

Is Sparx Maths helping teachers manage their workload?

An analysis of Sparx teachers' survey

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Abstract

Introduction

Excessive workload is a key issue for recruitment and retention in the teaching profession and the single most cited reason for leaving teaching. Sparx Maths is a digital educational platform that aims to reduce teacher workload, while simultaneously increasing pupil attainment. It delivers differentiated homework and provides optional lesson plans, for every part of the KS3 and KS4 curriculum.

Methods

To assess the impact of the Sparx Maths product on teachers' workload, we surveyed all 240 maths teachers in schools currently using Sparx Maths. We used an online questionnaire based on the staff workload survey template published by the Department for Education, which we adapted to specifically probe the impact of using Sparx Maths on workload.

Results

Of the 79 teachers who responded, 90% stated that Sparx decreased their workload overall, with an estimated median saving in terms of lesson planning and homework-related tasks of 30 minutes per class per week.

Conclusions

The results from this first survey of teachers indicate that Sparx Maths has a positive impact on teachers' workload, overall reducing the time spent on the activities which most heavily contribute to their workload.

Introduction

Teachers' workload and burnout regularly hits the headlines, and is an issue that has been actively monitored by the Department for Education since 2014 (Department for Education, 2019b), with 81% of teachers considering leaving the profession in 2017 (National Education Union, 2018). Recent research published by the Education Support Partnership (Savill-Smith, 2018) identified workload as the top reason given for education staff considering leaving the profession. Excessive workload was also found to be the largest contributor to poor mental health.

Teachers' workload encompasses a range of teaching and non-teaching activities. According to the 2016 Teacher Workload Survey (Higton et al., 2016), secondary teachers spend the majority of their non-teaching time on "Individual planning or preparation of lessons either at school or out-of-school", "Marking/correcting of pupils work" and "General administrative work", which includes "recording, inputting, monitoring and analysing data" and organising resources in general. These findings have led the Department for Education to develop initiatives to support schools and senior leadership teams in reducing the burden on teachers' time associated with these activities.

Sparx Maths is a digital educational platform that delivers comprehensive maths education to secondary school pupils through classroom and homework components using a blended-learning approach. Intuitively, we would expect Sparx Maths to reduce the workload of teachers who use it because it automates homework setting, marking and feedback; summarises pupil progress; and provides optional lesson plans for every maths lesson in KS3 and KS4, covering 100% of the curriculum. However, it is essential to test this assumption empirically, which is the main objective of this study.

Methods

We surveyed all the 240 maths teachers in the schools that currently have Sparx Maths products using an online questionnaire containing four distinct sections (see Appendix for a copy of the full questionnaire):

- **Demographic information:** Name, school and years of teaching experience. Name was included to allow targeted follow-ups but was removed prior to analysis.
- **Workload by activity:** This section asked teachers to consider a list of activities taken from a template staff workload survey published by the Department for Education (Department for Education, 2019a). Teachers were asked to quantify how the time spent on each activity in their most recent full working week was affected by the use of Sparx in their school (increased, unaffected or reduced).
- **Quantification of workload changes:** This was achieved by asking the teachers how using Sparx Maths in school had affected their workload overall, and then how much more or less time they would have needed to achieve the same quality level without Sparx Maths (considering homework setting and marking, and lesson planning and preparation).
- The final section asked teachers how likely they would be to recommend Sparx on a 0 – 10 scale.

The survey was emailed directly to all 240 maths teachers in schools using Sparx on the last Tuesday morning before May 2019 half-term holiday. The teachers were invited to submit their response by the end of the following Tuesday. Schools were offered a generous hamper for the first three schools to achieve 100% completion.

Results

We received 88 responses (37% response rate) spread across 22 schools, two of which use both Sparx Classroom and Homework products, while the remaining schools use only the Homework product. The number of responses per school ranged from 1 to 10, with a median of 3.5 teachers' responses per school. Some teachers did not answer all questions; complete responses across the whole questionnaire were obtained from 77 teachers (32%).

Seventy-nine teachers responded to the question on the overall impact of Sparx on their workload, of which 90% agreed or strongly agreed that Sparx tended to decrease their workload (Figure 1). Overall teachers estimated that to achieve the same quality of lesson and homework, they would need an additional 30 minutes per class per week without Sparx (median value obtained across all respondents, Figure 2).

