by Guthrie (2021a). Indeed, while Guthrie (2021a) argued that only 1.8% of studies demonstrated "some progressive success" (p. 249), our findings leant much more towards successful outcomes. For example, in terms of students' learning outcomes, we found 31 texts that reported positive outcomes, and only 9 texts that reported limited or negative outcomes.

Although the previous may be seen as good news for supporters of LCP, we would nevertheless remain extremely cautious when interpreting these findings. The evidence base supporting these findings is still extremely thin. In terms of the degree of LCP implementation (i.e. the degree to which LCP was evident in the classroom), in the relatively few cases where LCP was reported to have been implemented with some degree of success, the evidence base comes from mostly qualitative and mixed method sources. Moreover, in terms of LCP outcomes (i.e. what LCP actually leads to), most of the evidence on LCP outcomes came from subjective data such as teacher or students' perceptions. Indeed, in our review, there were only 9 texts that were categorised as containing "objective" evidence of LCP implementation, albeit all 9 of these reporting positive outcomes.

In addition to the above, it is necessary to continue to be tentative when drawing overall conclusions on LCP outcomes due to various methodological limitations inherent in the studies reviewed (see Bremner et al., 2022 for a more detailed discussion of some of these limitations). For example, a researcher wanting to investigate LCP may be implicitly predisposed to look for positive findings (Crossley & Watson, 2003), and study participants may consciously or unconsciously provide answers that are seen to "please" the researcher (Smith & Noble, 2014). Finally, one might ask whether negative findings may be being collected, but not reported, such is the tendency for some researchers to avoid publishing findings unless they fit pre-existing hypotheses (Dickersin, 2005).

In light of the previous discussion, we would stress the urgent need for more rigorously designed, large-scale, objective studies aiming to prove or disprove the effectiveness of LCP approaches in comparison to TCP approaches. However, larger scale studies that evaluate the outcomes of LCP imply a significant investment of time, resources, and political will, which may not always be readily available in all country contexts. Indeed, critics might argue that larger organisations and government bodies may be reluctant to actually find out the extent to which LCP is effective, given overriding political pressures and the superficial notion that LCP is synonymous with some kind of "progress."

The Importance of Investigating LCP Implementation Over Time

It was interesting to note that the reported positive outcomes of LCP implementation were not limited to academic learning outcomes. For example, many reported positive student experiences of LCP, as well as certain additional outcomes such as increased motivation to learn, increased autonomy, and improvements in relationships. The review also found that, despite initial resistance in many cases, a large number of teachers became more positively disposed to the change over time. Advocates of LCP might therefore predict that, over time,

certain principles of LCP may continue to be absorbed by a wider number of stakeholders, which might eventually translate into positive changes for teachers and learners.

Time, here, is an important concept and perhaps one that has not been given enough consideration by most literature in our review and in Guthrie (2021a, 2021b). What most key literature on educational change processes tell us is that educational change, especially "complex" changes such as the transition from TCP to LCP, take significant time to come to fruition (Markee, 1997; Fullan, 2015; Wedell, 2009). However, few studies have integrated a long-term perspective when considering LCP implementation, with Altinyelken's (2011, 2015) writing about Turkey being a notable exception. Guthrie (2021a, p. 245) makes a similar point that positive implementation outcomes were found only in short-term projects or experiments, which may be more susceptible to methodological issues such as the tendency for participants to change their behaviours and/or responses due to their awareness of being researched. Guthrie has thus argued that LCP approaches should be abandoned and the focus should instead be on improving the effectiveness of traditional teacher-centred approaches. At the risk of being accused of "cognitive dissonance" (p. 9), we would be somewhat more cautious in interpreting the findings in this way; indeed, the availability of only short-term positive findings would not, in our view, justify a complete rejection of LCP. Our review indicates that the extent to which LCP practices and outcomes may continue after donors or researchers leave has not been given sufficient attention, and what we would suggest is needed is a wider range of research that takes into account the processes and outcomes of LCP implementation over time. To be clear, we are not necessarily advocating that LCP *should* be implemented; but rather that we need a more convincing evidence base to assess its potential effectiveness over longer durations of time in low- and middle-income contexts. Currently, this evidence base for this is far from conclusive.

