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Using Data and Technology to Improve Education: Insights from Indonesia’s *Merdeka Belajar* Reform

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In 2019, Indonesia launched *Merdeka Belajar*, a systemic reform aimed to improve learning quality for all students.

This reform is implemented in a system that comprises of:

- >3.3 million teachers,
- >46 million students across >430 thousand schools
- managed by 554 local governments.

**Student learning outcomes:** foundational competencies in *Profil Pelajar Pancasila*

**School transformation:** instructional leadership, teacher reflection and collaboration, and student-oriented teaching practices

- **Teacher training:** improve competencies and teaching quality through collaborative reflection on practice
- **School principal and supervisor recruitment and training:** emphasis on instructional leadership and change management
- **Teaching and learning:** national curriculum framework and teaching resources which focus on foundational competencies
- **Evaluation and accountability:** provide feedback on and incentives for teaching and learning quality in each school and district

**Digital technologies | Partnerships with stakeholders | Asymmetric and affirmative provision of resources**
As part of the reform, a national assessment collects data on teaching and learning from 4.3 million teachers and principals, 6.9 million students in 510 thousand schools.

1. Communicates reform vision and goal
   - Quality & equity of student learning (literacy)
   - Deep and engaging teaching
   - Safe and inclusive school climate
   - Teacher collaborative learning and reflection

2. Evidence-based planning & evaluation
   - Schools reflect on their teaching quality and climate; then make plans for improvement.
   - Local governments reflect on areas of strengths and weaknesses; prioritize resources for struggling schools.
   - Central gov monitors progress; evaluates and improves programs.

3. Provide incentives for behavior change
   - Financial incentive for high performing and most improving schools and districts.
   - Automatic extension of school accreditation status (saves time, resource).

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Figure 1 District Education Report Platform
Key programs in the *Merdeka Belajar* reform rely on digital technology and platforms for scale, speed, and effectiveness of implementation.

1. Data collection & analysis
   - The literacy tests are computer adaptive.
   - Online testing, can be done with standard laptops; does not require local server.
   - Automatic scoring of multiple choice and short essay responses. Analysis finalised and reported within 2-3 months.
   - Collection of data on teaching practices from hundreds of thousand of teachers.

2. Personalised experiences
   - With Platform *Merdeka Mengajar*, teachers can choose training modules and engage with online communities that fit their needs. They can also use teaching materials that are relevant to their context.
   - With Platform *Rapor Pendidikan*, school principals and district education officials are provided with recommendations of programs based on their own data.
The 2023 National Assessment results indicate that the *Merdeka Belajar* reform is beginning to show positive impact on student learning.

- Compared to schools still using the previous 2013 National Curriculum, schools implementing the new Merdeka Curriculum show better learning gains from 2021 to 2023.

- Learning gains are associated with period of implementation of the Merdeka Curriculum, with schools implementing the since 2021 showing the largest gains.

- This pattern is consistent across domains (reading and mathematics), levels of education (primary, lower secondary, and upper secondary), and regions (remote, rural, and urban).
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