Examining Correlations Between Sports Enrichment and Development of Disadvantaged Pupils in England

As part of the Laidlaw Leadership & Research Programme

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Abstract

Extracurricular activities (ECAs) are widely associated with positive outcomes for young people, but less is known about whether these benefits are experienced equally by pupils who may face barriers to participation. This project examines the relationship between ECAs, with a particular focus on sport, and pupil development using teamwork, adapting, belonging, wellbeing, and engagement as key indicators.

An examination of the existing literature indicates that few studies examine the effects of extracurricular activities, particularly sport, on pupils' development across teamwork, adaptability, belonging, wellbeing, and engagement. The study focuses particularly on disadvantaged (Pupil Premium) students, pupils with English as an additional language (EAL), and pupils with special educational needs and disabilities (SEND). Using quantitative survey data from pilot studies conducted in primary schools in two different regions in England, complemented by qualitative data from ambassadors who led the sports activities in one region, our study takes a mixed methods approach to understand the relationship between ECAs and student outcomes, with a focus on disadvantaged students.

Overall, our findings indicate that pupils with lower baseline scores showed greater gains in teamwork and adapting, while pupils with Pupil Premium status showed significantly smaller gains after controlling for baseline score, EAL and SEND status. There was also a divergence between teachers' observations and pupils' self-perceptions of average changes over time. EAL and SEND status were not significant predictors of changes in teamwork or adapting. These findings suggest that expanding access to extracurricular activities alone may not be sufficient to ensure equitable outcomes. Understanding how different groups experience and benefit from provision may be equally important when designing and evaluating enrichment programmes.

Key words: extra-curricular activities, sports enrichment, belonging, adapting, wellbeing, teamwork and pupil development.

Acknowledgements

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1. Introduction

There exists substantial research on the impact of ECAs on pupil development, particularly academic attainment, and on variations in impact between female and male students. In light of a recent white paper published by the UK government highlighting the importance of curricular enrichment in primary and secondary education (DfE, 2026), the previously narrow focus on academic attainment as the primary indicator of pupil development has been expanded to include softer skills which are integral to longer-term social and career-related success. As a result of this growing interest in curriculum development, the government urges schools to cooperate in a 'self-improving system' to establish systems and programmes that can begin to address current attainment gaps, particularly for socioeconomically disadvantaged students.

Having identified some gaps in existing literature pertaining to the impact of sports enrichment on more disadvantaged pupils, the identification and analysis of any improvements in two key skills (teamwork and adaptability) and other secondary indicators (belonging, wellbeing and enjoyment) related to participation in sports ECAs forms the basis for this report. The analyses and discussions arising from the data were preceded by two independent pilots of sports enrichment activities for Year 6 pupils conducted in two different regions of the UK and across multiple schools. Though data from both may offer key insights, greater consideration is given to the region with the larger sample size and greater statistical power.

In Region 1, university student ambassadors led three hour-long sessions with activities designed to improve throwing, jumping, and running skills over the course of six weeks that culminated in an inter-school competition focused on the skills learned. Region 2 employed a similar programme structure, although sports activities were led by school staff rather than university students, and the region had prior experience of using the SkillsBuilder framework.

In producing this report, we aim to contribute to discussions surrounding the relationship between sports-related ECAs and the development of disadvantaged students and, where possible, how implementation and delivery of such enrichment activities may relate to these outcomes. Our project most closely aligns with SDGs 3: Good Health and Well-being, 4: Quality Education, and 10: Reduced Inequalities.

2. Literature Review

A large body of literature has examined the effects of curricular enrichment (in particular, sports) on pupil development as well as factors affecting student participation, and enrichment programme effectiveness. In constructing this review, we aim to find potential gaps/limitations in the research and use this to situate our findings within wider discussions surrounding enrichment importance, design and implementation for primary school pupils.

2.1. Overview of existing research relating to sports enrichment

When focusing on sports-related curricular enrichment for students, many sources attest to finding correlations between participation in sports and improvement in both academic performance and personal development. The studies explore developmental benefits of sports through different lenses including behavioural gains, physical improvements and social wellbeing.