Key Lessons from LCP Implementation – The Need for Contextualised Pedagogy

A vast number of constraints to LCP implementation exist and have been comprehensively documented in this review. As theorised by Wedell (2013), these included both the "parts" of the system (i.e. the different components and structures of education systems) but also the "partners" in the system (i.e. the stakeholders involved in implementation). Individual level factors, such as teachers' beliefs, lack of motivation, lack of competency and experience, as well as student resistance to LCP, were embedded within classrooms that were often overcrowded, lacking appropriate resources, and overall infrastructure, with a wide range of different levels in the same group. At the school level, school leaders and other teachers often failed to provide the support needed for teachers to effectively implement LCP. This lack of support was also apparent at the higher government policy level, where unclear policy messages, overly rigid curricula, unrealistically high levels of content (sometimes relating to language of instruction), a lack of class time, the overriding pressure of standardised examinations, and ineffective teacher recruitment and development provided significant obstacles to implementation. Finally, at the wider society level, and to a certain extent permeating all other levels, there continue to be doubts about the cultural appropriateness of LCP, including concerns over changing relationships implied by LCP and a continuing tendency to see knowledge as "fixed."

In contrast, there were certain enablers that were reported to have helped more successful LCP implementation. At the individual level, several texts mentioned teacher and students' beliefs about the value of LCP, as well as their enthusiasm and motivation to implement it. At the classroom level, there were examples of appropriate infrastructure and resources to facilitate LCP, which were further helped by school leaders and other teaching colleagues' support at the school level. At the government policy level, support from policy officials was also cited, as well as several ways of providing effective teacher recruitment and

development, for example longer courses, courses incorporating ongoing support, engaging/active training sessions, the inclusion of practical experiences, opportunities for teacher reflection, opportunities for teacher collaboration and room for teachers to adapt the change to fit with their local contexts. Finally, support from those in the wider society, notably parents, were cited as potential enablers to LCP implementation.

Despite the numerous examples of enablers mentioned above, it must be recognised that considerably more constraints than enablers were identified in the review. In many contexts, such constraints to implementation may seem unassailable; indeed, in some contexts, the most sensible course of action may be to abandon, or tone down, overly ambitious LCP-related changes. This would seem especially relevant in contexts where significant changes to material constraints are unrealistic (e.g., Akello & Timmerman, 2018 in Uganda; Sifuna & Kaime, 2007 in Kenya), and/or where LCP is considered too culturally incompatible to make meaningful changes (e.g., Altinyelken, 2011, 2015 in Turkey; O'Sullivan, 2004 in Namibia). However, the argument that LCP needs to be completely abandoned in all contexts (Guthrie, 2021a, 2021b) would seem an unnecessary generalisation, and certainly one that is not credibly substantiated by the studies analysed in this review.

As Bremner (2021) highlights, the concept of LCP may be interpreted in diverse, albeit overlapping, ways; as such, different facets of LCP may be easier to implement than others. The comparison between seeing LCP as "active participation" and seeing LCP as "power sharing" is a worthwhile example to consider here. While contextual constraints such as ingrained cultural beliefs, lack of curriculum flexibility and standardised education systems may make "power sharing" unfeasible in certain contexts, "active participation" may be more realistic. Even within individual sub-categories of LCP, certain elements may be more possible than others. For example, in terms of "power sharing", allowing students a voice to vastly change the core content of standardised curricula is unlikely to be feasible, but

allowing them a certain degree of freedom to choose sub-topics and/or provide feedback to the teacher may be possible. Teachers may continue to be seen by many as authoritative sources of knowledge, but a more positive, friendly teacher–student relationship may be realistically achievable. This more nuanced way of viewing teaching and learning broadly defined as "learner-centred" draws parallels with Schweisfurth's (2013) notion of "minimum standards" (p. 146), or, as Bremner (2021) suggested, "flexible" or "contextually appropriate standards" (p. 25).

