Center for Universal Education at BROOKINGS

JULY 2024

WORKING PAPER #187.2

SPARKS WORKING PAPER II

MOVING AWAY FROM "BEST PRACTICES"

TOWARDS RELEVANT PEDAGOGICAL APPROACHES AND REFORMS

GHULAM OMAR QARGHA
RACHEL DYL

Moving Away from "Best Practices":
Towards Relevant Pedagogical Approaches and Reforms

Ghulam Omar Qargha and Rachel Dyl

July 2024

Working Paper #187.2
SPARKS Working Paper II

About the Center for Universal Education

Founded in 2002, the Center for Universal Education (CUE) is a leading policy center focused on universal quality education and skills development around the world. CUE collaborates closely with networks of international partners to accelerate educational progress and systems change so that all learners–especially the most marginalized–can develop a breadth of skills to thrive in a rapidly changing world.

Acknowledgements

We would like to express our gratitude to Gabrielle Arenge and Jim Williams, who reviewed draft reports, and Brad Olsen from the Center for Universal Education at the Brookings Institution for his editorial review. We also thank Rachael Graham Tin for her invaluable feedback during the writing process.

The Brookings Institution is a nonprofit organization based in Washington, D.C. Our mission is to conduct in-depth, nonpartisan research to improve policy and governance at local, national, and global levels. The conclusions and recommendations of any Brookings publication are solely those of its author(s), and do not reflect the views or policies of the Institution, its management, its other scholars, or the funders mentioned below.

The LEGO Foundation is a donor to the Brookings Institution. Brookings recognizes that the value it provides is in the absolute commitment to quality, independence, and impact. The findings, interpretations, and conclusions in this report are not influenced by any donation.

Table of Contents

Summary

In many low- and medium- income countries (LMICs), student-centered pedagogies are often implicitly or explicitly at the heart of innovative pedagogical reforms (Bremner, 2021). In recent years, there has been a growing emphasis on student-centered pedagogies, which aim to shift power dynamics, increase interaction, and prioritize the needs of learners. Many international agencies, governments, and education experts view these pedagogies as "best practices" or a pedagogical "silver bullet" to improve classroom practice. Despite popularity, there is a lack of agreement on what student-centered pedagogies mean in practice (Bremner, 2021; Britton et al., 2019; Schweisfurth, 2013).

Scholars have referred to student-centered pedagogies as a "hooray term"—something that sounds good but is difficult to identify and describe in practice (Bremner, 2021; Harber & Davies, 1997; Schweisfurth, 2013). The language used to promote innovative student-centered pedagogical approaches does not align with classroom practice. Studies show that most attempts to introduce student-centered pedagogical approaches have not significantly changed classroom practice. Teachers continue to use pedagogical approaches responsive to their existing education ecosystems and structures (Lu et al., 2017; Tabulawa, 2013).

This paper is the second in a series of three working papers meant to serve as references and conversation starters for policymakers and researchers as they navigate pedagogical reform for education system transformation in their local contexts. Together, the three working papers emphasize the need for more locally driven collaborative research on how the interaction of culture, local education ecosystems, and learning theories—collectively called Invisible Pedagogical Mindsets —influences teachers' pedagogical choices in the classroom.

1. **Working Paper I** explores **what** different definitions of "pedagogy" promote, emphasizes the importance of Invisible Pedagogical Mindsets for pedagogical reforms, and sets the stage for Working Papers II and III.
2. **Working Paper II** explains **why** it is important to examine Invisible Pedagogical Mindsets to inform local pedagogical reform agendas. Specifically, it outlines the challenges of a "best practices" approach, as seen with the generalized implementation of student-centered pedagogies.
3. **Working Paper III** details **how** collaborative research methodologies can help ensure pedagogical research considers Invisible Pedagogical Mindsets and responds to local contexts.

Working Paper II details why we recommend policymakers examine Invisible Pedagogical Mindsets in their local context to inform pedagogical reforms. We discuss the reasons why generalized "best practices"—namely "student-centered pedagogies" as currently implemented—do not often successfully transfer to new cultures, countries, and contexts and argue that many pedagogical reforms do not adequately consider the **Invisible Pedagogical Mindsets** embedded in each local context. **Appendix I** provides working definitions of key concepts from the three Working Papers.

A. Innovative pedagogical "best practices" are generally "student-centered" but lack contextualization.

As mentioned in **Working Paper I**, there is confusion around what "pedagogy" is and how to define it. There is further confusion about which pedagogical approaches maximize learning in the classroom. The term "innovative pedagogies" has been used to describe pedagogical approaches that contribute to transformative shifts in learning and that break away from standard ways of teaching and learning (Istance & Paniagua, 2019). An important theme of many pedagogical reforms designated as "innovative" is a shift in focus to view students as active, curious, and independent learners. As a result, many LMICs have championed student-centered pedagogies as innovative "best practices" despite confusion on what these approaches look like in practice.

In this section, we outline some attempts to describe student-centered pedagogies, which have only increased confusion about terminology and implementation.

1. There is confusion over which innovative pedagogical approaches will improve classroom practice.

When discussing innovative pedagogical approaches—many of which are student-centered—much of the literature groups them into theoretical categories, such as constructivist, inquiry-based, and collaborative. These categorizations are helpful for theoretical discussions but not for policy decision-making, because they do not identify what is and is not an innovative student-centered pedagogical approach.

More recently, there have been attempts to categorize innovative student-centered pedagogical approaches based on how teachers implement the approaches in their classroom. These categorization efforts range from cataloging individual pedagogical approaches to grouping classroom practices into frameworks, clusters, and taxonomies. For example, the OECD proposes 6 clusters of Innovative Pedagogies, connecting discrete pedagogical approaches with broader theoretical models related to innovation in the classroom. Some of the OECD's suggested clusters, such as blended learning, gamification, or experiential learning, have been used in classrooms to promote more horizontal relationships between teachers and students. The Eight Integrated Pedagogies, proposed by the Lego Foundation, are approaches focused on play. The Eight Integrated Pedagogies use broader theoretical categories, including cooperative, collaborative, and inquiry-based pedagogical approaches in the classroom. See **Appendix II** for a summary of categorizations of innovative pedagogical approaches.

Despite these efforts to categorize innovations, there remains confusion and a lack of consensus around pedagogical innovations to improve classroom practice. However, a common theme amongst innovations is the implicit or explicit centering of the student experience, often called "student-centered pedagogy."

2. There is no consensus on how to describe student-centered pedagogies.

Scholars have suggested dimensions, characteristics, and minimum standards to specifically describe student-centered pedagogies. For example, Schweisfurth (2013) defines student-centered pedagogies as "a pedagogical approach which gives learners, and demands from them, a relatively high level of active control over the context and process of learning," and she proposes seven minimum standards for student-centered pedagogies. However, Bremner (2021) argues that having minimum standards is

impossible because **there is no agreed-upon definition of student-centered pedagogies.** Instead, he proposes six general categories synthesized from previous literature. Starkey (2017), on the other hand, offers a yet broader conceptualization of student-centered pedagogies with three general dimensions that describe the intended goals of student-centered pedagogies.

