

Interim Impact Report

Scotland Efficacy Study

SUMDOG

MARCH 2026



Contents

| | |
|---|----|
| Executive Summary | 3 |
| 1. Introduction | 4 |
| 2. Methodology | 5 |
| 3. Sumdog in Practice: Usage and Integration | 7 |
| 4. Impact on Teachers: Time Efficiency and Focused Teaching Decisions | 11 |
| 5. Impact on Pupils: Skills, Engagement, Attitudes | 13 |
| 6. Differential Impact and Equity Considerations | 16 |
| 7. Summary..... | 19 |
| 8. Recommendations for Sumdog & Next Steps for The Evaluation..... | 20 |

Executive Summary

Sumdog is a maths practice platform for ages 5-14 that helps children build fluency through an engaging, games-based approach. Sumdog was originally developed for Scottish schools in 2010 and aligned to the Curriculum for Excellence benchmarks. Sumdog's Fluency Booster adapts questions to each child's unique level to help introduce, revise and master key skills. Teachers can also set practice tasks on skills that need additional support and view auto-marked in-depth reports to identify gaps and plan next steps.

This report explores Sumdog's implementation and impact on pupil outcomes, including maths-related attitudes and skills, focusing on Scottish schools that have been using the technology for five years or more. The report is based on interviews and focus groups with 9 teachers across 9 different primary schools.

The main findings from the report can be found below:

- ▶ **Strong pupil engagement and improved fluency.** Teachers reported high engagement and motivation, with Sumdog consistently preferred over traditional resources. The platform supported improvements in mathematical fluency and confidence through adaptive practice. This was particularly evident among lower-attaining pupils, who engaged enthusiastically with Sumdog despite disengaging from traditional methods.
- ▶ **Broad accessibility across diverse learners.** Sumdog supports a wide range of learners rather than targeting specific groups, which teachers viewed as a key strength for inclusive practice.
- ▶ **Sumdog actively shapes teaching practice.** Teachers described Sumdog as an invaluable diagnostic resource that informs day-to-day pedagogical decisions. Its strong alignment with the Scottish curriculum enables confident deployment across three core uses: identifying gaps, providing tailored consolidation, and motivating pupils through competition. This positions Sumdog as both a pupil-facing learning tool and a resource that shapes how teachers plan, assess, and target their mathematics teaching.
- ▶ **Effectiveness depends on strategic implementation.** Sumdog's impact depends on how teachers deploy it, their confidence with its features, and whole-school commitment to consistent use. Supporting wider adoption requires investment in building staff capability and ensuring reliable infrastructure.
- ▶ **Bridging engagement and broader mathematical attitudes.** Whilst pupils are highly motivated by Sumdog, many experience it primarily as a game rather than recognising it as maths learning. This successfully bypasses negative associations with traditional maths work, though this also means enjoyment does not automatically translate into changed attitudes towards classroom mathematics more broadly. Teachers can bridge this gap by explicitly connecting Sumdog activities to wider mathematical learning.

1. Introduction

Sumdog is an adaptive learning platform for children aged 5 to 14 that helps build maths fluency through curriculum-aligned practice. Pupils answer tailored questions integrated into 39 games, earning coins and rewards to customise their online avatar and house. The platform enables inter-school competitions and online maths contests against local schools. Sumdog's Fluency Booster adaptivity adjusts question difficulty in real time based on performance, ensuring pupils work at an appropriate level.

From a teacher's perspective, Sumdog functions as a diagnostic tool supporting identification of learning gaps and planning. Teachers can set practice or low-stakes tests, viewing results in real time through a class dashboard. This allows Sumdog to be used as independent practice, homework, morning activities, or targeted intervention. Teachers can track progress, identify error patterns, and differentiate by assigning specific skills to individuals or groups, enabling quick responses to emerging gaps.

During the 2025-26 academic year, Sumdog continued its partnership with ImpactEd Evaluation to investigate the platform's impact on pupils' mathematical outcomes and attitudes, with particular attention to whether effects differ for pupils eligible for Pupil Equity Funding (PEF) or with Additional Support Needs (ASN). Building on research conducted in English schools in 2024-25, this report examines these questions within a Scottish educational context.

This interim study focuses on experienced users, drawing on insights from practitioners who have integrated Sumdog into their teaching for a minimum of five years. The report is based on interviews and focus groups with 9 teachers from 9 different primary schools across Scotland in November and December 2025.