We must reiterate at this stage is that we are not necessarily promoting some or all aspects of LCP to be implemented in classrooms. Although LCP has been considered by many as some kind of "best practice" or "universal panacea" in education reforms (Schweisfurth, 2013), the transferred policies of LCP do not, or should not, converge towards a single, expected form of LCP. The conceptual framework (Figure 2) that we propose in this paper intends to further emphasise this notion of localised, social embeddedness of practice. In the "wider society" layer, it is sociocultural factors, including human relationships and view of knowledge, that shape how policies on curricula, teacher recruitment and development are organised in the "government policy" layer; these elements then filter through to schools in the "school" layer, where practices manifest themselves through interactions between teachers and students (in the "classroom" and "individual" layers). The inextricable link between different layers of pedagogy signals a large number of factors affecting each other to produce a certain degree of LCP implementation in the classroom.

In the classroom layer, the huge number of constraints identified by many studies, and the relatively large proportion of contexts in which TCP still dominates, indicates quite clearly that LCP should not be introduced blindly and uncritically. It should be educational decision-makers; that is to say, policy actors including teachers and students, who decide what kind of pedagogical approaches are suitable in their contexts, taking into consideration

different aspects depicted in the conceptual framework (Figure 2). Indeed, as mentioned earlier, one of the most commonly mentioned "enablers" of LCP implementation was "curriculum and system flexibility"; i.e. the openness and flexibility on the part of education systems to allow stakeholders to decide whether LCP may be appropriate to their specific contexts.

If decision-makers do see potential in LCP (or particular sub-categories of the concept), they should analyse what is realistically possible in their contexts in order to address some of the constraints identified in this review. As stated earlier, some of these constraints may be too difficult or inappropriate to change in the short- or medium-term, whereas some may be more realistic (for example, providing more closely aligned textbooks; providing clearer policy messages; providing more meaningful, practical, and consistent teacher training opportunities). If, upon critical examination, it is found that it is unfeasible to reduce such contextual constraints, then there would appear to be two options: (1) abandon LCP and focus on improving teacher-centred instruction, as recommended by Guthrie (2021a, 2021b); or (2) adapt the focus of LCP to those characteristics that are more likely to be implemented (as mentioned earlier, "active participation" might be a good place to start). Importantly, there needs to be an understanding and acceptance that (1) "complex" educational changes like this take considerable time to begin to come to fruition; and (2) that ideal or theoretical conceptions of LCP are unlikely to be implemented in absolute terms. With regards to the final point, it is sometimes easy (and researchers, including ourselves, may be accused of this too) of oversimplifying a change from TCP to LCP. When viewing change in rather binary terms, we may lose sight of the fact that, in most contexts, the vast majority of classrooms are going to represent a combination of teacher- and learner-centred approaches depending on the specific needs of the learners (cf. "learnING-centred" approaches – O'Sullivan, 2004; Brinkmann, 2015).

Gaps in the Literature, Limitations, and Opportunities for Future Study

The most important call for future research emerging from this systematic review is the fairly urgent need for more robust, objective evidence (published regardless of whether the findings are perceived to be positive or negative) regarding the effectiveness or non-effectiveness of LCP. In this regard, solely qualitative methods, and in particular those gathering stakeholders' subjective perspectives, may be somewhat limited. Moreover, given the inherent time needed to implement "complex" changes like a transition from TCP to LCP, it will be important to collect a wider range of data with both time element built in (e.g., longitudinal or retrospective life history approaches), as well as studies that genuinely reflect upon and/or address the longer-term outcomes of LCP implementation.

This review has highlighted that some geographical and cultural macro-regions have been somewhat underrepresented, at least in terms of journal articles published in English. In particular, research from Latin America would be most welcome, as well as low- to middle-income countries in Europe and Central Asia (with the exception of LCP in Turkey, which is relatively well-researched). Low-income countries and upper-middle income countries were also underrepresented in comparison to lower-middle income countries. Other key variables such as educational level (primary, lower, and upper secondary) and school subjects seem to have a fairly balanced spread of texts, although there may be opportunities to provide additional case studies focusing on less well-established school subjects.