Starkey's three dimensions can be seen as encompassing one or more of the standards and categories by Schweisfurth and Bremner. For example, Starkey's (2017) "agentic dimension," which focuses on empowering students as active participants in their learning, corresponds with Bremner's (2021) categories "adapting to student's needs" and "autonomy," which acknowledge the importance of students' independence and active participation in creating knowledge. Additionally, Starkey's (2017) "cognitive dimension," focused on the process of student learning, can encompass Schweisfurth's (2013) standards "building on learners' existing knowledge" and "content relevant to learners' lives," which focus on curating relevant content for students based on their prior learning. **Appendix III** provides a summary of Schweisfurth's, Bremner's, and Starkey's standards, categories, and dimensions of student-centered pedagogies.

Ultimately, we agree with Bremner's (2021) statement that, considering all the attempts to describe and define student-centered pedagogies, the term has been "defined to death," with little to no clarity about what student-centered pedagogies look like in different classroom contexts. In this working paper, we adopt a working definition of student-centered pedagogies as **pedagogical approaches that center the student learning experience and are relevant and responsive to the local context**. We contend that most of the teaching and learning that happens in classrooms is neither fully student- nor teacher-centered. Rather, it is a mixture of facilitation, collaboration, and transmission of knowledge based on the broader societal goals of education.

3. "Student-centered pedagogy" inherently implies a need for contextualization.

One of the biggest barriers to effective pedagogical reform is assuming that pedagogical approaches are generalizable and transferable "best practices." Many education reforms are "traveling policies" (Schweisfurth, 2013), meaning that they originated primarily in the West and were either adopted by local education actors or transferred by international actors without a thorough review of their appropriateness in local contexts (Meyer et al., 1997; Ramirez & Boli, 1987).

International organizations prefer a portfolio of "best practices" partly because implementing pre-packaged reforms is easier than supporting projects developed locally. Often these best practices are supported by experimental and quasi-experimental data presented as conclusive but which in fact is rarely conclusive or methodologically sound (Samoff, 1999; Steiner-Khamsi, 2013; Klees, 2008). In turn, local policymakers and other education actors often adopt the rhetoric of student-centered pedagogies that international organizations utilize as part of their education reform efforts to refer to existing local practices (Verger et al., 2016; Steiner-Khamsi, 2013). However, traditional teaching methods remain the norm in most classrooms (Bremner, 2021; Chafi & Elkhouzai, 2017; Tabulawa, 2013).

Traditional teaching methods, commonly referred to as teacher-centered pedagogy, generally promote lecture-style classes, rote memorization, or transmission of information to students. In traditional systems, the teacher is an authoritative and knowledgeable figure, and a large part of a teacher's job is to pass down their knowledge to students (Garrett, 2008). Therefore, teachers use pedagogical approaches aligned with transmitting knowledge, covering a set curriculum, and preparing students for religious,

moral, or national identities. Changing pedagogical practices faces resistance when the local education ecosystem supports traditional methods that teachers are familiar with. For example, in Tanzania, the introduction of student-centered pedagogy in secondary schools and within the pre-service teacher education program largely failed as teachers and students alike struggled to adapt to different models of power-sharing and interaction in the classroom (Vavrus, 2009).

Discussions about pedagogical innovations often do not consider the cultures, local education ecosystems, and learning theories that influence how pedagogies translate from policy to practice. Student-centered pedagogy requires a focus on the student's local context because there is no "universal student experience." Jones (1989) underlined the unique experience of each student, stating that "we cannot discuss what happens in the classroom and its significance for social change without at least an understanding of the structured, collective cultural interpretations of the pupils" (p. 22).

In recent years, the idea of "best practices" in education has been challenged to evolve to more of "best practices for each individual context" (Bremner, 2021; Schweisfurth, 2013). In the next section, we highlight the importance of contextualizing student-centered pedagogy to create meaningful learning experiences in different local contexts.

B. Many pedagogical reforms fail because innovative pedagogical approaches are treated as standalone interventions.

Innovative student-centered pedagogical approaches are intertwined with other aspects of effective teaching and the broader education ecosystem. Therefore, while isolated approaches may seem easier to implement and more efficient initially, they often prove ineffective in the long run and waste resources. Selectively introducing or improving pedagogical approaches responsive to the context is difficult but often more productive (Burden et al., 2019, Steiner-Khamsi, 2013).

Three of the most common mechanisms for implementing student-centered innovative pedagogical approaches are curriculum reform, teacher professional development, and education technology (EdTech). These mechanisms can be beneficial when integrated into a comprehensive, context-specific education ecosystem reform agenda. However, many reforms relying on one or more of these mechanisms have clashed with culture, local education ecosystems, and learning theories, limiting possibilities for effective implementation.

1. Competency-based curriculum reforms do not always translate to classroom practice.

Curriculum reform often precedes other types of pedagogical reforms because changing classroom practice requires first reimagining the guidelines and overarching goals of education in the local context. A curriculum, or plan for learning, sets the stage for the knowledge and skills students are expected to learn through education (NAEYC, nd). As societies evolve, curriculum reform is necessary to reimagine what students should learn and how and why certain content and skills will be prioritized. In this way, curriculum reform can become a highly political process, where questions of justice, power, and politics are sometimes challenged (Giroux, 1994). These changes require a systems-based approach to consider the constraints and opportunities within the existing education ecosystem and to promote dialogue amongst education actors regarding how curriculum changes affect classroom practice. However,

international donors often selectively fund only aspects of the curriculum that support their own package of "best practices," without taking a systems perspective. This causes a mismatch between standards, curriculum framework, teacher education, and student assessment (Steiner-Khamsi, 2013)

Based on the changes to curriculum, teachers must then figure out how to adapt, replace, or introduce new pedagogical approaches in their classroom practice. However, curriculum changes often occur without teacher consultation and without a systems approach to plan the changes needed to enact the new proposed curriculum in the local context (Gouëdard et al., 2020). Additionally, teachers often lack sufficient pre-service and in-service professional development, resources, and clear guidelines for how to implement new pedagogical approaches within the local education ecosystem constraints. Therefore, it is often challenging, if not impossible, for teachers to enact the required curriculum changes.

