Department for Education

Multi-academy trust performance measures at 16 to 18: England 2017 to 2018

Quality and methodology information

March 2019

Contents

1. About these statistics

Academies are state educational institutions directly funded by the government. Each one is part of an academy trust. Trusts can be single-academy trusts, responsible for one academy, or multi-academy trusts (MATs), responsible for a group of academies.

The MAT level data in performance tables and statistical releases provides data and analysis on the performance of MATs in England. The MAT level performance measures are created using the same entry-level data as is used in the production of institution-level accountability measures. Where an academy sponsor oversees a number of multi-academy trusts, results are presented under the sponsor rather than the individual constituent MATs. This is in line with the approach adopted in recent years in the statistical working papers on MAT performance.

Eligibility

Academies, like maintained schools, have their performance data published at institution level and have inspection reports at this level too. Where a MAT is sufficiently large and established, we also publish performance data at MAT level.

These statistics only include those MATs which:

- have at least three institutions with relevant results at 16 to 18 as published in the 2018 school performance tables
- all of which have been a part of the MAT for at least 3 years as of 12 September 2017 (defined as having joined that MAT before 12 September 2015)

MAT measures are calculated for both the applied general and academic cohorts at 16 to 18.

In order to be eligible for inclusion into a cohort for the parent MAT, an institution must submit at least one entry to that cohort. In some cases a MAT will be eligible for inclusion for one cohort but not for the other – for example when at least three eligible institutions in the MAT each have at least one entry in one cohort, but fewer than three institutions in the MAT each have at least one entry in the other.

These eligibility criteria also apply to the disadvantaged and non-disadvantaged MAT measures. For example, in cases where there are fewer than three eligible institutions in a MAT with at least one entry from disadvantaged pupils, the MAT level disadvantaged measure will not be calculated.

These statistics cover state-funded mainstream institutions only. Non-mainstream institutions such as special schools, alternative provision (AP), pupil referral units (PRUs) and independent schools are not included.

Who is this guide for?

This guide is for:

- **MATs:** MATs use this information to benchmark their performance against others and to support improvement activity
- **Academy leaders, staff and governing bodies:** academy leaders, staff and governing bodies will be interested in seeing how their MAT is performing, or may use this data to help them identify a prospective MAT to join
- **Regional Schools Commissioners (RSCs):** the data is used by Regional Schools Commissioners to support performance discussions with MATs and to celebrate the success of MATs
- **Local authorities**: the data is used by local authorities that are interested in performance of MATs within their area

Performance measures

The MAT level performance measures are aligned with the school level performance measures to ensure consistent incentives at MAT and institution level. The MAT level measures are weighted averages of the data from their constituent academies.

As at school level, the 16 to 18 MAT measure is Level 3 Value Added (L3VA), a progress measure presented for all pupils, disadvantaged pupils and non-disadvantaged pupils in both the academic and applied general cohorts.

MAT L3VA measures are calculated from the same entry level data used to produce published institution level performance data for the 2017/18 academic year. Wider background and a technical guide for the new 16 to 18 accountability framework can be found here:

https://www.gov.uk/government/publications/16-to-19-accountability-headline-measures-technical-guide

Interpreting this data

MAT performance measures are intended to give an indication of how well MATs are currently performing. The overall performance of MATs has many dimensions including pupil outcomes, financial management, governance, value for money, workforce management and capacity to expand. MATs also vary from each other in terms of size, geographic area, types of institutions they are running, how they are set up and run, and other factors.

No single measure is ever likely to capture every element of performance or impact of a MAT. This should be borne in mind when considering the outcomes reported in these statistics. It is also for this reason that contextual data on the percentage of entries from disadvantaged pupils is provided alongside the results. Underlying data at institution level for the 2017-18 academic year is also published.

Data sources

The underlying data sources for MAT statistics are the published data for eligible institutions, taken at the start of the 2017/18 academic year. These can be found here:

www.compare-school-performance.service.gov.uk

To get information about schools, the department's database of school records can be found here:

get-information-schools.service.gov.uk

Calculating the Level 3 Value Added measure

Level 3 Value Added

This measure captures the progress that pupils make between KS4 and graded level 3 qualifications (excluding tech levels). It is a type of value added measure, which means that pupils' results are compared to those of other pupils nationally with similar prior attainment.

