school uniforms to ensure that these are not made more important than provision of resources for learning and home study.

4. The QEM study highlights the relationship between higher student performance and the provision of good infrastructure, qualified personnel and learning resources. This has implications for how schools, local and national governments allocate and manage resources. It also underscores the importance of monitoring and targeting funds to areas of need.

5. Efforts to ensure the provision of qualified teachers and principals must become more urgent and more strategic. The high wages cost and the inefficient distribution of qualified teachers are difficult to address in a decentralised environment. Continuing positive dialogue and policy development are needed on redeployment, multigrade teaching and dual subject specialisation as being efficient and educationally sound strategies for ensuring that students have qualified teachers.

What can principals and teachers do right now, without extra financial resources, to lift the performance of Madrasah students?

1. Principals and teachers can promote high expectations. Through parent meetings and formal and informal communications with community they can continually raise awareness of the role of high expectations and home study resources for success in learning. In regular school assemblies and class meetings, teachers can promote and discuss role models and “heroes” to encourage students to have high expectations and believe that they can achieve their goals. Schools should review their practices in grade repetition as this generally has more negative than positive impacts on performance.

2. Principals can take a stronger education—

al leadership role within their schools by making regular visits to teachers in their classrooms; observing and providing feedback on teaching practice; assisting teachers to develop effective lesson plans and regular assessment including provision of meaningful feedback to students; to establish good homework habits and to develop positive classroom environments.

3. Teachers can enhance boys’ and girls’ variable performances in English, Bahasa Indonesia and Science. Through the school level curriculum development process, teachers can investigate gender differences in performance and develop activities such as extra reading time with appropriate and interesting materials for boys, debating and public speaking in English as well as Bahasa Indonesia, develop science activities related to girls’ interests and consider establishing single sex classes in these subjects for a period of time.

4. Principals and School Committees can discuss and prioritise R&D expenditure for educational equipment and teaching and learning resources, especially library books and science equipment. This may be more effective than hiring additional teachers. Teachers may need support in the effective use and management of new resources.

5. Principals and School Committees can develop an annual and longer term development plan (3—5 years) to improve the condition of their school through regular building maintenance and systematically increasing resources. This process should be guided by school self—evaluation against the requirements for school accreditation and district plans for meetings the MSS. School supervisors have an important role in supporting this planning process.

What can the local and national government do to lift the performance of madrasah?

1. Commit to regular monitoring of Madrasah school performance and school conditions by supervisors and district-level officials, supplemented by annual or bi-annual national sample based monitoring of Madrasah.

2. Prioritise and support school-based in—

service professional learning which focuses on classroom practice.

3. Strengthen leadership programs for principals to ensure they can provide effective pedagogical leadership in their schools.

4. Review the plan for upgrading teachers’ and principals’ qualifications and ensure that all Madrasah have a critical mass of qualified teachers and all schools have a qualified principal.

5. Review teacher deployment and appointment practices to ensure Madrasah in disadvantaged areas have sufficient qualified teachers.

6. Identify regional and district patterns in education resourcing and expenditure and formulate intervention plans to equalise school performance and school conditions.

School Life Questionnaire. This measures students’ perceptions and attitudes about schooling—relationships with teachers, relevance of schooling to their future, sense of achievement, feelings of self-worth and the social integration of the school. The questionnaire is widely used in international programs as a measure of the affective domain of education.

Summary of Findings

1. Across the 3 regions, student achievement in Maths, Science and English was well below the international average on items drawn from international tests such as the Programme for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS).

2. Positive correlations were found between student achievement and home-background factors such as level of resources, including books and study resources in the home, students’ aspirations and parents’ level of education.

3. School factors associated with higher performance included the qualifications and professional practice of teachers and principals, the number of resources in the school and the amount of instruction and homework. While larger school size seemed to be associated with higher achievement, it was not school size per se that made the difference, but the association of increased size with factors such as more resources, more qualified teachers and better facilities.

4. There were some gender differences in achievement which are common across many countries: girls performed better than boys in the language tests (English and Bahasa Indonesia) and boys performed better than girls on Science.

The purpose of the study was to investigate the quality of education using international-style tests of achievement and to examine the relationship between achievement and school and home background factors.

Instruments

Four tests of academic achievement. The Maths and Science tests each comprised 30 multiple choice items and included link items from Program for International Student Assessment (PISA), Trends in Mathematics and Science Study (TIMSS) and the International Benchmark Tests of Mathematics. The English test was adapted from the Competency in English as a Foreign Language Assessment (CEFALa) which is a reading comprehension test in English. The Bahasa Indonesia test was specified for the study.

Why was the QEM study conducted?

Madrasah constitute an established, and still growing, sub-sector in education. Because of their history, they are more prevalent in rural and disadvantaged areas—the very areas where the most strategic effort will be required to achieve national goals for participation and quality. These are also the areas with the lowest achievement on both international tests and national exams and therefore in most need of education intervention.

Furthermore, in an era of increased accountability, parents, community and government want information about the academic outcomes of Madrasah which they expect to deliver high quality education, both religious and academic.

Overview of the study

Program for International Student Assessment (PISA) Trends in Mathematics and Science Study (TIMSS) and the International Benchmark Tests of Mathematics. The English test was adapted from the Competency in English as a Foreign Language Assessment (CEFALa) which is a reading comprehension test in English. The Bahasa Indonesia test was specifically developed for the study.

