

Analyses of the data from the Education Uganda ‘slates’ project

Education Uganda initiated the ‘slates’ project in 2007. Individual slates for writing and calculation were introduced to a number of schools, starting in August 2007. Alongside the supply of slates, teachers in each receiving school were trained to use them – for example, in enabling children to give individual responses to a general question, so that teachers are able to gain a sense of which children have grasped a concept and which are still unsure, or to practice writing skills.

25 schools were trained in the use of slates in the first instance (August-December 2007), a further 50 schools in each of 2008, 2009 and 2010, and 125 in 2011 (i.e. 300 schools receiving training by the end of 2011). The total number of schools receiving slates and training is now 400 at February 2013. Current training and provision is being extended to all other primary schools in the District. By the end of 2014, it is hoped that all 550 schools will have received slates and initial training. Education Uganda aims that all primary aged children in the District, approximately 250,000, will have direct access to a slate by the end of 2014.

In 2013, 250 schools, out of 400 (62.5%), were asked to complete an evaluation form. 154 schools (38.5%) returned the form, and the report is based on these responses.

Impact evaluation

Attendance

151 schools reported data for both years. Comparing pre-training figures with 2011 figures, 110 schools report an increase in attendance rates. The remaining 14 report either no change (1 school) or a drop in attendance rates (40 schools). These figures can be taken as relatively robust. Head teachers (see below) attribute improved attendance to use of slates in the schools. With nearly 1/3 of schools reporting unchanged or worse attendance, it is clear that other factors operate on attendance, and that the benefit of slate use in terms of school attendance may be outweighed by these.

Use of slates in school subjects: 3 Head teachers did not complete this question, and 3 simply wrote ‘all subjects, all classes.’ Data in the table below is drawn from 148 responses. In a number of schools, slates are used exclusively by the first three/four year groups, and a number of schools who do use slates more widely no longer do so in Primary 7. Another common pattern is to use slates for reading and writing in the early primary years, and to use them for maths and science in the later

stages of school.

SUBJECT	P1	P2	P3	P4	P5	P6	P7
READING/ WRITING	149	151	143	129	107	115	89
MATHS	133	141	134	135	131	128	125
ENGLISH	30	32	27	31	35	37	35
SST	6	4	9	16	24	23	23
SCIENCE	6	6	5	17	21	22	20
LL		1	2	1			
LITERACY	1		2				
RE	2	2	1	2	2	1	1
ART	9	8	7	1			
THEMATIC	2	2	2	1	1	1	1
OTHER UNSPECIFIED	9	9	9	10	8	8	8

Table 1: Use of slates for specific subjects across the primary age range

Primary 4 achievement

P4 scores were collected as the cohort average for the year of training and 2013. 149 schools provided data for both years for analysis. The majority of schools report a rise in average scores, with 17 reporting a drop in average, and reporting no change. There are more large gains than large losses (only one school reports a drop of more than 10 points, whereas 60 schools report gains of more than 10 points on the grade averages). Comparisons of the scores using a paired-sample t-test gave a t value of -9.923, with 148 degrees of freedom, which is highly significant statistically ($p < 0.0001$).

Primary 7 achievement: matriculation scores

133 schools provided this data in a form that could be analysed. In cases where the number of pupils entered for P7 matriculation was not given, I have assumed that this is the total number of students placed (there may therefore be some measurement error if not all pupils were placed in divisions 1-4) I then gave a score of 4 for each child in Division 1, 3 for each child in division 2, 2 for each child in Division 3 and 1 for each child in division 4, and divided by the total number of children entered to arrive at a score for each school. It is these scores that are compared. Comparison of the two scores for each school shows a rise in successes; only 8 schools report a drop in successes (and with one exception these reductions are small enough to be accounted for by a single result) and 2 report no change. There is a mean rise of 11 points for this sample. A paired-samples t-test was carried out to compare overall results for the reporting schools, and the rise in scores is statistically significant at the 0.003% level (value of $t = -3.071$ with 133

degrees of freedom). There was insufficient data for me to take into account the length of time that slates have been in the schools (not enough cases in each group), but it would be reasonable to expect that the schools in which slates have been used most continuously showed the highest rise.

Perceived gains from the use of slates – head teachers’ comments

General observation on the use of slates

No schools reported that slates were not being used, although one school had not yet had the training.

Overall, there was general endorsement of the use of slates. Benefits were seen to be:

Attainment (126 comments): The majority of comments here refer to reading and writing (58), general attainment (34) and spelling (15). One head teacher mentions the way in which slate use trains children in quick and accurate responses, others mention drawing. It is interesting to note that, although nearly all schools use the slates in mathematics teaching, only one head teacher mentions improvement in calculation skills.

Children’s attitudes to learning (97 comments): The key aspects here were increased participation in lessons (25) children’s motivation (20) and enjoyment of lessons (18). Some Head teachers also valued the stimulus to competitive spirit (11). A variety of other individual observations included that it made children more observant, supported creativity, made children more attentive and responsible, and improved confidence and self-esteem.

Improvements in teaching (54 comments): 17 head teachers made a general comment about teaching improvement. Others noted improvements in child-centredness (8), in teacher-pupil interaction (8), in more active approaches to teaching and learning (6) and in teachers’ evaluations of children (6).

Other comments: Several head teachers attributed improvements in enrolment (5) and decreases in drop-out or absenteeism (20) to the introduction of slates in their classrooms.

7 head teachers requested additional training so that all teachers can benefit from slate use, and several noted the need for additional slates due to increased enrolment and loss/damage to slates. One commented that the slate size was too small for pupils in the upper classes to use for calculations.

As previously, the main disbenefit mentioned by head teachers is the increased expenditure on chalk (25 comments)

Commentary:

It seems clear from the statistical data that schools are finding the use of slates beneficial in raising attainment. Head teachers also report a wide range of improvements in children's attitudes to school, and participation in lessons. They also believe that teaching in their schools has improved.

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