Overall using Sparx in school tends to decrease my workload

Strongly Agree Agree Disagree Strongly Disagree

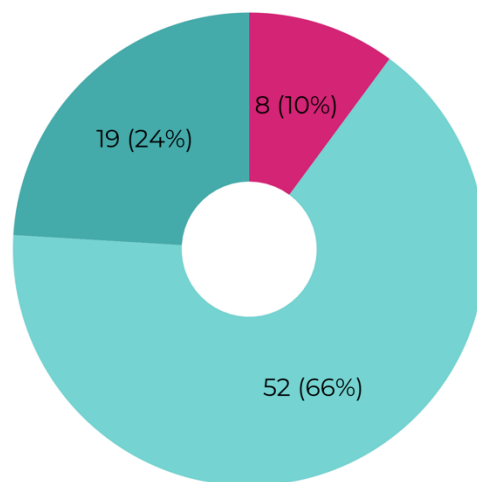


Figure 1: Impact of Sparx on teachers' workload. Number and associated percentages of teachers agreeing or not with the statement that "Overall using Sparx in school tends to decrease my workload"

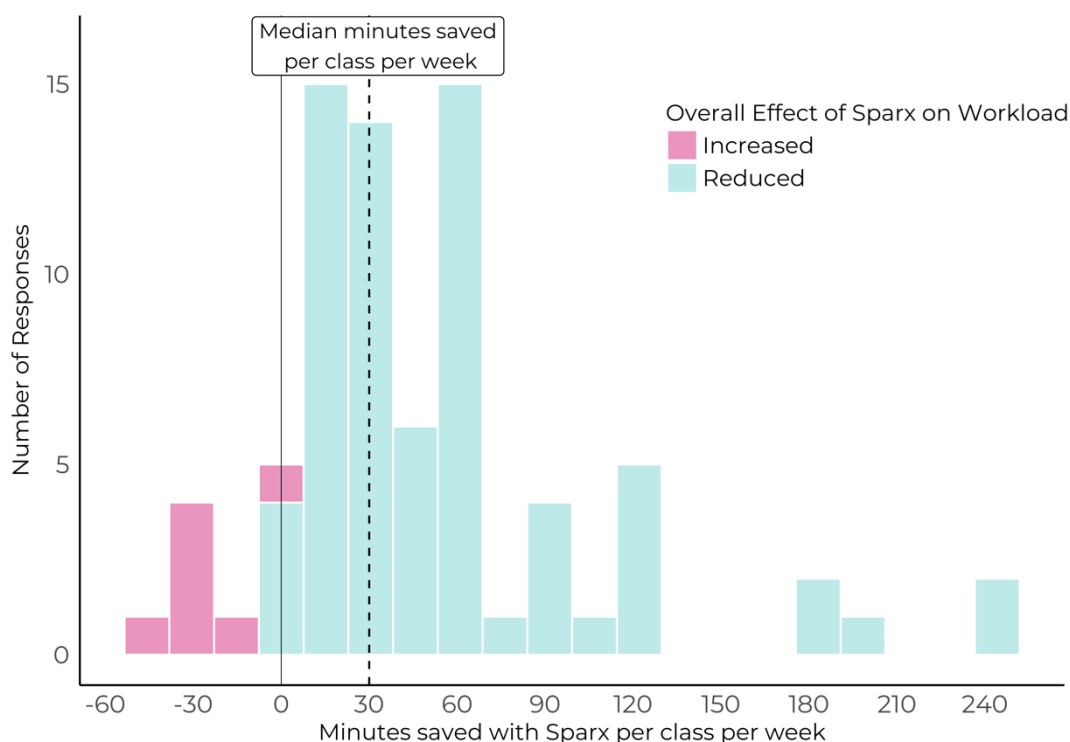


Figure 2: Impact of Sparx on teachers' time for lesson planning & preparation, and homework setting & marking. The time is estimated in units of minutes saved.

On the final question 77% of teachers rated Sparx 8 or over for how likely they were to recommend it to a colleague (average of 8.27 across 79 responses).