Prepared by the Education Unit, World Bank Indonesia

Based on Mohammad Ali, Julie Kos, Petra Lietz, Dita Nusroho, Furqon, Asmawi Zainul, Emi Emilia, 2010

“Quality of Education in Madrasah: Main Study”, joint publication of AusAID and World Bank Indonesia.
Potential Value of the Study

The study is the first international-style assessment of learning outcomes in Maths, Science, English and Bahasa Indonesia for a nationally representative sample of Madrasah. It provides a benchmark of Madrasah student performance and the factors which are associated with student achievement. A legacy of the study is the high quality instruments and methodology that, with minimal refinement, can be used for regular sampling in both MDNE and MDRA systems.

1. Home background:

Socio-economic status brings a powerful advantage:

In each of the regions, but especially in the East and West, students with the most resources at home, both educational (books, magazines, study materials) and general material resources (such as electricity, TV, radio, piped water, and motorbike) performed better on all the tests. The number of books students had access to at home was more strongly correlated with achievement – eg. language spoken at home. Students who had a separate, furnished principal’s office. The average age was 44 years; principals primarily allocated to provision of uniforms and other non-academic issues. Schools and parents in disadvantaged areas. Schools and parents should be encouraged to review their local school policy on the number and costs of resources the student is able to access.

2. Student performance and attitudes:

Overall, gender differences were not significant but girls scored better in the language tests and boys scored better in Science. Importantly, students who had high aspirations performed better on all tests. Conversely, students who had repeated a grade at some point in their schooling performed more poorly on all tests. Adolescents did not appear to be correlated with performance. Across all schools, students generally felt positively about the things they were learning at school and the relevance of these things to their future lives. Students who were able to borrow books from their library and who had teachers who marked the set homework, generally had more positive attitudes towards schooling. Students in schools that were in poor condition and were in poor condition generally had lower achievement scores on all the tests.

In education research, differences in students’ achievement scores are generally attributed to 3 main sources - student level factors, classroom level factors and school level factors. Accurate measures of the relative contribution to achievement scores from these 3 sources help policy-makers to understand what influences learning and where their interventions can be focused. The higher the level of variation attributable to within-school (classroom level) or between-school differences, the more the scope for improvement.

For example, on the QEM Maths results, 64% of the variance was attributed to individual student factors and 36% to school factors. This 36% is both good and bad news. The bad news is that schools are not equal in their impact on student learning. Some schools are producing higher outcomes, regardless of the ability of students or the type of home background. This finding is similar to the 2006 PISA results for Indonesia on which 35% of the variation in Maths scores was due to between-school differences. The good news is that the study has clearly identified some of the school level factors that make a positive difference to achievement.

How big a difference can schools make to student achievement?

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Table: Student level vs school level sources of variation in student achievement scores on QEM and PISA results.

<table>
<thead>
<tr>
<th>% variance and source</th>
<th>QEM Indonesia 2009</th>
<th>PISA Indonesia 2006</th>
<th>PISA OECD countries 2006</th>
<th>PISA Non-OECD countries 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student factors</td>
<td>44</td>
<td>63.2</td>
<td>60</td>
<td>71.2</td>
</tr>
<tr>
<td>School factors</td>
<td>56</td>
<td>36.8</td>
<td>40</td>
<td>28.8</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

3. School factors:

Teachers make a difference: Across all schools, but especially in the East and West, students scored better in schools with more highly qualified teachers. Students also scored higher in schools where there were more lessons per week, where teachers had lesson plans and objectives for the class, where teachers gave weekly assessments and feedback to students and set homework frequencies. Whether or not teachers marked the set homework did not seem to be related to test performance.

Principals make a difference: In the West, schools with more highly educated principals performed better than others. In the East, students in schools where principals made regular visits to classrooms and gave feedback to teachers about their performance.

In the overall sample, 90% of principals were male; the average age was 44 years; 70% held a bachelor’s degree, and around 90% of principals taught 9 lessons per week.

School resources make a difference: School resources were positively correlated with student achievement, even after the impact of higher socio-economic status was taken into account. Some resources were more important in some regions than others – for example, in the East, students in schools with science laboratories and science equipment scored higher than others. In the West, achievement differences were associated with the school having a separate, furnished principal’s office. In Java, the overall physical condition of school buildings was correlated with achievement.

RECOMMENDATIONS

Key Policy issues for consideration

1. Regular and reliable monitoring of student achievement to an important step in efforts to improve quality of education. Indonesian policy makers cannot rely on national exams and international testing programs to provide the kind of information that is useful for improvement, especially for a sub-sector. A well designed and managed sample testing program is an affordable solution and when implemented with collection of background data on school and student characteristics allows policy makers to prioritise programs and expenditure to make the most difference.

2. The QEM study identified significant correlates of achievement which can be readily addressed by schools now, at little additional cost, but these actions require leadership from principals and supervisors.

3. Principals and teachers can influence parents to support their children’s learning by prioritising their limited financial resources for education to books and home study materials. A recent study and much anecdotal evidence suggest that since school fees have been largely abolished, parents’ education expenditure is primarily allocated to provision of uniforms and snacks. This is especially worrying in disadvantaged areas. Schools and parents should be encouraged to review their local school policy on the number and costs of teaching practice without the significant disruption and cost of off-site meetings.

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