Firstly, sports enrichment is linked to greater psychological and social wellbeing amongst pupils; in particular, Bryzhak *et al.* (2024) find statistically significant differences in self-esteem between pupils involved in extracurricular sports and those who were not, in a study investigating changes in self-perceptions amongst younger students (aged 6-11) from ten different schools. Children not involved in extracurriculars also reported lower intrinsic motivation compared to those involved in organised sport (Papaioannou, 1992). This is supported by Bailey (2006) who also emphasises the importance of interactions with teachers and coaches in realising these psycho-social benefits of sport.

Existing literature utilises self-perception as a key indicator of wellbeing; in fine-tuning our focus to parameters related to our research questionnaires (e.g., teamwork, adaptability and belonging), it was found that a positive correlation existed between sports participation and wellbeing, in which belonging was included (Denovan and Dagnall, 2023). The study led to interesting discussions surrounding gender: findings indicated that girls showcased greater

improvements in wellbeing and cognitive skills than boys. It has also been suggested that motivational differences for taking part in extra-curricular activities are present in children of differing genders: girls rate motivations such as skill acquisition, achievement, status, and team affiliation significantly higher than boys (Daley and O'Gara, 1998).

These studies highlight gaps in current understanding surrounding the impacts of sports enrichment design and implementation amongst pupils of different backgrounds and age groups. Denovan and Dagnall (2023) concur with the idea that such research should be pursued, especially as existing literature focuses largely on the impact of curricular enrichment on academic attainment with variations between female and male students. Probing factors such as SEND and English as an additional language in our research offers us the opportunity to contribute to increasing the breadth of understanding of sports enrichment for primary school children, particularly in the UK.

2.2. Factors determining student participation in ECAs

There has been substantial research into the socio-economic determinants of student participation in extracurricular activities. The literature demonstrates a clear and persistent social gradient, with students from higher socio-economic backgrounds participating in organised extracurricular activities at higher rates than their more disadvantaged peers (Feldman & Matjasko, 2005; Heath *et al*., 2022). Participation has consistently been linked to a range of positive educational and developmental outcomes, including improved academic achievement, stronger school engagement, better attendance, enhanced social and interpersonal skills, higher educational aspirations, and more favourable employment outcomes later in life (Feldman & Matjasko, 2005; Lipscomb, 2007).

While socio-economic status is one of the strongest predictors of participation, research suggests that access is shaped by a complex interaction of individual, family and school-level factors. Financial barriers, including activity fees, uniforms, equipment and transport costs, are

widely recognised as limiting participation for lower-income families (Feldman & Matjasko, 2005). However, studies increasingly argue that these costs alone do not fully explain inequalities in participation. Household income is closely associated with parental education, cultural capital, parenting practices, employment patterns and time availability, all of which influence whether children are encouraged and supported to engage in organised activities (g, 2011; Hjalmarsson, 2023). Consequently, socio-economic differences in participation reflect not only financial resources but also wider social and cultural inequalities.

The literature also highlights the influence of demographic characteristics on extracurricular participation. Gender differences are evident across many forms of extracurricular involvement, with boys and girls tending to participate in different types of activities and, in some contexts, at different overall rates depending on cultural and institutional factors (Feldman & Matjasko, 2005). Students with EAL status, recent migrants, and those from minority ethnic backgrounds may also face additional barriers to participation, including language difficulties, limited awareness of available opportunities, cultural expectations, reduced parental familiarity with school systems, and weaker social networks (Heath *et al*., 2022). These factors often intersect with socio-economic disadvantage, compounding inequalities in access to extracurricular opportunities.

Recent longitudinal research has further challenged the assumption that financial constraints are the sole driver of participation gaps. Hjalmarsson (2023), using linked longitudinal survey and administrative data from Sweden, found that although students from lower-income households participated less frequently in extracurricular activities, changes in household income alone did not generally lead to changes in participation. The findings suggest that economic constraints are most significant for the poorest households, while broader family characteristics, including parental preferences, cultural resources and household organisation, play a more substantial role in explaining participation differences across the wider population.