Despite a shift towards competency-based curricula (Gouëdard et al., 2020), there is often a gap between curriculum changes and implementation in the classroom. For example, new curricular policies in Vietnam aimed to shift pedagogical practice towards a more competency-based curriculum to incorporate 21st century skills into the national curriculum. However, challenges arose due to a lack of training and understanding around the new policy. Many teachers did not feel comfortable implementing the new curriculum strategies and struggled with resource shortages and overcrowded classrooms (Ho & Dimmock, 2023). Curriculum reform in Ireland also highlighted the need to think more deeply about how policy changes affect teachers in their classrooms. Project Maths in Ireland is the secondary school mathematics curriculum piloted between 2008 and 2010. Much like in Vietnam, this curriculum policy reform aimed to shift the focus towards real-life application of content. However, evaluations of the reform revealed that despite some positive effects (namely, students' more positive attitudes towards math), many teachers found the length of the curriculum unrealistic and struggled to meet the established expectations for completion (O'Meara & Milinkovic, 2023).

As many governments move to change curriculum priorities and guidelines, teachers and school leaders need support to effect positive change in the classroom (Kane & Steiner, 2019). To enact a competency-based curriculum successfully, education actors must consider the other parts of the education ecosystem that affect and will be affected by the change.

2. Decontextualized and isolated teacher professional development reforms have failed to bring about changes in classroom practice.

One of the most important mechanisms of pedagogical reform is teacher professional development. As research continues to show the crucial role of teachers in affecting student outcomes (Chu et al., 2015; Hattie, 2003; Istance & Paniagua, 2019; Metzler & Woessmann, 2010), many countries are investing significantly in pre-service and in-service teacher professional development as part of education reform efforts. For instance, China allocated approximately $84 million for teacher professional development in its National Training Plan for Grades 1–12 (Zhao, 2020), the United States spends around $18,000 per teacher annually (TNTP, 2015), in 25 of the OECD countries participation in professional development is mandatory for teachers at all levels of education (OECD, 2022), and in-service training is one of the major elements of spending in education in the Latin America and Caribbean region (Bruns & Luque, 2014). Additionally, between 2000 and 2012, nearly 114 of 171 World Bank education projects included teacher professional development (Popova et al. 2016).

However, teacher professional development for innovative student-centered pedagogical approaches is not effective if teachers lack the training, guidance, and materials for classroom implementation, and if teacher professional development is a standalone intervention without considering the entire education ecosystem (Popova et al., 2016). For example, a study of an in-service teacher program in South Africa revealed that a lack of resources and other situational constraints created challenges for teachers who tried to adopt more student-centered approaches in their classroom practice (Brodie et al., 2002). In Chile, the National Teacher Policy (*Política Nacional Docente*) included mentoring for new teachers and more structured professional development and career advancement. While some positive changes in teacher behavior have been noted, evaluations of the teacher professional development focused reform have highlighted the need to consider how the reform fits into the larger education ecosystem to assess long term impact on classroom practice (Mizala & Schneider, 2019).

Even if the teacher agrees with the purpose and goals of teacher professional development, effectively incorporating new strategies into classroom practice is not straightforward. The local education ecosystem must support reform, and the teacher must figure out how the new strategy fits with specific content and development needs of their students. They need to figure out how the new strategy affects their teaching plans, pace, organization, and assessment strategies that are all part of an effective teaching practice. All of this requires continuous professional development for teachers to learn, practice, and familiarize themselves with the innovative student-centered approaches and engage in reflection about their classroom practice. Lu et al. (2017) emphasize that although teacher professional development can be effective, teachers' beliefs, motivations, and skills are critical in applying the knowledge gained from professional development programs to their everyday practices.

3. Technology is a powerful tool if used correctly, but it is not a silver bullet to solve teaching and learning challenges.

Technology is often easier to use outside the classroom for administrative tasks than for assisting the teacher and complementing pedagogical approaches inside the classroom. In schools, technology can be easily used to streamline administrative tasks, implement large-scale education assessment and evaluations, and assist with credentialing, recordkeeping, teacher management, and communication. However, the use of technology for improving teaching and learning in the classroom is challenging (Wilichowski & Cobo, 2024; UNESCO, 2023).

Technology has been championed as an important aid to assist or replace teachers in school systems with a teacher shortage, high rates of absenteeism, or few teachers with pedagogical expertise (Ganimian et al., 2020). Scripted lesson plans (SLPs) have become prominent tools to help teachers streamline lesson planning and supplement their content knowledge. However, SLPs can have both positive and negative effects on teacher autonomy depending on the level of expertise of the teacher, their lesson planning style, and their existing content knowledge (Narayanan et al., 2024). If SLPs are individualized and contextualized for teachers, they can help teachers improve their classroom practice. However, if SLPs are too generalized and do not allow for teacher input, creativity, and adaptation, this can affect teacher's autonomy and create a false sense of improvement in classroom practice. Evaluations of the Success for All program, one of the most widely implemented scripted reading programs in the United States, show that incorporating technology is useful when it works to enhance rather than replace teacher instruction. In some schools, the Success for All program incorporated video lessons and computer-assisted tutoring

to supplement teacher instruction. Students who received both technology assistance and teacher instruction scored significantly better than those who only received teacher instruction or technology support (Chambers et al., 2005). A follow-up evaluation of the program found that while teachers saw the benefits of having technology support their instruction, there were many barriers, such as inadequate training to implement the program and limited time to cover other subjects (Quint et al., 2014). This evaluation shows that ultimately, without a systems approach and careful examination, these innovations will likely serve as bandages at best and distract from the real challenges of pedagogical reform.

Because good teachers are the most important actors for bringing pedagogies to life in their classrooms and ensuring quality education experiences for their students (Bruns & Luque, 2014), it is important to focus not on replacing the teacher but pairing technology innovations with a teachers' skillset. Numerous studies —especially during the COVID-19 pandemic—have shown that technology cannot replace teachers. Teachers are essential for guiding students' intellectual, social, and moral development and for understanding and responding to student emotions, a role that technology cannot fulfill (Collinson, 2001; Rifah & Zamahsari, 2022). In Brazil, primary public schools implemented the Khan Academy in Schools instructional videos to supplement regular math classes. While students' attitudes towards math improved, math proficiency did not drastically increase, and students had less teacher-led math instruction (Ferman et al., 2019). Rather than replacing teacher-led math instruction, the technology needed to pair with teachers' existing pedagogical approaches.

As the EdTech industry continues to grow, education systems will need to figure out how to harness technological innovations for improved learning outcomes by pairing technology with teachers' skillsets and experiences and successfully incorporating technology with existing curricula and pedagogical approaches. However, the easiest application of EdTech continues to be the smart integration of technology in administrative and managerial tasks outside the classroom.

4. Successful implementation of pedagogical approaches in the classroom requires contextualization.

As seen with the three mechanisms above, considering how innovative student-centered pedagogical approaches interact with the culture, local education ecosystem, and learning theories is essential for their success. The OECD's "Five C's Framework" (Peterson et al., 2018) provides an excellent summary of the ways pedagogical approaches can be mediated within different contexts (See **Table 1**). Although it is a framework to apply the OECD's Six Clusters of Innovative Pedagogy, we believe it is also useful to consider the "Five C's Framework" as principles of pedagogy in practice.