2. Methodology

2.1 Research questions

Below are the research questions this impact report aims to answer.

- ▶ How is Sumdog being used by longer-term school users?
- ▶ What impact does Sumdog have on teachers' pedagogical practice and decision-making?
- ▶ What impact does Sumdog have on pupils' mathematical skills and attitudes?
- ▶ Does Sumdog's impact differ across pupil subgroups?

Each of these research questions will be addressed in each section below.

2.2 Design, sample and analysis

Nine (9) teachers from nine (9) different primary schools across Scotland participated in this qualitative study during November and December 2025. All participating schools had been using Sumdog for a minimum of five years, with some having integrated the platform into their practice for over a decade. Two one-to-one interviews and three focus group discussions (FGD's) with two, three, and two participants respectively, were conducted with teachers to capture their experiences of using Sumdog.

| Teacher | Teacher's years of Sumdog experience | FGD/Interview |
|---------|--------------------------------------|---------------|
| 1 | 13 | Focus group 1 |
| 2 | 10 | Focus group 1 |
| 3 | 10 | Interview 1 |
| 4 | 6 | Interview 2 |
| 5 | 5 | Focus group 2 |
| 6 | 5 | Focus group 2 |
| 7 | 10 | Focus group 3 |
| 8 | 9 | Focus group 3 |
| 9 | 10 | Focus group 3 |

Figure 1: A table showing Teacher participants by focus group/interview and years of Sumdog experience

Each session lasted approximately 45 minutes to an hour. The interviews and focus groups followed a semi-structured approach. This means that while there was a prepared interview guide with key questions and topics to cover, the format remained flexible, allowing conversations to develop naturally and follow relevant tangents as they emerged. Probe questions were used to encourage participants to expand on their responses and explore topics in greater depth. To recognise teachers' time and contribution, each participant received a £20 Giftpay voucher.

The qualitative data was analysed thematically, with responses systematically coded according to the research questions to identify common patterns and themes across participants. These themes are presented throughout the report, illustrated with examples from the interviews and focus groups where appropriate.

2.3 Limitations

- ▶ **Limited sample size.** Findings are based on the perspectives of nine teachers who have been using Sumdog for over 5 years. While these insights are valuable, they cannot be assumed to represent the views or experiences of the wider cohort, for example of teachers who haven't used Sumdog for this long. Additional qualitative data collection scheduled for May will help broaden the evidence base and will be incorporated into the annual report.
- ▶ **Single data source.** At this stage, findings draw on one methodological approach, meaning there has been no triangulation of data sources. The annual report (September 2026) will address this by integrating evidence from three distinct methods, strengthening the robustness of the conclusions.
- ▶ **Limited pupil voice.** While the evaluation captures some insights into pupil experience through teachers' eyes, pupil engagement and enjoyment of Sumdog were not explored from the pupils' perspective. Including pupil interviews in future phases would provide richer, first-hand perspectives on their relationship with Sumdog and with maths more broadly.

3. Sumdog in Practice: Usage and Integration

Teachers use Sumdog flexibly, adapting it to suit different classes and contexts. Despite this variation, three core uses emerged consistently. Sumdog was used as:

- ▶ a diagnostic tool to identify gaps in learning
- ▶ a consolidation tool for targeted practice and repetition, and
- ▶ a platform for motivational competitions and rewards.

3.1 Sumdog as a diagnostic tool that can identify gaps

A key way that Sumdog is used across settings is as a diagnostic tool that identifies where students are and where they need to focus next, helping teachers target their teaching and support day-to-day practice. Multiple teachers use it specifically as a baseline to track progress alongside other forms of assessment. One teacher explained:

“ I've been using it as like a baseline to measure where the kids are with certain concepts... It allows me to see the gaps and then the people to target. So, I can identify like even if there's a certain question that quite a lot of the class didn't get, then I know that that's what I've got to go over.”

- Teacher 3, Interview 1

Some teachers conduct these assessments multiple times a year across whole schools and use the diagnostic data to facilitate conversations with parents about pupil progress:

“ We use the diagnostic assessments across the school, probably year three to seven... three times a year. So to start middle and the end of the year and then that's also reported back to parents because it spits out level and it's used alongside other [assessments].”