Overall, the literature indicates that inequalities in extracurricular participation are influenced by a combination of socio-economic, demographic and cultural factors rather than

by income alone. Financial resources remain important, particularly for the most disadvantaged families, but access is also shaped by parental education, cultural capital, family practices, gender, language background, ethnicity, and the availability of information and support. This broader understanding suggests that initiatives aimed at widening participation should address not only affordability, but also the wider structural and social barriers that influence students' ability to engage in extracurricular activities.

2.3. Determinants of Programme Delivery Effectiveness

In line with one of our aims to discuss our findings through the lens of programme design and delivery, we aim to comment on the successes and limitations of its implementation in both pilots.

Many of the underlying strategies for making sports programmes effective for pupils are arguably akin to those utilised in the classroom. In a review of existing research on teaching strategies, notable techniques in developing learning included incorporating new skills in other subject areas or settings, monitoring students' understanding and tailoring to the needs of each individual (Ko, Sammons and Bakkum, 2013). When considering teaching of sports in particular, Madsen *et al.* (2025) encourage using the body movement to explain activities and, in turn, build stronger connection with younger students, highlighting the importance of non-verbal expression and resonance in effective teaching. Interestingly, the emphasis on enjoyable activities, as opposed to traditional competitive games, is also highlighted as a way to make the experience more inclusive and effective.

3. Methods

The overarching structure of our project is a pre-post intervention study utilising a mixed methods approach. This style of research employing largely quantitative and some qualitative methods is used for its opportunity for greater depth and breadth in our analysis.

3.1. Methodology

Collecting data from two regions with a large number of students to ascertain the effects of a sports enrichment intervention makes the choice of numerical assessment apt. The form of assessment used is a Likert scale questionnaire with readily comprehensible statements and a relatively small range (1-5), making it a simple and effective tool when collecting information from the young year 6 pupils themselves. Particularly for teachers, this simplicity may have also been effective in minimising fatigue from filling out multiple assessments. However, there are disadvantages with using the Likert scale; the respondents were unable to give their own personal answers or provide more information as to how they were feeling. A more visual questionnaire was created to aid communication and understanding for students with SEND – this too employed the same 1-5 scale.

Qualitative methods in the form of surveys for student ambassadors and school visit were carried out to contextualise our findings from the dataset, obtaining four responses. This form of mixed methods research is helpful in better understanding the educational landscape and contextual factors influencing the study.

3.2. Baseline/Endline Questionnaires for Students & Teachers

The students' identities were pseudonymised using a string consisting of a 6-digit code, representing individual characteristics, and a random word. Data was collected before and after the sports intervention. Questions were divided into 5 sections.

Section B: This section was focused on collaborative and teamwork skills. The questions asked circled ideas including working well with others and finishing what they started.

Section C: This section focused on adaptability and self-management skills. These questions aimed to understand how students regulated their emotions during times of stress, how the students reacted in new environments and in approaching new tasks.

Section D: This focused on how the students found sports and physical activities with the purpose of gauging the students' enthusiasm and desire to partake in sports-related activities.

Section E and F: This focused on the students' thoughts on school, how they engaged with school, as well as their sense of belonging and wellbeing

Section G: This was a retrospective reflection-based section of the questionnaire.

For SEND students, the questionnaire was adapted and made into a visual questionnaire to aid communication and comprehension. Questions prompted students to answer in accordance with their feelings and were assisted by their teachers when answering these.

Teachers were given a questionnaire in the form a Likert Scale. Respondents were asked how true they found the statement in context of the students, answering with, 'Never, not often, sometimes, often, always'. Section B focuses on understanding the students' ability to collaborate with other students from the teacher's perspective. Section C focuses on understanding the students' ability to self-manage and adapt.

3.3. Data Analysis – R

With the overarching structure of the project being a pre-post intervention study, comparisons can be made between baseline and endline data comprised of pupil self-assessment and teacher reports. Determination of the average score for each assessed skill before and after the intervention can be used to ascertain the overall improvement and highlight which skill(s) may have been developed to the greatest extent. This analysis can be developed further to see how improvements within different subgroups of students (e.g., if and how adaptability improved amongst children with EAL and children without). In addition to this, a plot of students' self-assessed scores against teacher scores can be used to find and analyse deviations, if any, between their different ratings.