Table 1: Five Common Principles to Contextualize Pedagogical Approaches (Modified from Peterson et al., 2018)

Five Principles
1. A teacher never uses only one pedagogical method. Classroom practice is always a combination of multiple pedagogical approaches. Most often, the best innovation is how multiple innovations are combined to address each classroom's specific context.
2. Pedagogies are meant to teach something. Certain pedagogical approaches might be more appropriate for particular types of knowledge, competence, or interdisciplinary learning.
3. Learning does not happen in a vacuum. Pedagogical approaches need to be context-appropriate, in terms of the right fit for the culture, local education ecosystem, and dominant learning theories.
4. Pedagogical approaches need to be the right fit for the knowledge, skills, and worldview of the teacher.
5. Often, the policies, structures, values, and standard operating procedures in education ecosystems need to change, evolve, or transform for pedagogical approaches to take root in classrooms.

These five principles highlight the complexity of implementing pedagogical approaches within specific contexts. Specifically, they highlight the interaction of the three categories of Invisible Pedagogical Mindsets that influence the decision-making process of the teacher: culture, local education ecosystems, and learning theories. These principles demonstrate that for pedagogical approaches to fit a particular local context, they must align with the overall purposes of education in that local context. Finally, these principles underscore that learning and teaching is a dynamic activity and that teachers are professional active agents who curate the learning experience of their students based on their understanding of their local context.

C. Innovative pedagogical approaches need to be vetted and curated for each context.

Despite the confusion over terms, lack of agreement on universal discrete characteristics, and multiple categorizations, there is convergence around the fact that the application of innovative student-centered pedagogical approaches depends on the context and teachers' interpretations and implementation. This dependence on contextual factors makes it difficult, and maybe even counterproductive, to define **universal** best practice approaches to student-centered pedagogies. Rather, it calls for an understanding of how Invisible Pedagogical Mindsets impact classroom practice and a need to develop **localized** pedagogical approaches aligned with the overall education goals and environment of each context.

As outlined in **Working Paper I**, the Invisible Pedagogical Mindsets encompass the culture, local education ecosystem, learning theories, and all the underlying intangible elements that fall into these categories and influence pedagogy in the classroom. The introduction of innovative student-centered pedagogical approaches cannot be treated as a standalone intervention without considering the Invisible Pedagogical

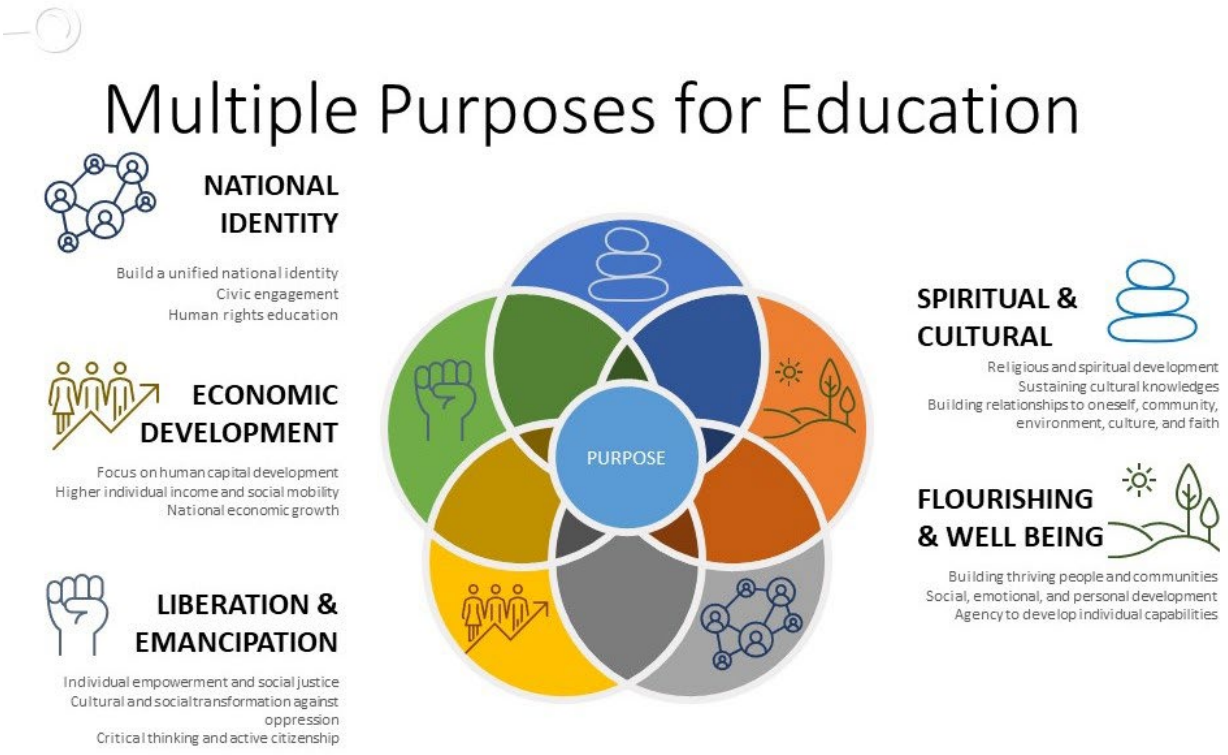
Mindsets. Each context requires different supports, strategies, and inputs to successfully translate new approaches to classroom practice.

In this section, we highlight the importance of three aspects of Invisible Pedagogical Mindsets that education policymakers and other actors must consider before instituting pedagogical reform. Specifically, we recommend education policymakers consider whether the proposed pedagogical reforms align with the overall purposes of education, the epistemologies, and the teachers' values and experiences. If the pedagogical reforms do not align with these and other elements of the local context, the likelihood of successful implementation of new pedagogical approaches diminishes.

1. Align pedagogical approaches with the multiple purposes of education in each context.

Pedagogical approaches are intimately tied to the purposes of education. Traditionally, education systems have focused on disciplining the mind, developing reasoning skills, and nurturing the moral, religious, and spiritual character of students. In many cases, education has been viewed as a public good and has focused on transmitting cultural heritage, preserving social norms, developing national identities, and teaching trades and other vocations for work (Langford & Langford, 1985: Olivia, 2009; Al-Attas, 1980; summarized in Morris & Qargha, 2023). As the figure below outlines, education has at least five major purposes.

Figure 1: Purposes of Education



One significant barrier to contextual policy reform in LMICs is the prevalence of "traveling policies"

(Schweisfurth, 2013; Steiner-Khamsi, 2013), which originate primarily in the West and are often adopted or transferred without thoroughly considering their suitability for local education goals, purposes, and values (Chisholm & Steiner-Khamsi, 2009; Ramirez & Boli, 1987; Verger et al., 2016). Despite efforts to promote innovative student-centered pedagogical approaches, many classroom practices remain unchanged (Bremner, 2021; Chafi & Elkhouzai, 2017), leading to what Tabulawa (2013) calls "tissue rejection." This rejection is partly because student-centered pedagogies align more with Western notions of liberation and well-being associated with Western democracy and individual freedom. Consequently, some education actors, including teachers, view these reforms as ideological impositions rooted in Western individualism and consumer capitalism, incompatible with local education purposes. Moreover, student-centered pedagogies might not align with the purposes of fostering unified national identities, culturally rooted individuals, and economic development. Education policymakers must ensure that the pedagogical reforms align with the culture, values, and goals of education in their local contexts.