- Teacher 1, Focus group 1

Teachers also use Sumdog to identify, down to a question or concept level, what needs reinforcing either as a whole class or for specific groups or individuals. The multiplication map is cited frequently as a useful way of visualising progress and pinpointing specific elements that need work. One teacher described their systematic approach:

“ When I took a screenshot early on, we had a great deal of red and orange and very few green, but it indicated exactly which multiplication tables were strengths and which ones to work on. So we agreed as a class what we were going to do... over the next six months, we just every week pulled up the heat map.”

- Teacher 6, Focus group 2

Overall, this diagnostic functionality enables teachers to make informed, data-driven decisions about their teaching and target support where it is most needed.

3.2 Sumdog as a consolidation tool

Sumdog is used by all teachers interviewed as a consolidation tool for maths learning, integrated systematically to reinforce and embed skills taught in class. Sumdog provides individualised learning pathways based on diagnostic baselines, delivering targeted practice matched to each pupil's level:

“It gives them their bespoke tailored pathway to their own learning that they can own and progress. Once they do their baseline, Sumdog's clever in a sense that it will give them the right sort of questions to challenge them.”

- Teacher 3, Interview 1

The platform is frequently embedded within rotation-based numeracy teaching, where it functions as one station amongst a suite of approaches. Teachers particularly deploy it to target recall and address specific gaps identified through classroom assessment:

“From our point of view, at the minute we are targeting children from primary four to seven where recall is the main use. It's also used as part of our planning process for delivering learning through games. Most teachers use a rotation approach to teaching their numeracy and more often than not, Sumdog is part of that rotation”

- Teacher 5, Focus group 2

Teachers also assign Sumdog practice on concepts requiring extended consolidation, using its adaptive algorithm to maintain focus on weaker areas:

“If they're getting it wrong, you know, there's repetition there...Whereas sometimes as teachers we're like, right, we've done that, let's move on.”

- Teacher 4, Interview 2

Overall, Sumdog functions as a flexible consolidation tool that teachers integrate strategically to supplement and reinforce classroom instruction.

3.3 Sumdog for competitions and rewards

Sumdog provides a built-in incentive mechanism across schools, with all participating teachers incorporating it into their practice in varied ways. Some use it as a reward to supplement other learning activities, whilst others establish structured competitions with tangible rewards tied to students' Sumdog engagement. Teachers can set competitions on Sumdog between individual pupils or groups within a school. Sumdog online maths contests operate at multiple levels with pupils competing against classes and other schools in their region or on a national scale. One teacher has developed a particularly systematic approach to competition management:

“ I set competitions for the whole school. I've just actually managed to set them all the way up to June... I will run weekly competitions and then I'll hand out certificates in assemblies.”

- Teacher 2, Focus Group 1

The competitive element proves especially powerful when teachers participate directly alongside students. Having the opportunity to compete against their teacher adds an extra buzz to the experience and represents what several educators noted as a particularly enjoyable and effective use of the platform. As one teacher explained:

“ The kids love playing against each other, or even me, and setting up games at the same time and things which I like to do for a kind of reward time.”

- Teacher 7, Focus group 3

The reward systems embedded within Sumdog appear widely utilised, whether teachers offer Sumdog time itself as the reward or students earn in-game rewards for playing. However, one teacher reflected on an occasional limitation with the platform's reward functionality:

“ You can give coins, but sometimes I like to give out coins, but then you can only do it once a day... I've already rewarded them that day... I want to do it again, but I can't.”

- Teacher 3, Interview 1

This observation suggests that in certain situations, the daily cap on reward distribution may limit a teacher's ability to respond spontaneously to student achievement, particularly during extended learning sessions where multiple opportunities for reinforcement might arise.

Nevertheless, the competitive and reward features remain widely praised and extensively used across nine schools. As one teacher summarised:

“ The best feature is probably the games. [the kids] have their own favourite games and they enjoy the competitive element.”

- Teacher 9, Focus group 3

Overall, this integration of competitions and rewards has become an integral part of how Sumdog is deployed across educational settings, with teachers consistently relying on these features to drive engagement with maths.

3.4 Variability in Sumdog usage across teachers

Whilst all teachers interviewed value Sumdog highly, usage varies considerably across settings. Sumdog champions find the platform straightforward to integrate, but this experience appears to be limited to those with designated responsibility or developed proficiency.

The main barriers to consistent use are lack of time, rising teaching pressures, and varying technical confidence. One educator explained:

“ People struggle for time to fully understand how it works. I'm kind of fortunate that I'm familiar with the layout, so it didn't take a great deal of time for me to see the added bonus.”