Having obtained the data, its neat numerical form made it easier to organise and analyse with an algorithm using R. Tables, plots and other figures could be produced using the data to identify improvements and trends, if any. In order to examine the extent to which different baseline and demographic factors may predict changes in teamwork and adapting skills, a multiple linear regression was carried out for both regions focusing on baseline scores and pupil premium/EAL/SEND status in turn.

3.4. Qualitative/Contextual Research

On 6th July 2026, a visit to School A was carried out by the group and impact advisor, culminating in an elucidation of the challenges faced by students in developing the identified character skills and the impact of the sports intervention conducted by university ambassadors through conversations with the school headteacher and year 6 teachers. These staff members were able to offer key statistics and insights – in light of these, the baseline and endline data obtained may be better understood. The following questions were asked to the students' teachers:

- 'Was participation in sports activities consistent across most pupils?'
- 'Which key observations did you make about your pupils over the course of the sports programme?'
- 'In which way(s) did you perceive the students to have benefited from the activities most?'

This school visit was helpful in offering contextual research into the educational environment of the pupils. Additionally, a short survey was designed to seek retrospective reflection from the student ambassadors' experience of leading the sports activities at School A with the aim of gathering what, in their experience, could be improved when considering programme design and implementation.

4. Stakeholder Analysis

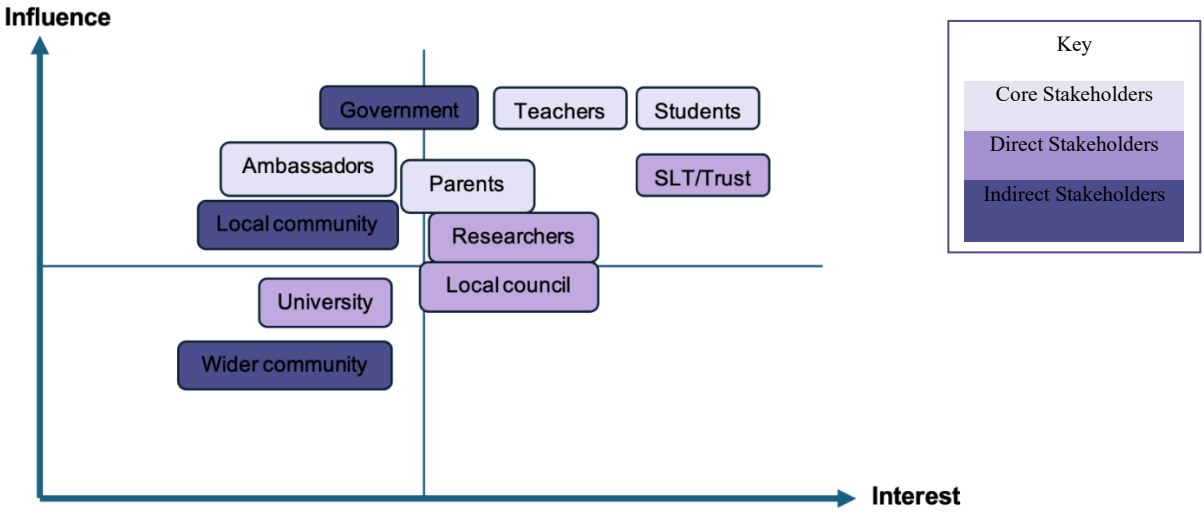

Figure 1: Relative influence and interest of different stakeholders in the project.

4.1. Core Stakeholders

As the key beneficiaries, students have a direct interest in deriving enjoyment from the sports activities and developing character skills. Teachers are likely to have a great interest in supporting pupil development. Parents can directly shape aspirations and attitudes towards enrichment, impacting participation and success. The ambassadors' administration of the programme and survey responses gives them the power to influence the success of the intervention.

4.2. Direct Stakeholders:

SLT are responsible for allocating resources to activities in schools, influencing baseline student experiences. Researchers are interested in using the data to analyse the relationships, if any, between sports enrichment and pupil attainment. Both the local council and Oxford University can find interest in the results obtained from the project.