2. *Align pedagogical reforms with local epistemologies—the different ways of knowing and learning that are valued.*

Despite being termed "innovative," the centering of pedagogical approaches on students' experience is not new. Various cultures, philosophers, and systems have shaped an engaging and relevant learning experience for students, including the Socratic method, Confucianist systems, and classical Islamic education theorists (Beckett & Horner, 2016; Britton et al., 2019; Günther, 2006). However, in recent decades, the Western interpretation of student-centered pedagogies, which is rooted in constructivism, has become widely adopted as "best practice." Without accounting for the different ways of knowing and learning that local contexts value, this Western approach to student-centered pedagogy will fail to change classroom practice for the better and will cause confusion and a mismatch between policy and practice (Bremner, 2021; Schweisfurth, 2013). Innovative pedagogical approaches must align with or complement the different ways of knowing and learning that cultures value and consider valid.

Traditional systems, including many modern schooling systems in LMICs, often view knowledge as an objective truth that is either rooted in past wisdom and transmitted through classical texts and religious teachings, or discovered through empirical observation of nature (Phillips, 1995; Al-Attas, 1980). Traditional systems often employ fixed curricula and learning standards and view teachers as authoritative figures that transmit knowledge to students.

In contrast, Western conceptions of student-centered pedagogies often view knowledge as a socially constructed activity, and at one extreme, this approach views knowledge as subjective and relative (Caduceus, 2023; Phillips, 1995). Student-centered pedagogies generally promote use of a flexible curricula; emphasize creating knowledge through consensus, dialogue, and experimentation; discourage direct transmission of knowledge from teachers to students; and promote the role of a teacher as facilitator or co-creator of knowledge with the student.

The debate on whether knowledge is objective or socially constructed is nuanced. For example, many traditional systems also contend that certain forms of knowledge are socially constructed (Al-Attas, 1980). Many advocates of constructivism believe that some areas of knowledge are fixed (Cobb & Bowers, 1999). Many scholars argue for a realist approach to knowledge, which acknowledges its social and historical construction without falling into relativism (Moore, 2000).

Because the epistemological tradition in each context might differ, researchers and policymakers need to understand and account for the various ways of knowing and learning and ensure that new pedagogical approaches complement local epistemologies.

3. Align pedagogical reforms with teachers' understanding, expertise, values, and lived experience.

The role of teachers is often viewed differently between traditional systems and what innovative, specifically student-centered, pedagogical approaches advocate. In traditional systems, teachers are often seen as authoritative figures who pass down knowledge and preserve social, religious, and cultural norms (Garrett, 2008). In contrast, student-centered pedagogies advocate for teachers to become facilitators to guide students in constructing knowledge, or sometimes even become equal collaborators with students and mutually discover knowledge, address current issues, and challenge existing systems and structures (Vavrus, 2009).

In reality, most of the teaching and learning that happens in classrooms is a mixture of facilitation, collaboration, and transmission of knowledge. Many traditional systems value the collaborative role of the teacher and many advocates of student-centered pedagogy acknowledge the role of a teacher as a transmitter of established knowledge to shape students' religious, moral, or national identities. Therefore, teacher-centered pedagogical approaches are not necessarily in opposition with student-centered pedagogical approaches: teachers combine approaches based on their goals and their students' needs in the classroom.

Ultimately, a teacher's pedagogical choices depend on their perspectives, the systems they work in, and the time and physical resources they bring with them to the classroom. Therefore, education policymakers need to consider the following challenges for pedagogical reform:

- If the specific pedagogical approaches are not aligned with teachers' perspectives, the approaches are unlikely to become part of classroom practice.
- Even if teachers incorporate the new approaches into their teaching plans, often the curriculum and assessment systems require teachers to cover a set curriculum within a fixed timeframe. While the new reform may call for collaborative approaches, existing structures within the school often inhibit changes.
- Reforms and changes to pedagogical approaches often require much more time than teachers realistically have with their students given curricular constraints.

Conclusion

Although there are many reasons why innovative student-centered pedagogies are not becoming part of classroom practice, in this working paper we have outlined some of the more prominent challenges to implementation. The dominant Western style of student-centered pedagogical approaches is based on a specific worldview, complex, and lacking clear definitions (Bremner, 2021; Schweisfurth, 2013). Additionally, when the implementation of student-centered pedagogies does not consider the culture, local education ecosystem, or learning theories—the Invisible Pedagogical Mindsets—it is unlikely that classroom practice will change. As such, education actors need to consider the Invisible Pedagogical

Mindsets that impact how pedagogical approaches—namely, student-centered pedagogical approaches—can be implemented within local and contexts.

In **Working Paper III**, we offer recommendations for addressing the challenges discussed here, to help researchers and policy makers begin to reform education systems. Specifically, we explore how locally led collaborative research on the Invisible Pedagogical Mindsets can help education policymakers and other education actors identify relevant and locally appropriate pedagogical reform approaches.

Appendix I: Working Definitions of Key Concepts

Approach: This term refers to the way teachers implement pedagogies in the classroom. A pedagogical approach is how they impart a certain pedagogy in practice. This term can also refer to the way in which someone conducts research.

Behaviorism: Behaviorism is a learning theory based on the premise that behaviors are learned or acquired through positive or negative reinforcement or different types of conditioning in their environment.

Breadth of Skills: A breadth of skills includes not just foundational literacy and numeracy but also socioemotional skills and other skills, attitudes, characteristics, and knowledge children need to thrive.

Chalk and Talk: "Chalk and talk" approaches generally refer to traditional teacher-centered pedagogical approaches where teachers rely on a chalkboard and lecture-style classes.

Community Collaborators: This term encompasses the multiple actors from the community involved in the SPARKS Research Policy Collaboratives that assist the local Facilitating Partner in the research process.

Competency-Based: In contrast to an objective-based education system, a competency-based system generally has a curriculum where success is measured based on whether students master certain competencies or skills. Generally, competency-based education systems utilize formative assessments to evaluate student progress and encourage individualized learning progressions for students.

Constructivism: Constructivism is an educational theory that emphasizes the active role of learners in constructing their understanding and knowledge of the world. In a constructivist framework, learners are seen as active participants in the learning process rather than passive recipients of information. They construct knowledge through experiences, reflection, and interaction with others.

Education Actors: This term encompasses the multiple actors involved in the local education ecosystem including policymakers, academics, teachers, students, journalists, donors, civil society organizations and other relevant community members.