Eighty-one teachers completed the question relating to the impacts of Sparx Maths on teachers' time spent broken down by activity (Figure 3). For each question we calculated the net balance of teachers reporting a Sparx-related change in workload by subtracting the percentage of teachers reporting an increase in workload from the percentage reporting a decrease. A net balance of at least 30% of teachers reported that Sparx reduced the time spent on these activities:

- Marking and correcting pupils' work (65%)
- Organising resources (46%)
- Data-related tasks (41%)
- Lesson planning and preparation (36%) – Note: in schools using Sparx Classroom 100% of teachers reported a reduction in this measure
- Pupils' assessment (36%)
- General administration (30%)

In addition to these substantial reported reductions, teachers reported a small (>3%) net increase in the following areas:

- Contact with people outside of school other than parents (10%)
- Engaging in extracurricular activities (5%)
- Pupil disciplining (5%)
- Staff meetings and team work with colleagues (4% net increase, each)

As expected, Sparx was reported to have little or no impact on time spent on pupil counselling, policy development, financial planning, staff appraisal, setting up classrooms and displays, participation in school management or tutorial time.

Considering your most recent full working week, how has Sparx affected your time on the following non-teaching activities?

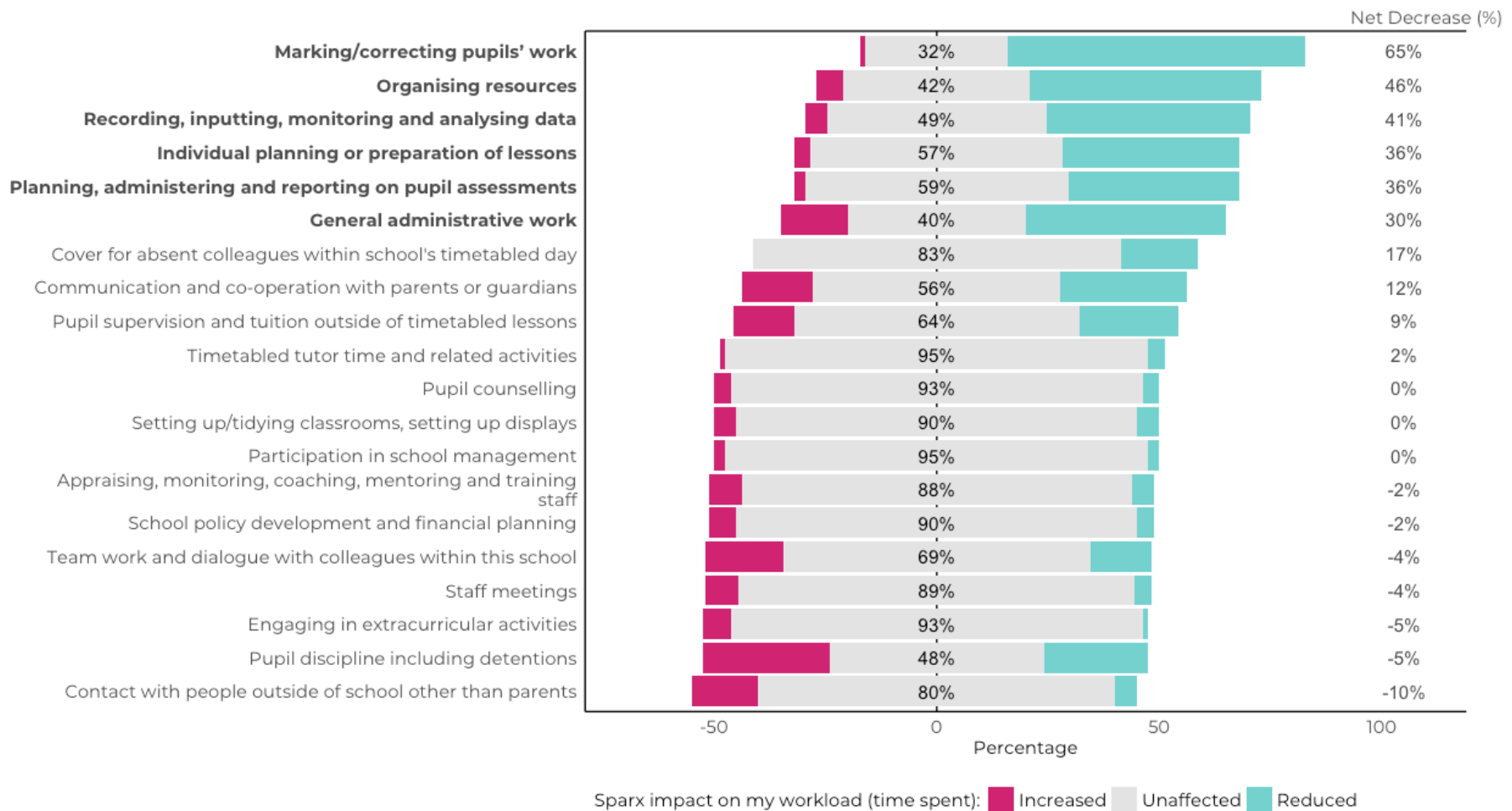


Figure 3: Sparx' impact on teachers' time for non-teaching activities. The activities are ordered in decreasing order of the net decrease, expressed as the difference in the percentage of the 81 respondents who reported a reduction in workload versus an increase in workload. Common non-teaching activities highlighted by the 2016 Teacher Survey (including related administrative tasks) as being the most time consuming are indicated in bold.