4.3. Indirect Stakeholders:

Both the wider and local communities have a similar interest in benefitting from pupil development and improved wellbeing. The government (DfE) has a very high influence in shaping the educational framework employed by schools and managing school funding.

4.4. Risks & Ethical Considerations:

Students with SEND may also face barriers to participation and self-assessment (though a visual questionnaire was prepared to aid communication), which may undermine the results obtained from the study. An additional risk identified was strain on the school's resources, particularly the workforce responsible for attending and assisting with the sports activities. Finally, it is important to highlight the absence of a control group in the project; any positive relationships point to correlation rather than direct causation.

5. Results

The findings discussed are primarily focused on the data obtained from region 2 (comprised of eight schools, of which both baseline and endline data was received from seven schools), which is considerably larger in sample size than region 1 (comprised of two schools: A and B). With a particular focus on correlations, if any, between sports enrichment and the development of more disadvantaged pupils, attention is primarily given to assessing changes in pupil and teacher scores for subgroups of students disaggregated by EAL, pupil premium, and SEND status.

5.1. Pupil Characteristics

Figures 2 and 3 illustrate the breakdown of the background characteristics of the pupil participants in both pilots with 51 pupils (44 standard and 7 visual forms) self-reporting in region 1 and 350 (from 333 unique pupil codes) self-reporting in region 2. Due to the lack of availability of post-intervention responses from one of the schools in region 2, 285 pupil responses (from 279 unique pupil codes) comprised the endline data alongside 17 adapted visual forms. Both regions depict similar proportions of students when characterised by maths attainment, English attainment and SEND status. Differences are prominent in socioeconomic disadvantage and English as an additional language (EAL). A greater proportion of children from region 2 schools are classified as being ‘Disadvantaged’ (i.e., those with pupil premium status) than those not, whilst the opposite is true for region 1 overall. Region 2 schools also report a majority of students without EAL in contrast to region 1 and, in particular, School B. Therefore, any observed changes in pupil scoring when comparing regional outcomes may be sensitive to these demographic differences.

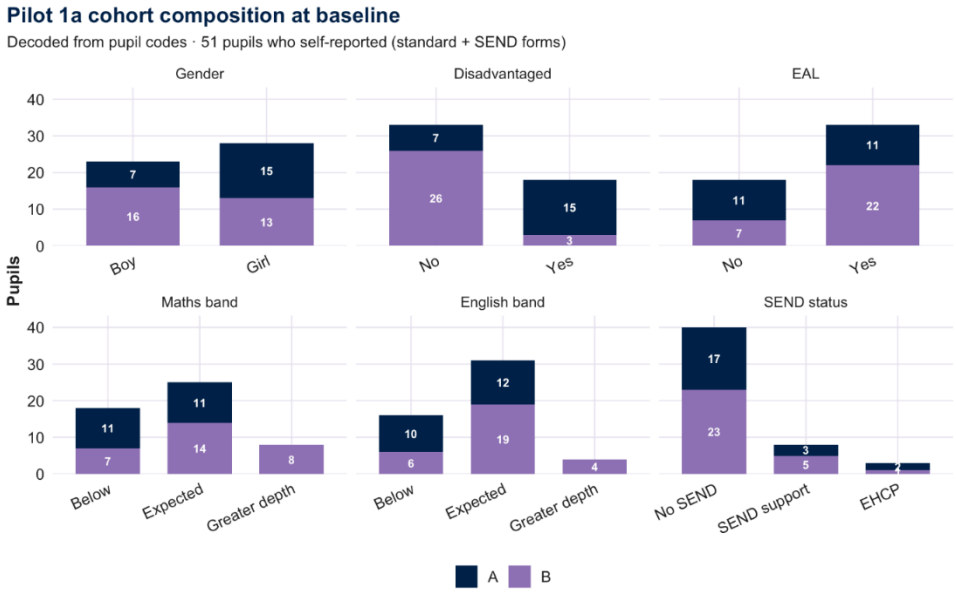

Figure 2: Breakdown of region 1 schools pupil backgrounds by pupil premium, EAL, gender, SEND, English attainment and Mathematics attainment, 44 standard responses and 7 visual SEND forms.