Certain limitations in terms of the scope of this systematic review may provide further opportunities to enhance our knowledge. For example, this study did not include texts relating to pre-school, higher or further education, and high-income countries were not included. Moreover, the study was limited to academic journal articles, potentially missing opportunities for other resources and "grey literature" (although the study of Guthrie [2021a, 2021b] is comprehensive in this regard). Studies about LCP in languages other than English

may provide an interesting comparative dimension. Finally, given that LCP is a broad and multifaceted concept, systematic reviews on more specific elements of it, and/or widening the scope of reviews to include related concepts, may allow us to gain an even more comprehensive picture of relevant research.

A final limitation of this review is that, in an attempt to provide a comprehensive overview of LCP implementation and to address all four research questions (i.e. map the literature *and* present degree of LCP implementation *and* constraints/enablers *and* outcomes of LCP implementation), the findings may be seen as somewhat superficial, with the detail and nuance of each individual article being lost in the overall message. Although it was not the aim, and beyond the scope, of this review to explore the complexities of each individual theme or research question, more specific future research may aim to do so. Readers interested in the outcomes of LCP implementation in more detail may wish to read one of our recent papers (Bremner et al., 2022). Moreover, we would be happy to share our NVivo review files so that future researchers may further explore specific areas of their interest.

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Texts that formed part of the dataset are marked with an asterix (*)

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Table 1

Summary of Texts Represented in the Review by Region and Individual Country

Sub-Saharan Africa (*n = 45*)

Benin
Gado (2005)

Botswana
Koosimilie (2005)
Mungoo & Moorad (2015)
Thijs & van den Berg (2002)

Eritrea
Ghebru & Ogunniyi (2017)

Eswatini
Stronkhorst & van den Akker (2006)

Ethiopia
Barnes et al. (2018)
Cianca (2012)
Frost & Little (2014)
Serbessa (2006)

Ghana
Akyeampong (2017)

Kenya
Kerkhoff et al. (2020)
Lattimer & Kelly (2013)
Lattimer (2015)
Sifuna & Kaime (2007)

Lesotho
Khoboli & O'Toole (2011); Khoboli, et al. (2013)*

Malawi
Chiphiko & Shawa (2014)
Croft (2002)
Mtika & Gates (2010)

Mozambique
Luyten & Bazo (2019)

Namibia
Kasanda et al. (2005)
O'Sullivan (2001, 2004)*

Nigeria
Bature & Atweh (2019)
Bature & Atweh (2020)
Thompson (2013)

Rwanda
Otara et al. (2019)
van de Kuilen et al. (2020)

South Africa
Blignaut & Au (2014)
Blignaut (2015)
Brodie et al. (2002)
Mavhunga & Rollnick (2015)
Rogan & Aldous (2005)
Stears (2009)
Taylor & Booth (2015)
Zenda (2017)

Tanzania
Barrett (2007)
Msonde & Msonde (2017, 2018, 2019)*
Roberts et al. (2015)
Tarmo (2016)
Vavrus & Bartlett (2012)
Voogt et al. (2009)

Uganda
Akello et al. (2016)
Akello & Timmerman (2018)
Altinyelken (2010)
Sikoyo (2010)

East Asia & Pacific (*n = 25*)

Cambodia
Courtney (2008)
Ogisu (2018)
Song (2015)

China
Chen (2015)
Cheng & Ding (2020)
Fu (2020)
Joong (2012)
Lai (2010)
Shaobing & Adamson (2014)
Sun & Gao (2019)
Tan (2016)
Wang & Ma (2009)
Wang (2011)

East Timor
Shah & Quinn (2016)

Fiji
Crossley et al. (2017)

Indonesia
Allen et al. (2018)
Wahyudi & Treagust (2004)

Malaysia
Ismail & Alexander (2005)
Karpudewan et al. (2015)
Ong & Ruthven (2010)

Philippines
Joong et al. (2019)

Thailand
Tolley et al. (2012)
Tongpoon-Patanasorn (2011)

Vietnam
Le (2018)
Saito et al. (2008)

Europe & Central Asia (*n = 10*)

Armenia
Hovhannisyan & Sahlberg (2010)