Education Ecosystem: This term refers to education policies, curriculum, assessments, allocated instruction time, classroom sizes, and formal, informal, and non-formal local education outlets.

Education Technology (EdTech): This term refers to the intersection between technology and education and the practice of using technology to facilitate learning.

Education System Transformation: This term refers to the fundamental transformation of education systems which encourages reflection and reassessment of the goals and purposes of education in specific contexts to ensure alignment in a constantly changing and modernizing world.

Evidence-based decision-making: This term refers to an approach to decision-making where policymakers primarily base decisions on available evidence derived from rigorous, empirical research methods.

Evidence-informed decision-making: This term refers to an approach to decision-making where policymakers' decisions are informed by but not solely based on research evidence.

Innovative Pedagogies: This term refers to pedagogical approaches that are new to teachers and aim to significantly improve learning outcomes by creating transformative shifts in teaching and learning.

Invisible Pedagogical Mindsets: This term refers to the complex and multifaceted non-observable elements that influence pedagogical approaches and in turn are influenced by culture, local education ecosystems, and learning theories.

Leapfrogging: This term refers to the creation of transformative rather than incremental shifts to harness the power of innovation and improve learning.

Mechanism: This term refers to a way of doing something or achieving a goal. In this sense, a mechanism for implementing innovative pedagogies is the vehicle or process through which a pedagogical reform is implemented.

Objective-Based: Also referred to as "outcome-based," an objective-based education system has a curriculum or approach organized around achieving specific learning outcomes.

Pedagogical Reform: This term refers to policies or efforts that change existing pedagogical approaches in the classroom.

Pedagogy: We define "pedagogy" as the interaction of culture, local education ecosystems, and learning theories that shape how teachers teach and students learn.

Relevant: This term refers to pedagogical approaches applicable to a specific context.

Scripted Lesson Plans (SLPs): Scripted lesson plans are an instructional approach in which teachers follow pre-written scripts or detailed lesson plans during teaching sessions.

Structured Pedagogy: This term refers to pedagogical approaches that are organized, systematic, and planned. Structured pedagogy emphasizes the importance of clear instruction, explicit teaching methods, and the use of instructional materials. Examples include breaking down learning objectives into smaller, manageable steps, sequencing learning activities in a logical order, and providing scaffolding and support to learners as they progress.

Student-Centered Pedagogy: Despite varying definitions of student-centered pedagogies, most scholars agree on four central themes: active participation, relevant content, respectful classroom environments, and formative assessment. The student is central in the learning process.

Teacher-Centered Pedagogy: This term refers to an instructional approach in which the teacher plays a central role in the learning process. In this approach, the teacher serves as the primary source of knowledge and directs the flow of instruction.

Traveling Policies: These policies originated in the West and have been adopted by education actors in other localities.

21st Century Skills: This term refers to skills identified as required for success in the 21st century, including critical thinking and problem solving, creativity, and collaboration.

Appendix II: Categorizing Innovative Pedagogical Approaches

Taxonomy	Categories	Description
Innovations Catalog (CUE)	21st century skills (digital skills, inter/intrapersonal skills, citizenship) and academic skills (literacy, numeracy, science, and other academic skills)	This catalog of 2,855 innovative pedagogical approaches offers valuable insights into diverse pedagogical approaches employed across various contexts (Winthrop et al., 2017).
Ten Sketches (Open University)	AI in education, multimodal pedagogy, social justice pedagogy, multisensory learning, online laboratories, post-humanist perspectives, esports, learning from animations, online laboratories, etc.	This annual series, started in 2012, spotlights 10 education innovations in use but not yet adopted globally. Some categories recur over multiple years. The series is a valuable resource for understanding pedagogical approaches and innovation trends (Kukulska-Hulme et al., 2023).
Six Clusters of Innovative Pedagogy (OECD, CUE)	Blended learning, gamification, computational thinking, experiential learning, embodied learning, multiliteracies, and discussion	The OECD proposes six clusters as a "first step" towards an international consensus around pedagogical innovations to promote more "interactive, horizontal, and caring relationships with students." The six clusters connect discrete practices to broader theoretical models. Each cluster is broad enough to help group teaching approaches and specific enough to translate learning principles into teaching practices without being prescriptive. The six clusters can help group new pedagogical practices (Paniagua & Istance, 2018).
Five Clusters (CIVIS)	Technology-based, methodology-based, skill-based, and context-driven pedagogical innovations, as well as other examples that don't fall in the above categories	This taxonomy of pedagogical innovations is designed as a flexible framework to identify pedagogical approaches based on four broad categories and one "other" category. Like the OECD clusters, this categorization can help group pedagogical innovations. However, these clusters are broader and more

		descriptive than the OECD clusters (Ciolan et al., 2018).
Eight Integrated Pedagogies (Lego)	Active, cooperative and collaborative, experiential, guided discovery, inquiry-based, problem-based, project-based, Montessori	This list outlines eight pedagogical approaches focused on learning through play to create meaningful, actively engaging, iterative, socially interactive, and joyful learning experiences for children. This categorization can help group pedagogical approaches to identify how "play" is incorporated into new pedagogical reforms (Parker & Stjerne Thomsen, 2019).

Appendix III: Standards, Characteristics, and Dimensions of Student-Centered Pedagogies

Schweisfurth's 7 Minimum Standards	Bremner's 6 Categories	Starkey's 3 Dimensions
Engaging, motivating lessons: Lessons are curated to motivate students in different contexts.	Active participation and interaction between students: Learners actively participate in their education, and the classroom is oriented around student-teacher interactions.	Cognitive: The cognitive dimension focuses on the student learning process, recognizing the students' role in making meaning and the teachers' role in building lessons from students' prior knowledge.
Building on learners' existing knowledge: Lessons consider students' previous knowledge and allow them to add to this knowledge base.	Adapting to needs, including human needs of students: Learning and approaches consider students' prior knowledge, needs, and preferences.	Agentic: The agentic dimension focuses on empowering students as active participants in their learning who set goals and reflect on their progression.
Mutual respect between teachers and students: Classroom atmosphere is respectful, and disciplinary measures are appropriate.	Autonomy (including metacognition): Learners are granted the independence to complete work independently and develop skills.	Humanist: The humanist dimension focuses on acknowledging students as individuals with diverse interests, needs, and cultures.
Content relevant to learners' lives: Pedagogies consider the local contexts, languages, and other factors that make learning more accessible to students.	Relevant skills: The content students learn is relevant to their lives, contexts, and the skills they need to thrive in the 21st century.	
Dialogue, not just transmission: Pedagogical approaches vary beyond lecture-style/ knowledge-transmission-focused learning.	Power sharing: Students are involved in decision-making around learning, and traditional power dynamics are challenged.	
Skills and attitude outcomes and content outcomes: Learning is not solely focused on content outcomes but also	Formative assessment: Learning is measured in various ways, with formative assessments to measure ongoing learning	

considers critical thinking and other attitudinal competencies.	rather than just summative results.	
Assessment consistent with the principles: Assessment techniques acknowledge diversity of individual learning and are tailored to different pedagogical approaches.		