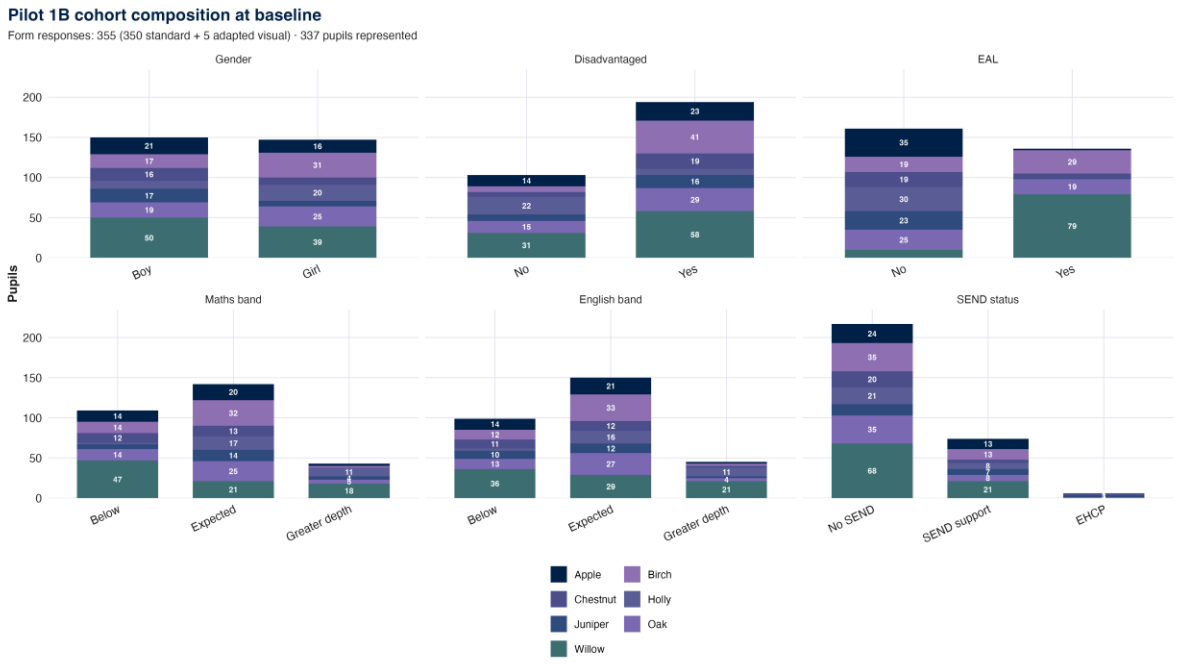

Figure 3: Breakdown of region 2 schools pupil backgrounds by pupil premium, EAL, gender, SEND, English attainment and Mathematics attainment (baseline data) – 350 responses, 333 pupil codes.