The L3VA score for each MAT is based on the weighted average of its individual institutions' respective progress scores, where institutions are weighted by the total volume of entries in each cohort. This volume reflects the range of qualification sizes at 16 to 18 and their contribution to the overall provider score, as well as the qualification weighting factor, which is one for all qualifications except General Studies, where the weight is 0.5. The process used at 16 to 18 is slightly different to KS2 and KS4, where weighting is simply the total number of students in each cohort.

For each cohort, eligible institutions with one or more entry will be included in the overall measures for their parent MAT. MAT level figures will be published for MATs containing three or more institutions collectively submitting a minimum of six entries.

The example below details the calculation of the L3VA measure for the academic cohort in a MAT and is in two stages. First the cohort weight is calculated for each academy. The table below illustrates the calculation of cohort weight for an academy:

	(i) Qualification size	(ii) Qualification weighting factor	(iii) Entry volume (i) * (ii)
Entry 1	0.17	1.0	0.17
Entry 2	0.50	0.5	0.25
Entry 3	0.50	1.0	0.50
Entry 4	5.00	1.0	5.00
Entry 5	0.30	1.0	0.30
Entry 6	1.00	1.0	1.00
		Cohort weight (sum of weighted scores)	7.22

Once the cohort weight has been calculated for each constituent academy of the MAT, the MAT cohort score can then be calculated:

	(i) Cohort L3VA score	(ii) Cohort weight	(iii) Weighted score (i) * (ii)
Academy 1	2.5	6.72	16.80
Academy 2	-2.5	8.50	-21.25
Academy 3	3.3	30.00	99.00
Academy 4	-1.5	55.00	-82.50
Academy 5	-1.5	90.00	-135.00
Total		190.22	-122.95
		MAT Cohort Score (sum of weighted scores/sum of cohort weights)	-0.60

Calculation of the MAT Cohort Score for the applied general cohort follows a similar process.

Disadvantaged and non-disadvantaged measures

The L3VA measure is also presented for disadvantaged and non-disadvantaged pupils within each MAT. However, in a process analogous to the above, the cohort weights are calculated based on entries by these pupils rather than a combination as for the overall measure. The weight of each academy will change, being dependent on the number of disadvantaged/non-disadvantaged entries and the sizes of the qualifications taken.

Interpretation

For all L3VA measures:

For all mainstream pupils nationally, the average progress score is zero. The MAT level progress scores will be presented as positive and negative numbers either side of zero:

- if a MAT has a score of zero this means that, on average, pupils within the MAT do about as well as those with similar prior attainment nationally
- a positive score means that, on average, pupils within the MAT do better than those with similar prior attainment nationally
- a negative score means that, on average, pupils within the MAT do worse than those with similar prior attainment nationally.

For the disadvantaged pupil progress measures:

Evidence shows that, overall, performance of disadvantaged pupils is lower than that of other pupils. This data indicates how well a MAT does at tackling performance of disadvantaged pupils. Disadvantaged pupils are those who were considered disadvantaged at the end of KS4.