References

Al-Attas, M. N. (1980). *The concept of education in Islam* (pp. 1-17). Kuala Lumpur: Muslim Youth Movement of Malaysia.

Beckett, C., & Horner, N. (2016). *Essential theory for social work practice* (Second edition). SAGE Publications Ltd.

Bremner, N. (2021). What is Learner-Centered Education? A Quantitative Study of English Language Teachers' Perspectives. *The Electronic Journal for English as a Second Language*, *25*(2).

Britton, A., Schweisfurth, M., & Slade, B. (2019). Of myths and monitoring: Learner-centred education as a political project in Scotland. Comparative Education, 55(1), 30–46. https://doi.org/10.1080/03050068.2018.1541667

Brodie, K., Lelliott, A., & Davis, H. (2002). Forms and substance in learner-centred teaching: teachers' take-up from an in-service programme in South Africa. *Teaching and Teacher Education*, *18*(5), 541–559. https://doi.org/10.1016/S0742-051X(02)00015-X

Bruns, B., & Luque, J. (2014). *Great Teachers: How to Raise Student Learning in Latin America and the Caribbean*. The World Bank. https://doi.org/10.1596/978-1-4648-0151-8

Burden, K., Kearney, M., Schuck, S., & Hall, T. (2019). Investigating the use of innovative mobile pedagogies for school-aged students: A systematic literature review. *Computers & Education*, *138*, 83–100. https://doi.org/10.1016/j.compedu.2019.04.008

Chafi, E., & Elkhouzai, E. (2017). Reculturing Pedagogical Practice: Probing Teachers' Cultural Models of Pedagogy. *International Journal of Education and Literacy Studies*, *5*(1), 78. https://doi.org/10.7575/aiac.ijels.v.5n.1p.78

Chambers, B., Slavin, R. E., Madden, N. A., Abrami, P. C., Tucker, B. J., Cheung, A., & Gifford, R. (2005). *Technology Infusion in Success for All: Reading Outcomes for First-Graders*. https://www.successforall.org/wp-content/uploads/2016/02/Technology_Infusion_11_04_05.pdf

Chisholm, L. & Steiner-Khamsi, G., eds (2009). *South-South Cooperation in Education and Development.* New York and Capetown, South Africa: Teachers College Press and HRSC Press, 304 pages.

Chu W. H., Lin D. Y., Chen T. Y., Tsai P. S., Wang C. H. (2015). The relationships between ambiguity tolerance, learning strategies, and learning Chinese as a second language. *System* 49 1–16. 10.1016/j.system.2014.10.015

Ciolan, L., Iucu, R., Nedelcu, A., Mironov, C., & Cartis, A. (2018). *Innovative Pedagogies: Ways into the Process of Learning Transformation*. CIVIS. https://civis.eu/storage/files/innovative-pedagogies-ways-into-the-process-of-learning-transformation.pdf

Cobb, P., & Bowers, J. (1999). Cognitive and situated learning perspectives in theory and practice. *Educational researcher*, *28*(2), 4-15.

Collinson, V. (2001). Intellectual, social, and moral development: Why technology cannot replace teachers. The High School Journal, 85(1), 35-44.

DAP: Planning and Implementing an Engaging Curriculum to Achieve Meaningful Goals. (n.d.). NAEYC. Retrieved January 22, 2024, from https://www.naeyc.org/resources/position-statements/dap/planning-curriculum

Ferman, B., Finamor, L., & Lima, L. (2019, June 27). *Are Public Schools Ready to Integrate Math Classes with Khan Academy?* [MPRA Paper]. https://mpra.ub.uni-muenchen.de/99845/

Ganimian, A., Hess, F., & Vegas, E. (2020). *Realizing the promise: How can education technology improve learning for all?* Brookings. Retrieved October 30, 2023, from https://www.brookings.edu/articles/realizing-the-promise-how-can-education-technology-improve-learning-for-all/

Garrett, T. (2008). Student-Centered and Teacher-Centered Classroom Management: A Case Study of Three Elementary Teachers. *Journal of Classroom Interaction*, *43*(1), 34–47.

Giroux, H. A. (1994). Teachers, Public Life, and Curriculum Reform. *Peabody Journal of Education*, *69*(3), 35–47. https://www.jstor.org/stable/1492887

Gouëdard, P., Pont, B., Hyttinen, S., & Huang, P. (2020). *Curriculum reform: A literature review to support effective implementation*. OECD. https://doi.org/10.1787/efe8a48c-en

Günther, S. (2006). Be Masters in That You Teach and Continue to Learn: Medieval Muslim Thinkers on Educational Theory. *Comparative Education Review*, *50*(3), 367–388. https://doi.org/10.1086/503881

Harber, C., & Davies, L. (1997). School Management and Effectiveness in Developing Countries. The Post Bureaucratic School. London: Cassel.

Hattie, J.A.C. (2003, October). Teachers make a difference: What is the research evidence? Paper presented at the Building Teacher Quality: What does the research tell us ACER Research Conference, Melbourne, Australia. Retrieved from http://research.acer.edu.au/research_conference_2003/4/

Ho, L., & Dimmock, C. (2023). Changing teachers' beliefs and practices towards learner-centred education: experiences and lessons from Vietnam's education system reforms. *PRACTICE*, 1–20. https://doi.org/10.1080/25783858.2023.2177191

Istance, D., & Paniagua, A. (2019). *Learning to Leapfrog: Innovative Pedagogies to Transform Education*. Center for Universal Education at The Brookings Institution. https://eric.ed.gov/?id=ED602937

Jones, A. (1989). The Cultural Production of Classroom Practice. *British Journal of Sociology of Education*, *10*(1), 19–31. https://www.jstor.org/stable/1393007

Kane, T. J., & Steiner, D. M. (2019, April 2). Don't Give Up on Curriculum Reform Just Yet. *Education Week*. https://www.edweek.org/leadership/opinion-dont-give-up-on-curriculum-reform-just-yet/2019/04

Klees, S. J. (2008). Reflections on theory, method, and practice in comparative and international education. *Comparative Education Review*, *52*(3), 301-328.

Kukulska-Hulme, A., Bossu, C., Charitonos, K., Coughlan, T., Deacon, A., Deane, N., Ferguson, R., Heredotou, C., Huang, C.-W., Mayisela, T., Rets, I., Sargent, J., Scanlon, E., Small, J., Walji, S., Weller, M., & Whitelock, D. (2023). *Innovating Pedagogy 2023* (11; Open University Innovation Report). https://prismic-io.s3.amazonaws.com/ou-iet/4acfab6d-4e5c-4bbd-9bda-4f15242652f2_Innovating+Pedagogy+2023.pdf

Langford, G., & Langford, G. (1985). *Education, persons and society* (pp. 159-192). Macmillan Education UK.