- Teacher 1, Focus group 1

This often means Sumdog champions end up managing its implementation on behalf of colleagues:

“ There was a spell when it was just me doing it because I knew how to do it and it was just quicker than trying to show someone.”

- Teacher 6, Focus group 2

Champions inadvertently become gatekeepers rather than facilitators of whole-school adoption. Additionally, occasional technical issues can compound these challenges and affect staff buy-in. Whilst these often stem from broader infrastructure rather than Sumdog itself, technical friction can lead to platform abandonment amongst staff with lower confidence:

“ If people aren't super savvy with technology and it's not getting on the Wi-Fi... they might push it to the side if it's being temperamental.”

- Teacher 6, Focus group 2

Based on the aforementioned findings, it is recommended that Sumdog focuses on building strong wider staff engagement and awareness in order to maximise its potential. Building basic confidence across all staff through practical support, clear guidance on core features, and recognition of infrastructure limitations would help ensure the platform's benefits are shared more evenly across classrooms. It would be interesting to further investigate the approaches that would be more beneficial in encouraging wider staff buy-in.

Overall, Sumdog is used flexibly across Scottish schools, with teachers adapting it to suit different classes, pupils, and practical constraints. Despite this variation, **three core uses are consistent: identifying gaps in learning through diagnostics, consolidating maths through targeted practice and repetition, and motivating pupils through competitions and rewards.** Teachers value the platform's data for informing instruction and tracking progress, while positioning Sumdog as one effective tool within a wider numeracy approach. Wider staff buy-in would help further increase Sumdog's impact.

4. Impact on Teachers: Time Efficiency and Focused Teaching Decisions

Sumdog appears to be firmly embedded in the practice of teachers who have used it for over five years. This section explores its impact on teachers, examining why Sumdog is valued as a classroom resource and how it informs professional judgement and day-to-day decision-making.

Building on the ways Sumdog is used for diagnostics and consolidation, teachers report that these functions have **tangible impact on their daily practice by saving time and helping them focus their teaching more effectively**. The platform's diagnostic capabilities enable quick identification of learning needs without the administrative burden of traditional assessment methods:

“ It helps me plan better because I know which group needs the most support or less support for a particular topic. It just takes no time to do. You haven't got to photocopy. You haven't got to print off... I can think of others that are great, but nothing really compares in terms of the assessment stuff that you can get back”

- Teacher 9, Focus group 3

This practical utility has enabled Sumdog to become embedded in daily teaching practice across schools. A key factor in this sustained integration is the platform's curriculum alignment, which teachers praised as fundamental to its value. Rather than translating or adapting resources designed for different educational contexts, **teachers can deploy Sumdog with confidence that it matches their learning outcomes**:

“ I advocate for Sumdog because it is based around the Scottish curriculum and it means that when I get particular learning outcomes, I know exactly what that is asking me to deliver. Whereas if I use other platforms, they are very much tailored to the national curriculum, which doesn't marry up naturally in all areas with our curriculum.”

- Teacher 5, Focus group 2

However, this alignment requires ongoing attention. With Scotland's mathematics curriculum undergoing major review and set to change by 2027, one teacher noted that:

“ Sumdog will want to be almost ahead or in line of the curve to maintain its relevance and value.”

- Teacher 6, Focus group 2

Throughout the interviews, teachers positioned Sumdog as one valuable tool within a broader pedagogical framework. Whilst they praised its ability to supplement and enhance their teaching, they were clear that its strength lies in complementing rather than replacing other approaches. One teacher articulated this balance:

“ I think it's very good. I think it's a really, really good app. I've not seen in high school in the last decade anything that makes kids so happy and desperate to learn maths, but it's not a panacea for maths.”

- Teacher 8, Focus group 3

This strategic positioning reflects teachers' recognition of both Sumdog's considerable strengths in supporting curriculum delivery and pupil engagement, and its appropriate boundaries within effective mathematics teaching.

For teachers, long-term use of Sumdog has had a clear impact on practice, supporting more efficient planning, sharper professional judgement, and more targeted teaching through its diagnostic, curriculum-aligned features.

5. Impact on Pupils: Skills, Engagement, Attitudes

This section explores teachers' reflections to examine how Sumdog impacts pupils' experiences of learning mathematics. It brings together key themes relating to engagement, confidence, fluency, and attitudes towards maths, as well as the conditions under which these perceived impacts are most visible. The section considers how pupils interact with the platform in practice and how this shapes their relationship with mathematical learning.