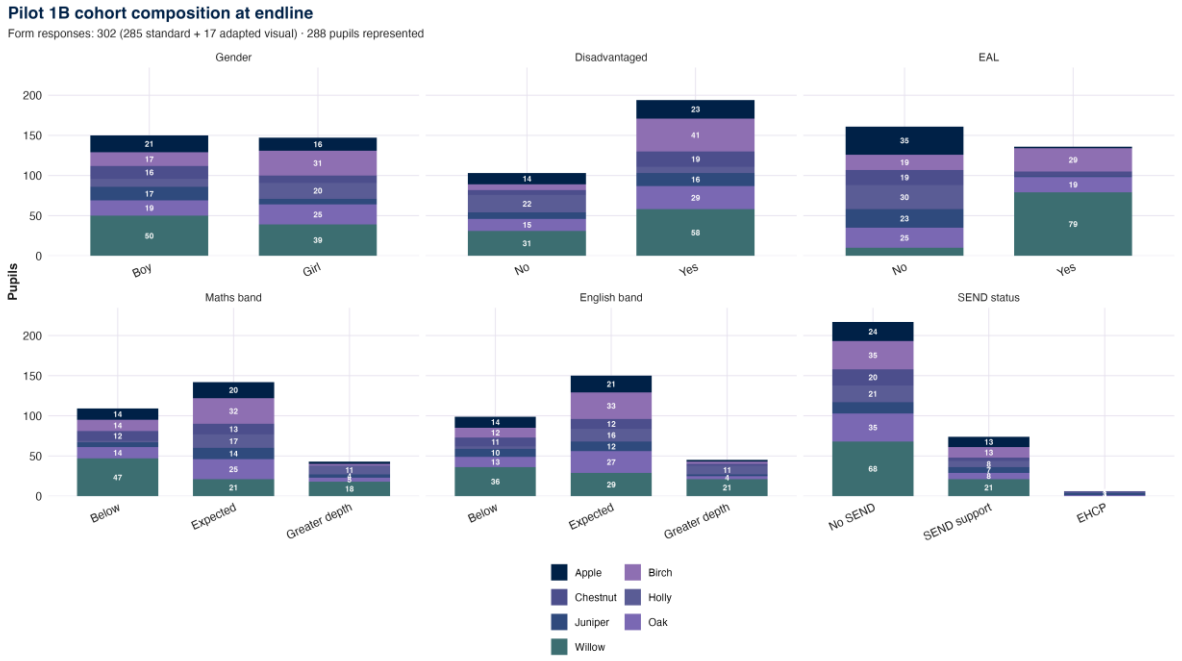

Figure 4: Breakdown of region 2 schools pupil backgrounds by pupil premium, EAL, gender, SEND, English attainment and Mathematics attainment (endline data).

5.2. Over-time Analysis of Pupil/Teacher Responses

In this section, attention is given to changes in baseline/endline responses from both pupils and teachers over time, noting where these may be out of agreement. Figures 5 and 6 showcase how far pupil self-reports align with teacher reports for baseline and endline outcomes respectively.

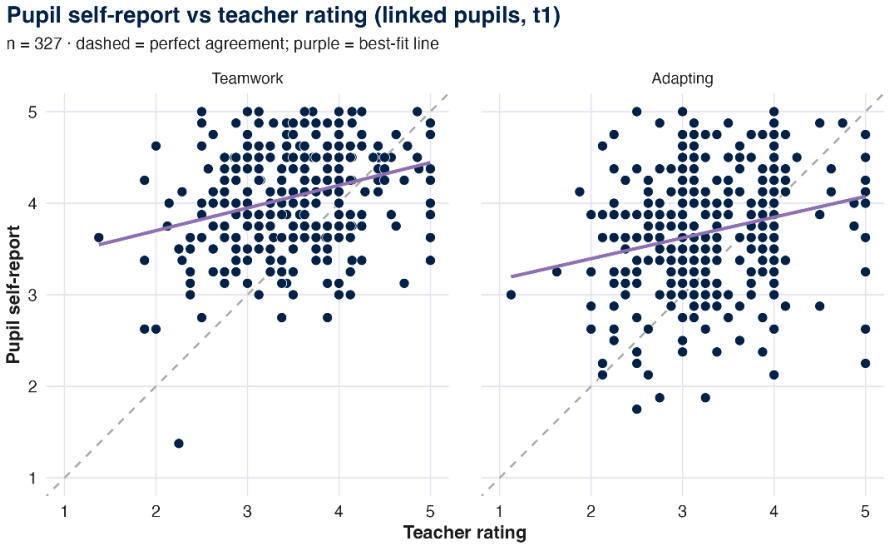

Figure 5: Pupil self-report against teacher rating for teamwork and adaptability using baseline responses.