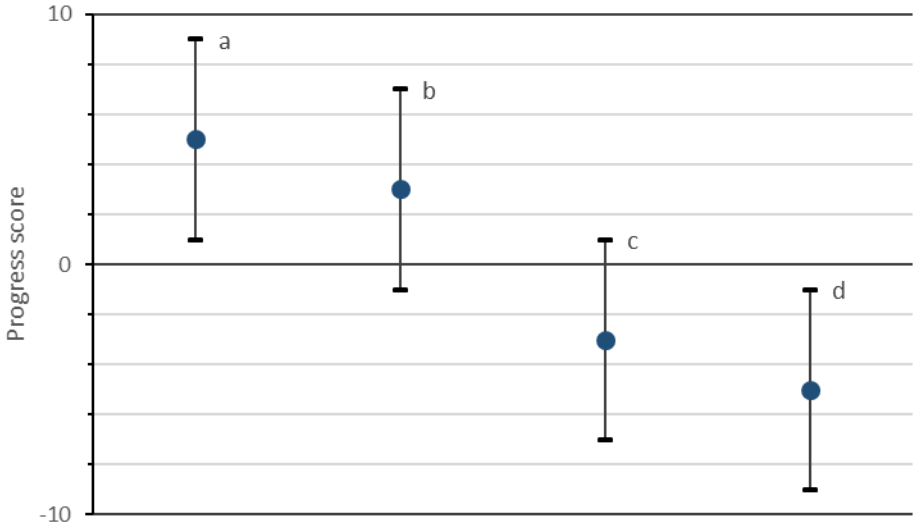
Confidence intervals

There is a level of uncertainty within the progress measures as they are based on a given set of pupils' results. L3VA results are calculated for a MAT based on a specific cohort of pupils. A MAT may have been just as effective but have performed differently with a different set of pupils. Similarly, some pupils may be more likely to achieve high or low grades independently of which school they attend. In recognition of this, the measures are presented with 95% confidence intervals. These provide a range in which users can be confident that the true progress score lies. Smaller groups have wider confidence intervals because their progress scores are based on smaller numbers of pupils. Confidence intervals can be used to identify MATs performing well above/well below average or only above/below than average by a statistically significant amount, and those close to average.

Many MATs will have scores that are not significantly different from the average. As a rule of thumb:

- if the confidence intervals of one MAT do not overlap the confidence intervals of another, then they are significantly different from each other
- if the confidence intervals for one MAT overlap with the score of another MAT, then they are not significantly different from each other
- if the confidence intervals for one MAT does not overlap with the average (zero) then their progress is significantly different from the average

The chart illustrates some example MAT progress scores and confidence intervals.



(a) Has a positive score. The confidence interval does not overlap the average. The MAT is significantly above average. Is significantly different from (d) as confidence intervals do not overlap.

(b) Has a positive score. The confidence interval overlaps the average. The MAT is not significantly different from the average.

(c) Has a negative score. The confidence interval overlaps the average. The MAT is not significantly different from the average.

(d) Has a negative score. The confidence interval does not overlap the average. The MAT is significantly below average.

It is possible to be statistically different from the average anywhere within the distribution – not just at the extreme ends. In addition, the confidence intervals (that result from uncertainty) mean it is inappropriate to specify a precise performance-based ordering of all MATs.

Given a MAT progress measure, the confidence intervals around that score can then be calculated as follows (see box below explaining terms):

$$\mathrm{VA_{MAT}} \pm 1.96 \cdot \psi_{\mathrm{VA_{MAT}}}$$

The standard error of a MAT's overall academic or applied general value added score is calculated according to the process defined in Annex C of the 16 to 18 accountability measures technical guide, with aggregation performed to a MAT level rather than an institution level. The equation below is used:

$$\psi_{\mathrm{VA_{MAT}}} = \sqrt{\sum_{1}^{\mathrm{N_{Qual_{MAT}}}} \left(\frac{\mathrm{n_{Qual}} \cdot \mathrm{Vol_{Qual}}}{\sum_{1}^{\mathrm{N_{Qual_{MAT}}}} (\mathrm{n_{Qual}} \cdot \mathrm{Vol_{Qual}})} \right)^2 \cdot \left(\frac{\psi_{\mathrm{Qual}}}{\mathrm{Vol_{Qual}}} \right)^2}$$

Variable	Description
VA_{MAT}	MAT's overall academic or applied general VA score (in grades)
$N_{Qual_{MAT}}$	Number of academic or applied general qualifications for the MAT
n_{Qual}	Number of entries within MAT within given academic or applied general qualification
Vol_{Qual}	The size of the qualification type for a given academic or applied general qualification, in relation to A Levels (for academic qualifications) or BTEC level 3 Subsidiary Diplomas (for applied general qualifications)
$\psi_{VA_{MAT}}$	Standard error of overall academic or applied general value added score (in grades)

ψ_{Qual}	Standard error for the VA score for a given academic or applied general qualification (in points, before rescaling to grades)

For MAT disadvantaged and non-disadvantaged pupil progress measures, standard error calculations are carried out just on those reduced cohorts. For example, $\boldsymbol{n_{Qual}}$ above will represent the number of eligible entries within the MAT from disadvantaged or non-disadvantaged pupils.

