Who Benefits from Value-Added? 
School Effectiveness in Vietnam 

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THE VIETNAMESE SUCCESS STORY

• Since *Doi Moi* (renovation)(1986) Vietnam has been one of the fastest growing economies in the world

• Inclusive growth, at least until very recent years (poverty reduction from 58% to 16% 1993-2006)

• Strong improvements in education e.g. reduction from 23% to 1% in population with no schooling since 1992

• Falling birth rate and achievement of ‘correct age for grade’ enrolment has provided an opportunity to focus on improving quality in primary education
THE VIETNAMESE SUCCESS STORY

• Standards in mathematics and reading probably compare with those of many much richer countries (e.g. Hong Kong, New Zealand, Greece) (World Bank)

• This is despite continuing challenges of school infrastructure, low teacher salaries and the lowest number of instructional hours in the region

• Improvements focused on a ‘minimum standards’ (Fundamental School Quality Levels) approach

• But important disparities exist between more and less advantaged provinces, urban and rural areas and especially between Kinh and ethnic minorities
Objective: Assessing learning & progress of Grade 5 pupils in Maths and Vietnamese

- 20 sentinel sites across five provinces
- Link to school and home backgrounds collected since 2002
- Longitudinal test and retest design – Autumn 2011 & Summer 2012
- Allows measurement of change while school and class factors are fixed
• YL Younger Cohort pupils (age 10-11) and their class peers
• 3284 Grade 5 pupils, 176 classes in 91 school sites
• Measures of children’s learning in Maths and Vietnamese
• Tests of teacher pedagogical content knowledge in Maths and Vietnamese
• Background and test data on YL child’s class peers
• Observation of school facilities & classroom resources
• School principal questionnaire
• Teacher questionnaire including attitudes
CURRICULAR TESTS

- Reflect **curricular expectations** at the beginning and the end of the school year
- Developed in consultation with curriculum experts in line with MoET/WB Grade 5 study
- 30 multiple-choice questions
- Common anchor items on both tests to allow linking on a single scale using **Item Response Theory** (IRT)
- This enables **longitudinal measurement** of learning progress via **vertical scaling**
• We scaled the test scores to have a mean of 500 and a standard deviation of 100

• Pupils on average made 41 points progress during Grade 5

• We use the progress made to examine the ‘value-added’ by schools and teachers
SOME DESCRIPTIVE FINDINGS
ACHIEVEMENT OVERALL IS HIGH AT AGE 10, ESPECIALLY IN MATHS

18. Calculate:

\[
\frac{3}{5} - \frac{1}{3} = \ldots
\]

A. \(\frac{2}{5}\)  
B. \(\frac{2}{2}\)  
C. \(\frac{2}{15}\)  
D. \(\frac{4}{15}\)  

16. Calculate \(x\) in the following equation:

\[
x + \frac{4}{5} = \frac{3}{2}
\]

A. \(\frac{1}{10}\)  
B. \(\frac{6}{5}\)  
C. \(\frac{7}{7}\)  
D. \(\frac{7}{10}\)
PUPILS’ BACKGROUNDS AND OPPORTUNITIES TO LEARN

• 12% ethnic minorities (nationally 13%)
• 6% overage pupils (as in MoET/WB study)

• Large differences in home background advantage between sites
• Large differences in achievement between the most (urban Da Nang) and least advantaged sites (mountainous Lao Cai)
• Notable differences in test score by ethnicity (Kinh/minority)

BUT
• No stark differences in access to basic learning materials
• Pupils from disadvantaged sites and from disadvantaged backgrounds often made good progress on the curriculum so that gaps in curricular knowledge narrowed during the school year
SCHOOLS, CLASSES, TEACHERS QUALITY INDICATORS

• Almost all schools have basic facilities including electricity, toilets etc.

• But larger differences on other types of school resources (i.e. library, internet, computers), particularly between Da Nang and the other sites

• Class resources and class size increase with the average levels of children’s background advantage

• Pupils in more advantaged sites receive more periods of teaching per week

• Teachers with slightly higher scores in Maths and Vietnamese are more likely to have a university degree and to teach in sites that are more advantaged

• But overall differences across sites on many key quality indicators tend to be small and except when comparing the extremes – focus on minimum standards may explain this
SCHOOL EFFECTIVENESS OR ‘VALUE ADDED’ IN GRADE 5
Value added: Learning progress attributable to schools and teachers after removing prior attainment and background effects.

VA analysis does not focus on the absolute levels of attainment, but on how much students have improved during the school year, whatever their initial learning levels were.
**SCHOOL VALUE ADDED**: summary measure of ‘school quality’

- It provides a measure of the difference made at the school level over the period between the two tests
- Can be computed in two different ways:

  1. Difference between pupils’ actual end of the year scores and their ‘expected scores’ based on the whole sample aggregated at the school level
  2. Through regression modelling by taking account of:
     - prior scores in both subjects
     - home backgrounds *(CONTEXTUAL VA)*

   This method takes into account the potential greater difficulties in ‘adding value’ to more disadvantaged pupils’ learning
WHY SHOULD WE FOCUS ON PROGRESS/VALUE-ADDED?