Turkey
Altinyelken (2011, 2015)*
Coskun & Alkan (2010)
Haser & Star (2009)
Isikoglu et al. (2009)
Koksal & Berberoglu (2014)
Ozkan & Topsakal (2020)
Sen et al. (2015)
Soysal & Radmard (2017a, 2020)*
Soysal & Radmard (2017b)

South Asia (*n = 6*)

Bangladesh
Hamid & Honan (2012)

India
Brinkmann (2015, 2019)*
Niesz & Krishnamurthy (2013); Niesz & Ryan (2018)*
Sriprakash (2009, 2010)

Maldives
Di Biase (2015, 2019a, 2019b)*

Pakistan
Mohammed & Harlech-Jones (2008)

Middle East & North Africa (*n = 6*)

Egypt
Shahat et al. (2017)

Iraq
Burner et al. (2017)

Jordan
Sabella & Crossouard (2018)

Morocco
Smail (2017)

West Bank & Gaza
Al-Ramahi & Davies (2002)
Shraim & Khlaif (2010)

Latin America & Caribbean (*n = 2*)

Belize
Hull et al. (2016)

Jamaica
Jennings (2012)

*These texts were combined and treated as a single study, as they reported the same dataset.

Table 2

Distribution of Journal Articles by Region

Region	Total no. (excl. high income countries, at time of study)	No. of countries in review	% of countries represented (excl. high income)	No. of texts in review	% of texts in review
Sub-Saharan Africa	48	16	33%	45	48%
East Asia & Pacific	23	9	39%	25	27%
Europe & Central Asia	21	2	10%	10	11%
Middle East & North Africa	13	5	38%	6	6%
South Asia	8	4	50%	6	6%
Latin America & Caribbean	25	2	8%	2	2%
Total:	138	38	28%	94	100%

Table 3

Distribution of Journal Articles by Economic Status

Economic Status	Total no. (at time of study)	No. of countries in review	% of countries represented	No. of texts in review	% of texts in review
Low-Income Country (LIC)	29	6	27%	15	16%
Lower-Middle Income Country (LMIC)	50	19	38%	35	37%
Upper-Middle Income Country (UMIC)	56	13	23%	44	47%
Total:	135	38	28%	94	100%

Table 4

Methods Employed over the 94 Articles

Methods employed	No. of texts in review
Quantitative methods	
Survey (quantitative)	34
Observation (quantitative)	23
Experiment and/or RCT	10
Other (quantitative)	12
Qualitative methods	
Interview	66
Focus group	17
Observation (qualitative)	50
Survey (qualitative)	16
Other (qualitative)	41

Table 5

Allocation of Texts based on Degree of Implementation of LCP

Classroom evidence	No. of texts in review
Predominately LCP	13
Balance between LCP and TCP	24
Predominately TCP	34

Table 6

Cross-Tabular Comparison based on Quantitative, Qualitative, or Mixed Methods

Classroom evidence	No. of texts in review		
	Solely quantitative	*Solely qualitative*	*Mixed methods*
Predominately LCP	0	8	5
Balance between LCP and TCP	2	11	11
Predominately TCP	2	16	16

Table 7

Cross-Tabular Comparison based on Individual Quantitative Methods

Classroom evidence	No. of texts in review			
	Survey (quantitative)	*Observation (quantitative)*	*Experiment and/or RCT*	*Other (quantitative)*
Predominately LCP	5	1	0	0
Balance between LCP and TCP	11	8	1	2
Predominately TCP	10	11	1	5

Table 8

Cross-Tabular Comparison based on Individual Qualitative Methods

Classroom evidence	No. of texts in review				
	Interview	*Focus group*	*Observation (qualitative)*	*Survey (qualitative)*	*Other (qualitative)*
Predominately LCP	7	4	8	6	7
Balance between LCP and TCP	19	3	18	3	10
Predominately TCP	28	5	23	4	18

Figure 1 *Flow Diagram Outlining Process of Retrieval, Screening, and Analysis of the Texts (adapted from Bremner et al., 2022, p. 3)*

Figure 2 *Conceptual Framework summarising enablers/constraints, degree of LCP implementation, and outcomes of LCP implementation*