



Department
for Education

The fundamental equations of ICFP

With as little mathematics as possible

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March 2020

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Introduction

Integrated Curriculum Financial Planning (ICFP) is a whole school process that aims to manage resources rigorously whilst directing them as well as possible into the classroom and the support strategies that deliver the school's educational vision. The approach has many aspects, including key metrics and the underlying connection between those metrics. This paper aims to describe the connections between the quantities that make up the key metrics with as little reference to mathematics as possible. There is a set of spreadsheets to accompany this set of notes. The figures in the sheets as supplied are purely illustrative and do not represent any particular school or set of target values.

The direction of thinking in ICFP can start from the finances and move to the curriculum or start from the curriculum and move to the finances. Both these directions are illustrated in the workbook of spreadsheets. Most users of ICFP will probably start with one of these directions but also consider the reverse direction in the process of seeking to reach the best result they can for their own school.

The fundamental link explained - from finance to curriculum

To explain the fundamental links this paper uses the direction flowing from finance to curriculum, but the spreadsheets cover both directions.

In any one academic year a school has a total amount of revenue. This is used to implement a curriculum structure including teaching staff, and to cover costs of non-teaching staff, supplies and services, premises, educational resources, money the school needs to hold in reserve and any other non-staff costs required to run the school. At the most simple level the revenue expenditure can be divided into two sections, expenditure on teaching staff and expenditure on everything else. Some schools may not wish to operate at this most simple level because the number and cost of Educational Support staff is important to identify as a separate entity. This may be the case in a Special School or a school with significant levels of High Needs. The approach described in this paper can be developed to cover such a circumstance but that is not done here as the aim is to present the basic principle as simply as possible.

In making plans for a future academic year a school initially needs to have the best possible estimates for three quantities. These are

- 1) The total available revenue
- 2) The minimum essential cost of everything except the teacher costs
- 3) The expected average cost of a teacher.

Subtracting the essential cost of everything except teacher costs from the total available revenue gives the revenue available for teacher costs.

Dividing the revenue available for teacher costs by the expected average teacher cost gives an estimate for the number of full time equivalent teachers the school can afford to employ in that year.

In the workbook of spreadsheets available with these notes this sort of calculation looks like this.

Quantity	Value
Estimate of total revenue available for the academic year	£5,000,000
Estimate of minimum essential spend on all costs except teacher costs	£2,000,000
Estimate of revenue available for expenditure on teacher costs	£3,000,000
Estimate of average teacher cost for the academic year	£50,000
The number of FTE teachers the school can afford in a balanced budget is	60.0

The next step is to input enough curriculum information to convert the number of teachers the school can afford to employ to a workable timetable for the school.

The information required is

- 1) The number of periods a teacher is expected to teach in one timetable cycle: this is taken as an average across all teachers. This is frequently called the average load or average teaching load.

On the screenshot below the pupil roll and the length of the timetable cycle are also shown as inputs. These are needed to derive some of the metrics mentioned later.

If the value for the average load is multiplied by the number of FTE teachers from the first result above the answer is the teacher period budget for the timetable.

This second section of inputs and the result for the teacher periods in the timetable looks like this

Quantity	Value
Length of the timetable cycle in periods (See note attached to this cell)	25
Expected average number of teaching periods per teacher in the timetable	19.50
Expected number of pupil on roll	1,000
Teacher period budget for the timetable is	1,170

These two calculations summarise the fundamental process which is a factual link from the revenue the school receives, and the level of spend on everything other than teachers, to the amount of teaching time on the timetable.

Converting the school-specific numbers to key metrics comparable across schools

The calculations above are all specific to an individual school. If the school changes the periods in its timetable cycle from one academic year to another some of the figures will also change and comparison between different academic years will not be possible. Similarly, fair and meaningful comparison with other schools using different timetable cycles is also either difficult or impossible.

To make the numbers comparable across similar schools or between different academic years in the same school they can be converted to a small number of key metrics. These metrics can be used for benchmarking, used as Key Performance Indicators (KPIs), and also thought of as levers which can be adjusted to bring the budget and curriculum into balance.

The metric section in the sheet supplied looks like this

Quantity	Value
Pupil to teacher ratio	16.7
Proportion revenue spent on teachers	0.60
Average Class Size (Pupil to teacher ratio in the timetable see below for the calculation steps)	21.37
Revenue per pupil	£5,000
Teacher contact ratio	0.78
Average Teacher Cost	£50,000

The fundamental equations of ICFP can be written as a set of three equations in words which have some quantities in common:

- Revenue available for teacher costs = Total revenue – total essential spend on all non-teacher costs
- FTE teacher total = Revenue available for teacher cost ÷ Average teacher Cost
- Teacher period budget for timetable = FTE teacher total × average teaching load

The article on the 'Equation of life' on the ASCL website explains the key metrics and their interrelationship in more detail. It summarises these three ideas in a single equation and shows that the ratio of pupils to teachers in the school is in fact the key metric.

There are several metrics in use in some schools in addition to those described in the article but in general those metrics are either limited to specific applications or derive from those shown in the metric section table above.

The fundamental links explained – from curriculum to finance

The second spreadsheet in the workbook supplied with these notes shows the same school but starts from Curriculum and moves to Finance. In this case the school has to input a value for the number of teacher periods it wishes to use for its ideal curriculum. This can be derived from a deployment analysis as shown in the technical guidance papers or extracted from a school based timetable spreadsheet or directly from commercial timetable software.

As supplied both sheets show identical metrics but have approached them by different routes. There is no one 'correct' way to approach ICFP and the sheets are not intended to show the only possibilities, just to illustrate the fundamental relationships that are part of the whole process.



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Reference: DfE-00065-2020



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