5.1 High motivation and voluntary engagement

All participants praised Sumdog for its motivational effects, explaining that pupils enjoy it and that it is unanimously popular. When pupils are given the choice to engage with Sumdog or other resources or activities, Sumdog is consistently the preferred option. One teacher stated plainly:

“ The motivation is there to play Sumdog. If you say what would you rather do, textbook or activity or Sumdog, they'll all instantly go to iPads to go on Sumdog.”

- Teacher 4, Interview 2

Some teachers were even surprised by the depth of motivation pupils had to engage with their own progress. One educator reflected:

“ Having, you know, senior leaders come into class or visitors come in the room and talk to learners and then be able to articulate what they were doing and why that was really rich and it caught me off guard.”

- Teacher 9, Focus group 3

When returning to the earlier point about the use of competitions and rewards, one teacher had statistics to hand that highlighted how effective the competitions were for increasing regular activity:

“ 41% of children were deemed to be active pupils. [...]After a year of doing the competition, that jumped up to 75% of our pupils became active regular participants before we did the competition.”

- Teacher 7, Focus group 3

This substantial increase demonstrates a relationship between structured competitive elements and pupil engagement with the platform.

5.2 Improved fluency and confidence through repetition

As earlier noted, one of the key uses for Sumdog is as a consolidation tool. Staff consistently cited how Sumdog's repeated practice helps pupils develop fluency and confidence in mathematics, with this being particularly evident in students who struggle with the subject. One teacher observed:

“ *The low attainers in my class love it and there's never any issues... they enjoy it, they work through it... their confidence is, is good on it, much more confident than when they're working through workbooks or worksheets.*”

- Teacher 1, Focus Group 1

Another teacher used Sumdog diagnostics to describe improvements in pupils' fluency in multiplication over time, as a result of repeated use of the platform:

“ *The pride of seeing the class had shifted from an orangey red kind of overview to an orange light green...if I use the multiplication checkup that I did in September last year... every child's getting maybe half of their questions correct...and by the time you moved to...April, the number of Green boxes has quite noticeably improved [through Sumdog repetition].*”

- Teacher 6, Focus group 2

This repetition-based approach allows pupils to build mathematical fluency and confidence at a pace that suits their individual needs.

5.3 Bridging engagement with broader mathematical attitudes

Whilst all teachers reported that pupils enjoy Sumdog, there was notable hesitance about whether it shifts attitudes towards mathematics more broadly. Teachers observed that pupils do not necessarily recognise Sumdog as "doing maths," which divides opinions among teachers.

Some viewed this positively, as it bypasses negative associations:

“ *They're actually learning and they don't even know they're learning. When we're doing textbook work, you can instantly see the children be like, oh, I hate maths... I never get that when they're on Sumdog.*”

- Teacher 2, Focus Group 1

The gamified format circumvents barriers to engagement that traditional mathematics work creates. However, others expressed concern about this disconnect:

“ *I have to keep reminding them... you're doing this to improve. You're not doing this just for fun... there is a learning aspect to it*”

- Teacher 5, Focus group 2

This highlights a tension between motivational benefits and the pedagogical goal of developing pupils' mathematical identity and metacognitive awareness. Overall, participants did not believe pupils' attitudes towards mathematics were fundamentally shifted beyond enjoying Sumdog itself. As one teacher summarised:

“ I think they do definitely enjoy using Sumdog for their maths, but I don't know if it's a game changer for how they feel about maths in general.”

- Teacher 6, Focus group 2

It would be interesting to explore whether explicitly connecting platform activities to wider mathematical learning would help translate engagement with Sumdog into a broader improvement of attitudes towards maths. **Sumdog has plans to further reinforce the link between reward features and mathematical progress** through allowing students to see which skills they've completed and more easily understand the rewards they've received as a result.

Pupils show strong motivation to use Sumdog, consistently choosing it over other maths activities and engaging voluntarily, particularly during competitions. **Teachers report clear benefits for confidence and fluency**, with the platform's adaptive repetition allowing pupils to progress at their own pace. **However, pupils often don't recognise Sumdog as "doing maths,"** which maintains their motivation to engage with the platform but may not correlate with a shift in the improvement of pupils' broader attitudes towards mathematics.

