

Introducing the research article ‘The impact of instrumental music learning on attainment at age 16: a pilot study’

The background

Recent discussions between Hampshire Music Education Hub and local secondary schools identified growing concerns about students missing academic lessons for instrumental / vocal lessons. In order to investigate whether these concerns were valid, existing data from KS2 and KS4 were analysed to compare progress and attainment in core subjects between those students taking music lessons and those who did not.

This original analysis appeared to show positive outcomes for the students undertaking instrumental / vocal lessons. However, some key questions remained:

1. would the initial findings be confirmed by a more rigorous, academic analysis?
2. could a more rigorous piece of research unpick whether the perceived benefits in attainment could be attributed to playing an instrument or did they just indicate a relationship between the two perhaps because children attracted to playing an instrument were already more able in relation to academic work?
3. could wider research explain the cause of the benefits, if they were confirmed?

Professor Susan Hallam kindly offered to apply standard academic research methods to the data. Many music educators will know of Professor Hallam's distinguished record in this field, and will recognise the expertise she has in a complex area. The resulting article has recently been published by the [British Journal of Music Education](#), and is necessarily academic in tone. This introduction can hopefully point readers to the most important findings, and enable the paper to be used effectively in less academic contexts.

Key question 1: are the findings confirmed?

Put simply, yes: there is clear evidence that on most of the school accountability measures then in place, the students who had additional instrumental / vocal lessons did better than their peers who had no additional lessons. Table 1 on page 251 of the Journal (page 5 of the PDF) shows that the mean results on every measure listed were better for the music students.

Two key points should be made:

- a) whatever the debate surrounding whether music can make you ‘smarter’ or ‘better at’ English and mathematics, the data show quite clearly that the music students made more progress in their learning than their peers. This is significant: the data say that irrespective of their starting points, progress in learning was better for the students taking instrumental / vocal lessons.
- b) the impact was stronger the longer students had their additional lessons: Table 2 (on the next page) shows that students who learnt for four or five years showed better results in all areas than students who learnt for two or three years. This is significant: it suggests again that the progress that can be made in core subject learning increases the longer one has instrumental / vocal lessons. This again implies that the background of the students, and their social background, is not the defining factor: it is the musical learning that makes the difference.

Key question 2: are the findings ‘statistically significant’, with musical learning the cause?

The answer to the first question is in many cases, yes: that is, the data show a greater margin of improvement for the instrumental / vocal learners than might reasonably be

expected to be seen across normal ranges of outcomes. This is referenced in the text in many places.

Equally, the data show that there is a very high chance that it is the musical learning which made the difference – or put another way, there is very little chance that ‘other factors’ made the difference. This can be seen most clearly in Table 1, in which the last column shows the ‘significance’ of the data. Without worrying about the methodology involved, the data show that for most of the accountability measures, there is only one in a thousand chance that the results were due to other ‘confounding’ or mitigating factors. In normal research, anything less than a 5% chance is deemed to be significant – so this data is very strong in confirming that it is the musical learning that is making the difference.

It may also be worth pointing out two details:

1. This research does not include a break-down of the outcomes from different starting points at Key Stage 2. However, the initial analysis of the data had indicated that the instrumental / vocal learners were **not** the students with the strongest data at KS2: in other words, while they were doing well, they were not the ‘brightest and best’ students, who might have been expected to excel – and yet over time, their data showed better outcomes than the students who were the ‘best’ at KS2

2. Although the academic analysis of the KS2 data shows that there were ‘statistically significant’ differences in the outcomes of the instrumentalists at KS2, it should be noted that in old, National Curriculum ‘Level’ terms, the gap is actually less than one sub-level: so while significant in research terms, it was not as wide a gap in standard educational assessments as the research term might imply.

Key question 3: what are the reasons behind the positive impact of musical learning?

The article cites very many research programmes which together indicate possible causes. It is important to recognise that we are unlikely ever to find a single, direct ‘cause and effect’ piece of evidence; but equally, the gathering weight of evidence is all pointing in the same direction. The most important aspect may well be the ‘learning to learn’ benefit of additional musical lessons – what is described in the article (on page 257 of the Journal, or page 11 of the PDF) as ‘executive functioning’. This seems to ring true with anecdotal evidence, and musicians’ own experiences: the self-discipline required to learn an instrument or the voice is surely something that rubs off into other areas of life – including learning other subjects.

The future

A new, longitudinal study of the same issues raised by this piece of research is already under way. Taking a much wider sample of students and schools, it is intended to run across a total of five years with final completion after the 2020 academic year. We hope that this will shed further light on this fascinating aspect of education, with more details on both the impact, and the causes of such an impact, that musical learning can have on learning across other subjects.

For further information, please contact either Professor Susan Hallam or Kevin Rogers via the links at the top of the research article