- Value added analysis produces different findings to cross-sectional research.
- For example, ethnic minority pupils do not ‘learn less’ in Grade 5 – when we account for prior scores.
- This suggests the ‘gap’ in test scores is the result of influences earlier in life.

<table>
<thead>
<tr>
<th></th>
<th>Vietnamese 2011</th>
<th>Vietnamese 2012</th>
<th>Vietnamese Value-Added</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Male</strong></td>
<td>-20.3524</td>
<td>-19.3315</td>
<td>-12.6761</td>
</tr>
<tr>
<td></td>
<td>(-6.835)***</td>
<td>(-6.538)***</td>
<td>(-5.100)***</td>
</tr>
<tr>
<td><strong>Ethnic minority</strong></td>
<td>-17.6592</td>
<td>-7.1008</td>
<td>0.2911</td>
</tr>
<tr>
<td></td>
<td>(-1.907)*</td>
<td>(-0.809)</td>
<td>(0.042)</td>
</tr>
<tr>
<td><strong>R-squared</strong></td>
<td>0.07</td>
<td>0.06</td>
<td>0.25</td>
</tr>
</tbody>
</table>
TO WHAT EXTENT DOES HOME BACKGROUND INFLUENCE PROGRESS THROUGHOUT THE SCHOOL YEAR?

Differences between:

- Expected test scores based on whole sample and actual end of the year scores
- Most advantaged pupils achieve higher than expected scores
- Students in least advantaged groups achieved lower than expected scores
- But, the differences are small (compared to the mean of 500 on the first test)

HOME BACKGROUND ADVANTAGE PLAYS A RELATIVELY SMALL ROLE IN EXPLAINING PUPILS’ PROGRESS IN MATHS AND VIETNAMESE DURING GRADE 5.
• More advantaged pupils on average benefit from slightly higher levels of school VA, or attend higher quality schools.

• However, the differences are small, especially when their home backgrounds are taken into account in the VA estimate.

The evidence that more disadvantaged pupils are ‘sorted’ into lower quality schools is weak in Vietnam.
YET NOTABLE DIFFERENCES IN SCHOOL VA ARE FOUND BETWEEN SCHOOLS IN THE SAMPLE

- Estimates of VA with prior score only
- Substantial differences between the top and bottom performing schools in terms of VA (up to 100 or more points or two years’ learning)

School quality variation is important in determining learning in Maths and Vietnamese during Grade 5
ARE THERE OBSERVABLE SCHOOL-LEVEL CHARACTERISTICS THAT ARE ASSOCIATED WITH SCHOOL QUALITY?

• High performing schools do have slightly better facilities on some indicators,
  • Separate Grade 5 classrooms
  • Working electricity
  • Higher proportion of teachers qualified to degree level
  • Schools less likely to admit all pupils who apply (often use residence criteria)

BUT

• Some of the highest performing schools are attended by a larger proportions of ethnic minorities

• 6 out of 9 highest performing schools served pupils with greater than average home disadvantage
CLASS-LEVEL VALUE ADDED

Larger sample (176 classes)

High performing classes

- Better levels of assets and facilities (for example electricity, fan, overhead projector, storage cabinets etc.)

Teachers

- More likely to have permanent contracts
- Less likely to originate from the province of the school
- Evaluated more often
- Less likely to support their incomes with second jobs
- Some attitude differences on teacher efficacy - e.g. less likely to agree with statements like “family environment is the primary influence on pupils’ learning”
## CLASS-LEVEL QUALITY MATTERS

<table>
<thead>
<tr>
<th></th>
<th>High VA</th>
<th>Low VA</th>
<th>Significance of difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Maths score</strong> (First test)</td>
<td>520.17</td>
<td>503.40</td>
<td>-</td>
</tr>
<tr>
<td><strong>Average Maths score</strong> (Second test)</td>
<td>612.03</td>
<td>496.13</td>
<td>*****</td>
</tr>
<tr>
<td><strong>Average Vietnamese score</strong> (First test)</td>
<td>522.10</td>
<td>500.96</td>
<td>*</td>
</tr>
<tr>
<td><strong>Average Vietnamese score</strong> (Second test)</td>
<td>588.05</td>
<td>466.91</td>
<td>*****</td>
</tr>
</tbody>
</table>

- Differences in test scores at the beginning of the year between the high and low value-added classes are small

- But by the end of the year the gap was more than 100 points (at least two years’ learning)
CONCLUSIONS

- Schooling in Grade 5 in Vietnam is relatively equitable.

- Disadvantaged pupils enter with lower scores but their position does not worsen and there is some ‘catch-up’.

- Disadvantaged pupils attend schools with lower levels of some key assets but are often in smaller classes.

- The relationship between school and class quality and pupils’ backgrounds is fairly weak.

- There are large differences in school quality but there is little evidence that advantaged pupils benefit notably more from accessing the best schools.

- Our tests focus on the Grade 5 curriculum only. Many advantaged pupils are ahead (attend extra classes etc.) – we are unable to assess the extent of this learning.

- A focus on common standards in teacher training, curricula, text-books and school resources and on pupils reaching grade-specific minimum learning standards may be paying off.

- Gaps at entry to Grade 5 require further efforts to equalise learning in lower grades however.
FINDING OUT MORE...

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