6. Differential Impact and Equity Considerations

This section explores how Sumdog impacts different pupil subgroups, with a particular focus on whether its benefits are concentrated on specific cohorts. Teachers consistently highlighted the platform's ability to tailor content and identify gaps, which is especially relevant when considering pupils who face varied barriers to learning mathematics. Rather than benefiting narrowly defined groups, Sumdog appears to support a wide range of learners across diverse needs and contexts.

6.1 Broad accessibility across diverse learners

When asked whether Sumdog benefits some students more than others, all participants cited examples of pupils facing barriers to learning who engaged particularly well with the platform. One teacher described:

“ One of my students, he's got lots of brain issues [not further explained] and he loves it. It's his favourite thing and he asks me every day, when's the laptop coming back? He can't wait to go back on it because it works for him”

- Teacher 1, Focus Group 1

Low-attaining pupils were cited multiple times as especially motivated by the combination of screens and gamification, whereas they might disengage with traditional methods:

“ The low attainers in my class love it... their confidence is much more confident than when they're working through workbooks or worksheets, probably because it's on technology, they're probably more likely to engage, it's what they know and love.”

- Teacher 2, Focus Group 1

However, some staff noted limitations. For a small number of pupils with Additional Support Needs, competitive elements can be overstimulating or distressing:

“ We've had a few instances of children who have autistic spectrum disorder, and they struggle if they're not first or they can't do something... But that would be a really small group of children.”

- Teacher 4, Interview 2

Notably, whilst many examples of individual benefit were cited, the overall feeling was that no single group stood out as benefiting substantially more than others. Teachers viewed this broad accessibility as a key strength:

“ No one benefits less, we've got a whole class now of lots of different challenges and needs. This is 2025 classroom where children are coming in with all sorts of backgrounds and issues, they all use Sumdog to some extent.”

- Teacher 3, Interview 1

Rather than functioning as a targeted intervention, **Sumdog appears to be an inclusive tool that can be differentiated to meet diverse needs within mainstream settings.** This universality may represent one of the platform's most significant strengths in supporting contemporary, inclusive classroom practice.

6.2 Home access inequalities and competition structure

When considering Pupil Equity Funding eligible pupils, a notable paradox emerged: whilst Sumdog successfully creates equity within the classroom, inequalities surface around access to technology and the ability to use it at home. A key strength noted by several teachers was that Sumdog provides an even playing field within the classroom, with pupils working at tailored levels without visible stratification:

“ Everyone's together doing it, like you could be sitting next to someone and it doesn't matter that they've got different questions, it looks like everyone's doing the same so there's a unity and equity in participation.”

- Teacher 7, Focus group 3

This in-school equity is particularly valuable for PEF-eligible students, who can engage with mathematics on equal terms with their peers during lesson time. However, this classroom-based equality becomes undermined by inequalities that emerge beyond the school gates. One teacher explains:

“ Sadly, a lot of them who maybe don't have access at home to a computer or an iPad or a phone, they're the ones who actually would really benefit from playing Sumdog. They just don't get the time at home to do it.”

- Teacher 8, Focus group 3

This creates a situation where the equity achieved during school hours is eroded at home, as pupils who would benefit most from additional practice lack the resources to access it, potentially widening attainment gaps. Some schools have attempted to extend equitable access by structuring early morning sessions:

“ We have soft start in the morning so the children can come into school earlier and they would do Sumdog for those 15 minutes.”

- Teacher 8, Focus group 3

While this extends the window of equal access, it places additional demands on staff and pupils and may not fully compensate for the cumulative advantage that consistent home access provides. Thus, whilst Sumdog demonstrates clear potential in supporting PEF-eligible students within school settings, realising its full equity impact remains constrained by unequal access to technology at home.

6.3 Supporting pupils with English as an Additional Language

A subgroup that emerged strongly from interviews was pupils with English as an Additional Language (EAL), who sometimes struggle to read questions. One staff member noted:

“ We're finding that especially children with English as an additional language, they've not been able to read the question. It's a language barrier rather than the maths issue." This highlights how language comprehension can prevent pupils from demonstrating their mathematical understanding.”

- Teacher 9, Focus group 3

However, teachers praised Sumdog's audio features for supporting pupils with EAL:

“ When a child comes into your classroom not speaking any English, it's quite a universal tool for them to be feeling that they're part of something, they can put their headphones on... and the question can get read out to them if required.”