Improvement measure

As this is the first year that MAT measures have been calculated at 16 to 18, there is currently insufficient comparable data for the production of a MAT improvement measure. This will be reviewed in future when there are multiple years of comparable data.

Timeliness

Timeliness refers to the lapse of time between the period to which the data refer and the publication of our measures.

In 2017/18 16 to 18 MAT measures are published on 14 March 2019, at the same time as school performance tables.

Institutions are assigned to the MAT they were with before 12 September 2017 as listed on get-information-schools.service.gov.uk

Punctuality

Punctuality refers to the time lag between the actual and planned dates of publication.

The proposed month of publication is announced in advance on gov.uk and precise dates are announced in the same place at least four weeks prior to publication. In the event of a change to the pre-announced release schedule, the change and reasons for it would be announced.

2. Accuracy and reliability

Accuracy describes the closeness between an estimated result and the (unknown) true value.

Measurement error

Measurement error is the difference between the actual value of a quantity and the value obtained by a measurement. Repeating the measurement will reduce the random error caused by accuracy of the measuring instrument but not any systematic error caused by incorrect calibration of the measuring instrument.

For the steps taken to minimise measurement error in the school performance data please refer to the further information and guidance on the performance tables website.

Validation and quality assurance of the data

The production team minimise measurement error and perform validation and quality assurance by independently dual running each output. Any discrepancies in the data produced are discussed and more experienced staff involved as required. Additional checks are also carried out on the data produced. These include:

- comparisons with previous figures
- check totals are consistent across tables
- check patterns in the data are as expected
- check figures against those produced for the performance tables

Disclosure control

The Code of Practice for Statistics requires reasonable steps to be taken to ensure that published or disseminated statistics protect confidentiality.

The data published in this release does not reveal the identity of individuals. Institution level results are suppressed in the underlying data where the relevant measure was not published for an institution.

3. Accessibility and clarity

Accessibility is the ease with which users are able to access the data. It also relates to format(s) in which data are available and the availability of supporting information.

Clarity is the extent to which easily comprehensible metadata are available, where these metadata are necessary to give a full understanding of the statistical data.

The text in the statistical releases for MAT measures and accompanying supporting text documents are published in pdf format so that they are accessible to all users. Care is also taken to ensure that the statistical releases and accompanying supporting text documents meet accessibility guidelines. Key figures are highlighted in the statistical releases which draw out the key messages such as changes over time. Small tables or charts illustrating key figures are also included.

The text in the statistical releases are accompanied by formatted Excel tables with clear titles which allow users to find more detail than provided in the text. Important limitations or inconsistencies in the data are mentioned in footnotes so that users do not have to refer to the text or this document.

4. Comparability

Comparability is the degree to which data can be compared over time, region or other domain.

Over time

This is the first year for which 16 to 18 MAT measures have been calculated so it is not currently possible to compare MAT performance at 16 to 18 over time. As these measures will now be calculated annually this situation will change.

Differences between institution, local authority and national figures

The 16 to 18 MAT measures use the same institution level data published within the school performance tables on 24 January 2019.

Measures for local authorities are not included.

Across different types of institutions

Only state funded mainstream academies are included in the MAT measures. These are sponsored academies, converter academies, free schools, studio schools and University Technology Colleges.

Special schools are not included in the analysis. Even when comparing to other pupils with similar prior attainment, pupils in special schools generally make slower progress, and therefore value added measures can be a poor assessment of effectiveness.

Each MAT is different and they each operate under a variety of challenging circumstances. The measures do not fully account for the historic performance of institutions, including the poor prior performance of schools that became sponsored academies.

With other parts of the UK and internationally

Currently multi-academy trusts operate solely in England.

Department for Education

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