Bedrock Learning

CORE CURRICULUM

Impact Analysis Report

Bedrock Learning

A recent study saw a Bedrock Learning data set analysed by an external statistician to determine the **impact** and **reliability** of the progress made by various types of learners.

Sample size (Pairs)
83,642

(Pre-test + corresponding post-test)

The effect size of Bedrock Learning on a learner's vocabulary is:

0.930

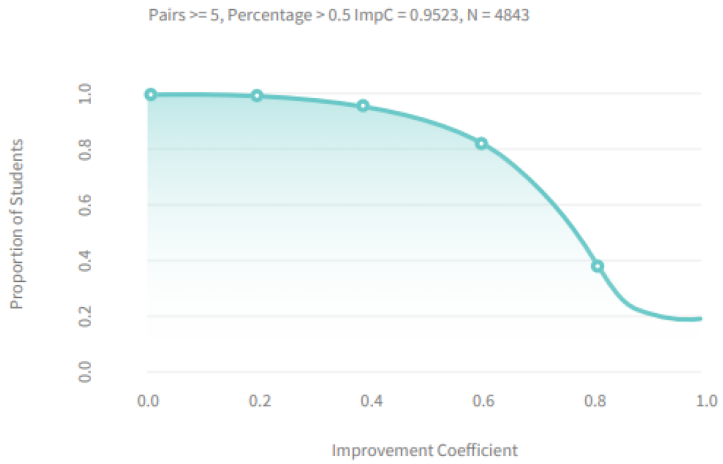
The impact can be described as:

"large"

The data analysed was statistically very significant, with a

P-value of <0.001

How many learners make progress on Bedrock?

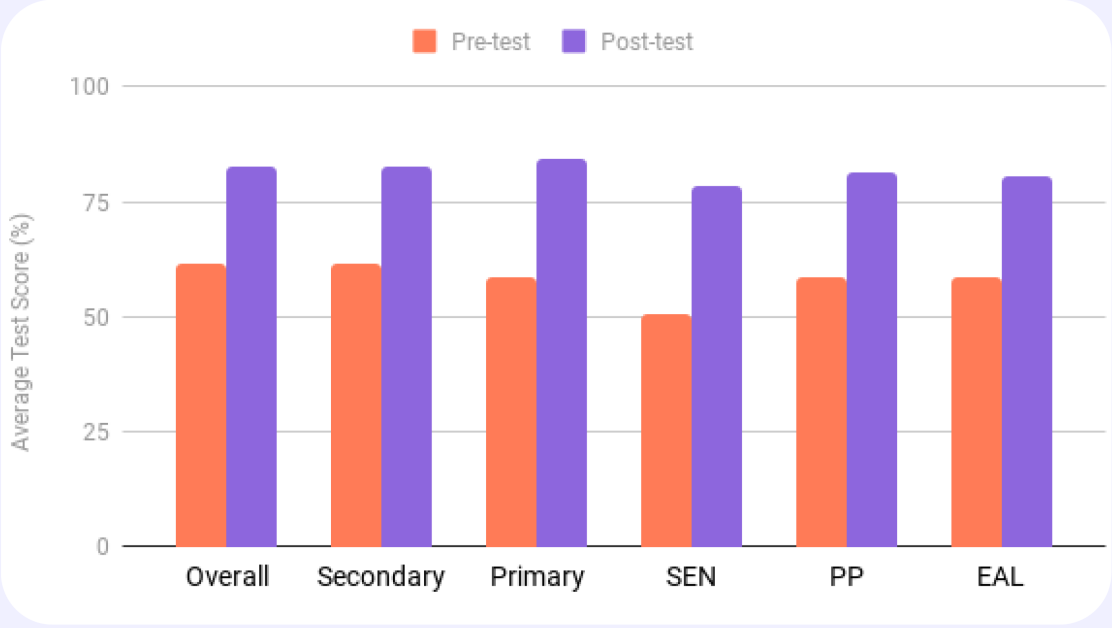


>95% of learners across all groups show an improvement after completing five Bedrock topics.

This improvement increases for students completing 10 topics.

<5% of learners show no improvement after 5 topics. These are the learners who get full marks on pre and post-tests, and those who score the same on both tests.

Who makes progress on Bedrock Learning?



A statistically significant increase is observed between pre- and post-test results across a broad range of learners.

All demographics have effect sizes (ES) greater than 0.8. This means the impact of Bedrock Vocabulary is considered 'large' across all types of learners.

Primary and SEN learners showed the largest increases with 48.27% and 43.39% respectively. Disadvantaged learners made more progress on average than their peers with gains of 37.93%. The average increase across all groups was 31.7%.

Is this progress due to Bedrock?

Effect Size – Measures the magnitude of a treatment effect
(i.e. whether a treatment is working or not)

Our analysis uses Cohen's d measure, which is the standardised difference between the means of two sets of data. Cohen defined an effect size of <0.2 as "small" (where the treatment has a small effect), 0.5 as "medium" and >0.8 as "large" (where the treatment has a large effect).

The formula for Cohen's d is shown below:

$$d = (M1 - M2) / spooled$$

Where:
M= mean of group
SD = Standard deviation of the sample group

The effect size of Bedrock Learning on a learner's vocabulary is 0.930 and is defined as having a large impact.

This impact is the same across all groups and across the whole data set.

From this we can conclude that Bedrock is having a large effect on student learning.

Are the results significant?

The P-value measures the probability that an observed difference between two means is due to chance.

The lower the P-value, the less likely it is that you are observing the result by chance.

The Bedrock Vocabulary data analysed was statistically very significant, with a P-value of << 0.0001.

P-value of 0.0001 means that if you were to repeat the experiment 10,000 times, you would expect to see the observed difference between the means 9,999 times and no difference just once.

Wider evidence of Bedrock Learning's impact

Our analysis found that Bedrock had a large, positive impact on learners' progress. However, it is important that **qualitative feedback from teachers** is taken into account to gain a holistic view of Bedrock's impact in schools.

"We have been using the system with a group of Year 8 pupils who are of lower ability. Their approach to language in the classroom has shifed significantly. They are able to identify roots in texts and are much more confident at pulling language apart."

English Teacher, South London

"Students have reported greater confidence in reading complex texts and greater clarity in their understanding."

English Teacher, Hong Kong

"Bedrock Vocabulary helped to enhance our students' knowledge of the English language, how it works and how it is developed."

Head of English, Beckenham, Kent

"Students now frequently break down new language for themselves, exploring roots, prefixes, synonyms and antonyms of new vocabulary. Through the use of Bedrock Vocabulary, students have therefore not just learnt the words on the website, they have acquired new independent learning processes as well."

English Teacher, Vietnam

Pairs

Results of matching pre-test and post-test data. All of the analysis has been conducted on these pairs of results to obtain a true reflection of performance.

Effect size

Measures the magnitude of a treatment effect. Our analysis uses Cohen's d measure which is the standardised difference between the means of two sets of data. Cohen defined an effect size of 0.2 as "small" (i.e. the treatment has a small effect), 0.5 as "medium" and 0.8 as "large" (i.e. the treatment has a large effect).

Improvement coefficient

The proportion of improvement scores divided by total tests. Equal scores (or ties) count against the Improvement coefficient. If a student has an improvement coefficient greater than 0.5 it means that more tests showed an improvement than were tied or deteriorated.

Improvement

Improvement is defined as scoring more in post-test when compared to the corresponding pre-test.

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