Conclusions

This survey of all Sparx Maths teachers (as of May 2019) confirms that Sparx Maths products have an overall positive impact on teachers' workload, with 90% of respondents agreeing or strongly agreeing that using Sparx tended to decrease their workload. In addition, the top six activities in terms of the proportion of teachers reporting a reduction in workload correspond exactly to activities that are normally the main contributors to teachers' workload (Higton et al., 2017).

One slightly surprising result is that a net balance of teachers reported increased time spent on pupil discipline. However, this may simply result from the facilities implemented within the products for real-time monitoring of pupil engagement with the different activities, both in the classroom and for homework. Within the system, teachers are provided with the options of rewarding students or, conversely, issuing detentions. This empowers teachers by providing them with the tools they need to monitor and enforce things like homework completion. As one teacher commented, Sparx provides the time for "chasing up on work that hasn't been done".

Considering only lesson planning and homework-related tasks, teachers estimated a median saving of 30 minutes per class per week with Sparx. The amount of time saved per week varied greatly amongst teachers, with some reporting negative or no time gained and others estimating savings of over 3 hours per class per week with Sparx, possibly reflecting the fact that in most schools Sparx Maths has been introduced only in year 7 so teachers with lots of year 7 classes may estimate larger savings than those whose teaching is focused more on the later years. Taking the median 30 mins as a guide, this would indicate a potential time saving in the region of 200 hours per teacher per year (conservative estimate assuming 10 classes per week x 40 weeks).

References

Department for Education. (2019a). Example staff workload survey - to help identify workload issues.

Department for Education. (2019b). Reducing teacher workload. Policy Paper. Retrieved 11 June 2019, from <https://www.gov.uk/government/publications/reducing-teachers-workload/reducing-teachers-workload>

Higton, J., Leonardi, S., Richards, N., Choudhoury, A., Dr, R., Sofroniou, N., & Owen, D. (2016). The Teacher Workload Survey: report brief.

National Education Union. (2018). Teachers and Workload.

Savill-Smith, C. (2018). Teacher Wellbeing Index 2018. London.

Appendix

The following questionnaire was implemented in the online platform Survey Monkey.

The first two questions require the respondent to enter their name, school and number of years of teaching. The remaining questions were as follows:

3) Consider how long you spent on the following activities other than teaching in your most recent full working week, including activities that took place during weekends, evenings or other out of classroom hours. Was the time spent on each activity increased, decreased or unaffected by the use of Sparx in your school?

	Decreased (Sparx reduced my workload)	Unaffected	Increased (Sparx increased my workload)
Individual planning or preparation of lessons			
Marking/correcting pupils' work			
Planning, administering and reporting on pupil assessments			
Timetabled tutor time and related activities			
Cover for absent colleagues within school's timetabled day			
Pupil supervision and tuition outside of timetabled lessons			
Pupil discipline including detentions			
Pupil counselling			
General administrative work			
Organising resources			
Setting up/tidying classrooms, setting up displays.			
Recording, inputting, monitoring and analysing data			
Communication and co-operation with parents or guardians			
Contact with people outside of school other than parents			
Team work and dialogue with colleagues within this school			
Staff meetings			
Appraising, monitoring, coaching, mentoring and training staff			
Engaging in extracurricular activities			
School policy development and financial planning			
Participation in school management			

Other activities (you may wish to specify)

4) To what extent do you agree or disagree with the following statement:
Overall using Sparx in school tends to decrease my workload. Choose one of:

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

5) Thinking about lesson planning/preparation and homework setting/marking, if you did not have Sparx, how many more (if answer to 4 was agree or strongly agree), or less (if answer to 4 was disagree or strongly disagree) time would you need to spend to achieve the same quality level? Please express this as minutes per class per week.

6) How likely is it that you would recommend Sparx to a friend or colleague? (Scale from 0 – not at all likely- to 10 – extremely likely.)