Lu, M., Loyalka, P., Shi, Y., Chang, F., Liu, C., & Rozelle, S. (2017). The Impact of Teacher Professional Development Programs on Student Achievement in Rural China. *Stanford Center for International Development*, *Working Paper No. 600*.

Metzler, J., & Woessmann, L. (2010). The Impact of Teacher Subject Knowledge on Student Achievement: Evidence from Within-Teacher Within-Student Variation. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1631134

Meyer, J. W., Boli, J., Thomas, G. M., & Ramirez, F. O. (1997). World Society and the Nation-State. *American Journal of Sociology*, *103*(1), 144–181. https://doi.org/10.1086/231174

Mizala, A., & Schneider, B. R. (2014). Negotiating Education Reform: Teacher Evaluations and Incentives in Chile (1990–2010). *Governance*, *27*(1), 87–109. https://doi.org/10.1111/gove.12020

Moore, R. (2000). For knowledge: Tradition, progressivism and progress in education—reconstructing the curriculum debate. *Cambridge Journal of Education*, *30*(1), 17-36.

Morris, E. M., & Qargha, G. O. (2023, February 16). In the quest to transform education, putting purpose at the center is key. *The Brookings Institution*. https://www.brookings.edu/articles/in-the-quest-to-transform-education-putting-purpose-at-the-center-is-key/

Narayanan, M., Shields, A. L., & Delhagen, T. J. (2024). Autonomy in the spaces: teacher autonomy, scripted lessons, and the changing role of teachers. *Journal of Curriculum Studies*, *56*(1), 17–34.

https://doi.org/10.1080/00220272.2023.2297229

OECD. (2022). *Education at a Glance 2022: OECD Indicators*. OECD. https://doi.org/10.1787/3197152b-en

Olivia, P. F. (2009). Developing the curriculum. Seventh Edition. Pearson. NY

O'Meara, N., & Milinkovic, J. (2023). Learning from the Past: Case Studies of Past 'Local' Curriculum Reforms. In Y. Shimizu & R. Vithal (Eds.), *Mathematics Curriculum Reforms Around the World* (pp. 67–85). Springer International Publishing. https://doi.org/10.1007/978-3-031-13548-4_5

Paniagua, A., & Istance, D. (2018). *Teachers as Designers of Learning Environments: The Importance of Innovative Pedagogies*. OECD. https://doi.org/10.1787/9789264085374-en

Parker, R., & Stjerne Thomsen, B. (2019). *Learning through play at school: a study of playful integrated pedagogies that foster children's holistic skills development in the primary school classroom*. LEGO Foundation.

Pedagogical approaches to teaching in higher education. (2023, April 20). *Caduceus International Publishing*. https://www.cipcourses.com/blog/pedagogical-approaches-to-teaching-in-higher-education/

Peterson, A., Dumont, H., Lafuente, M., & Law, N. (2018). *Understanding Innovative Pedagogies: Key Themes to Analyse New Approaches to Teaching and Learning* (Working Paper No. 172; OECD Education Working Paper Series). Organization for Economic Co-operation and Development.

Phillips, D. C. (1995). The good, the bad, and the ugly: The many faces of constructivism. *Educational researcher*, *24*(7), 5-12.

Popova, Anna, E., David K., & Arancibia, V. (2016, June 22). *Inside In-Service Teacher Training: What Works and How Do We Measure it?*

Quint, J. C., Balu, R., DeLaurentis, M., Rappaport, S., Smith, T. J., & Zhu, P. (2014). *The Success For All Model of School Reform: Interim Findings from the Investing in Innovation (i3) Scale-Up*. mdrc. https://www.mdrc.org/sites/default/files/success_for_all_interim_findings.pdf

Ramirez, F. O., & Boli, J. (1987). The Political Construction of Mass Schooling: European Origins and Worldwide Institutionalization. *Sociology of Education*, *60*(1), 2. https://doi.org/10.2307/2112615

Rifah, L., & Zamahsari, G. K. (2022, November). Can Technology Replace the Teachers' Role in Higher Education Settings? A Systematic Literature Review. In Proceedings of the 7th International Conference on Sustainable Information Engineering and Technology (pp. 217-221).

Samoff, J. (1999). Education sector analysis in Africa: limited national control and even less national ownership. *International Journal of Educational Development*, *19*(4–5), 249–272. https://doi.org/10.1016/S0738-0593(99)00028-0

Schweisfurth, M. (2013). *Learner-centred Education in International Perspective* (0 ed.). Routledge. https://doi.org/10.4324/9780203817438

Starkey, L. (2017). Three dimensions of student-centred education: a framework for policy and practice. *Critical Studies in Education*, *60*(3), 375–390. https://doi.org/10.1080/17508487.2017.1281829

Steiner-Khamsi, G. (2013). What is Wrong with the 'What-Went-Right' Approach in Educational Policy? *European Educational Research Journal*, *12*(1), 20–33. https://doi.org/10.2304/eerj.2013.12.1.20

Tabulawa, R. (2013). *Teaching and learning in context: why pedagogical reforms fail in sub-Saharan Africa*. CODESRIA, Council for the Development of Social Science Research in Africa.

TNTP. (2015). *The Mirage: Confronting the Hard Truth About Our Quest for Teacher Development*. https://tntp.org/assets/documents/TNTP-Mirage_2015.pdf

UNESCO. 2023. Global Education Monitoring Report 2023: Technology in education – A tool on whose terms? Paris, UNESCO

Vavrus, F. (2009). The cultural politics of constructivist pedagogies: Teacher education reform in the United Republic of Tanzania. *International Journal of Educational Development*, *29*(3), 303–311.

Verger, A., Lubienski, C. & Steiner-Khamsi, G., eds (2016). *The Global Education Industry. World Yearbook of Education 2016.* London and New York: Routledge.

Wilichowski, T., & Cobo, C. (2024). *Separating the hype from reality: Insights and recommendations on how generative AI can enrich teaching and learning*. World Bank Blogs. Retrieved March 22, 2024, from https://blogs.worldbank.org/en/education/separating-the-hype-from-reality--insights-and-recommendations-o

Winthrop, R., McGivney, E., & Barton, A. (2017). *Can we leapfrog? The potential of education innovations to rapidly accelerate progress*. https://www.brookings.edu/?p=449398&post_type=article&preview_id=449398

Zhao, W. (2020). Epistemological flashpoint in China's classroom reform: (How) can a 'Confucian do-after-me pedagogy' cultivate critical thinking? *Journal of Curriculum Studies*, *52*(1), 101–117. https://doi.org/10.1080/00220272.2019.1641844

BROOKINGS

1775 Massachusetts Ave NW,
Washington, DC 20036
(202) 797-6000
www.brookings.edu