- Teacher 4, Interview 2

The audio feature serves as an important accessibility tool that maintains inclusion in mathematics practice. Despite this, one teacher noted that even with audio support, some students find questions challenging. They suggested more purely numerical questions or visual aids such as bar models:

“ The bar model problem-solving approach is particularly effective because it is highly visual and helps pupils decide which operators to use. For example, if you have four multipacks of crisps with six packets in each, this can be shown as a bar made up of four groups of six, making the total easy to see.”

- Teacher 3, Interview 1

It is worth noting that Sumdog offers a number of questions that include visual representations of mathematical concepts and processes, including bar models amongst others. This points towards the importance of making those features more easily discoverable by teachers.

Overall, the findings suggest that Sumdog's greatest strength lies in its broad accessibility and adaptability, rather than in targeting specific pupil subgroups in isolation. While certain pupils, such as low attainers, those with additional support needs, and pupils with EAL, were frequently cited as benefiting, no single group emerged as benefiting disproportionately more than others. At the same time, inequalities in access to technology outside school and the potential challenges of competitive features highlight the importance of thoughtful implementation.

7. Summary

Sumdog is an evidence-based maths fluency platform for children aged 5-14 that uses a games-based approach to engage every learner. Teachers can track pupil progress through automated reporting and easily identify intervention areas.

This report examines how Sumdog is implemented in Scottish schools that have used it for five years or more, exploring its impact on pupil outcomes including maths-related attitudes and skills. The report is based on interviews and focus groups with 9 teachers across 9 primary schools.

Sumdog was valued as a tool for both teaching and learning. Teachers described it as an invaluable diagnostic resource that automatically adapts to individual ability levels. Its longevity, reliability, and strong alignment with the Scottish curriculum highlight the importance of viewing Sumdog not just as a pupil-facing learning tool, but as a resource that informs teachers' pedagogical practice. The platform suits a diverse range of learners rather than targeting specific groups, though specific literacy-related challenges for English as an Additional Language (EAL) learners were highlighted.

Teachers reported increased pupil engagement and motivation, but believed that many children experience Sumdog primarily as a game and do not recognise it as maths. Consequently, their enjoyment does not always translate into changed attitudes towards classroom maths. Sumdog helps build mathematical fluency through revision and consolidate of core numeracy skills. Rather than focusing on isolating the platform's direct impact on pupils, a more meaningful indicator may be how seamlessly it has become integrated into teachers' practice, no longer operating as a separate or supplementary activity, but woven into their teaching approach.

Maximising Sumdog's potential requires reliable technological infrastructure and strong staff engagement. Teachers reported challenges including inconsistent connectivity, variable device access, and varying staff buy-in, which affect how consistently the platform is used. This study spoke only to proficient users; exploring experiences of teachers who use it less frequently would be valuable.

8. Recommendations for Sumdog & Next Steps for The Evaluation

► Continue to highlight Sumdog as both a pupil and teacher resource

Experienced teachers value Sumdog not only as a pupil-facing platform but as a diagnostic resource that informs pedagogical practice. Sumdog should develop materials that support strategic use of its features, demonstrating how to interpret data to inform teaching decisions and deploy platform features to support diverse learners and maximise engagement.

► Understand varied user experiences and build confidence across all school staff

This study focused on proficient users. Future research should explore teachers who use Sumdog less frequently or face different implementation contexts, consulting with them about the barriers they encounter around time, technical confidence, and competing priorities. This would help Sumdog understand factors influencing adoption and develop targeted support that addresses real challenges. To ensure benefits are shared evenly across classrooms, Sumdog could provide schools with guidance on establishing a Sumdog Champion as a formal support point, develop short practical training resources for staff meetings, and create accessible onboarding materials focused on core essential features.

► Interrogate the experience of pupils with English as an Additional Language

Teachers highlighted that EAL pupils can face barriers when language comprehension obscures mathematical understanding, although it's also important to note the important role that text-based questions that assess students' ability to apply maths to different contexts play in developing well-rounded numerical fluency. Whilst audio features were praised, teachers suggested incorporating more numerical questions and visual representations such as bar models. Research should examine how pupils with EAL currently experience Sumdog and which adaptations would most effectively support their development.

► Address the forthcoming impact evidence

When platforms are deeply embedded in practice, the absence of a meaningful control group makes it difficult to isolate specific impacts. The forthcoming impact report will compare attainment of pupils using Sumdog versus those who are not, providing quantitative evidence to complement these qualitative insights.



Supporting our purpose driven partners to make better decisions using high quality evidence.



Get in touch

www.evaluation.impactgroup.uk