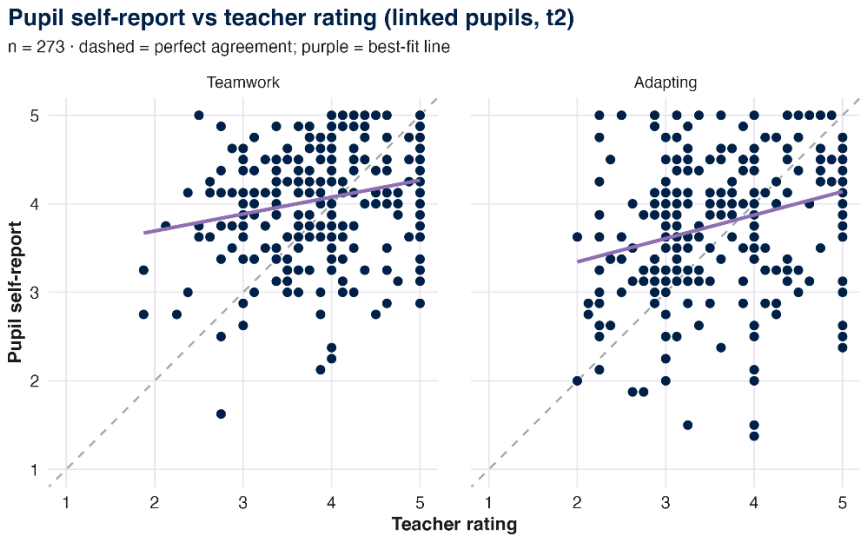

Figure 6: Pupil self-report against teacher rating for teamwork and adaptability using endline responses.

When comparing pupil self-assessed scores against teacher reports for each individual, it can be observed that, on average, a weak agreement is present for perceived teamwork and adaptability, particularly for lower scores. The general trend in the graphs in both figures indicates that pupils self-report higher for themselves in comparison to their teachers, with the gap between the purple and dashed lines diminishing as higher scores are approached for teamwork skills. Adaptability, on the other hand, displays a similar pattern for lower scores but with a wider disparity on the higher end of the scale, suggesting that pupils with higher teacher reported scores may underestimate themselves.

Figures 7, 8, and 9 have been produced to highlight mean changes in average teamwork and adapting scores amongst pupils and teachers for subgroups of students disaggregated by EAL, pupil premium or SEND status with the aim of discussing any trends and agreement between teacher and pupil responses observed.

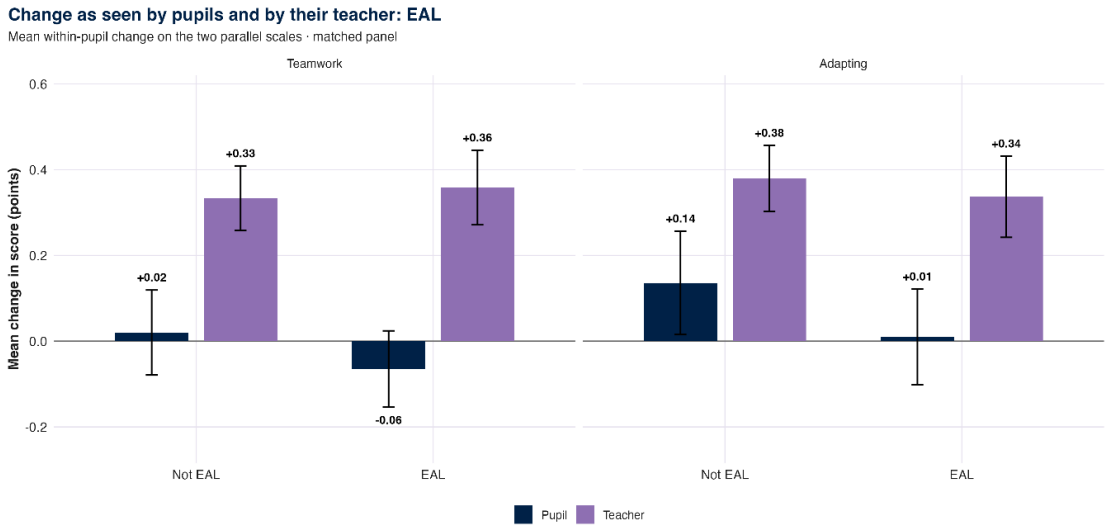

Figure 7: Average changes in teamwork and adaptability scores for students disaggregated by EAL status for both pupil and teacher reports.

It can be observed that teamwork scores increased on average for both pupil and teacher reports for students without EAL status, with a larger change in teacher scores. For those with EAL status, the average change in teamwork from teacher observations was similar, but a mean decrease was seen in pupils' self-reported scores.

The adapting score, on the other hand, depicted positive but dissimilar average changes for both EAL and non-EAL groups. Average changes in teacher reports were, again, more positive and very similar to those observed for teamwork skills.

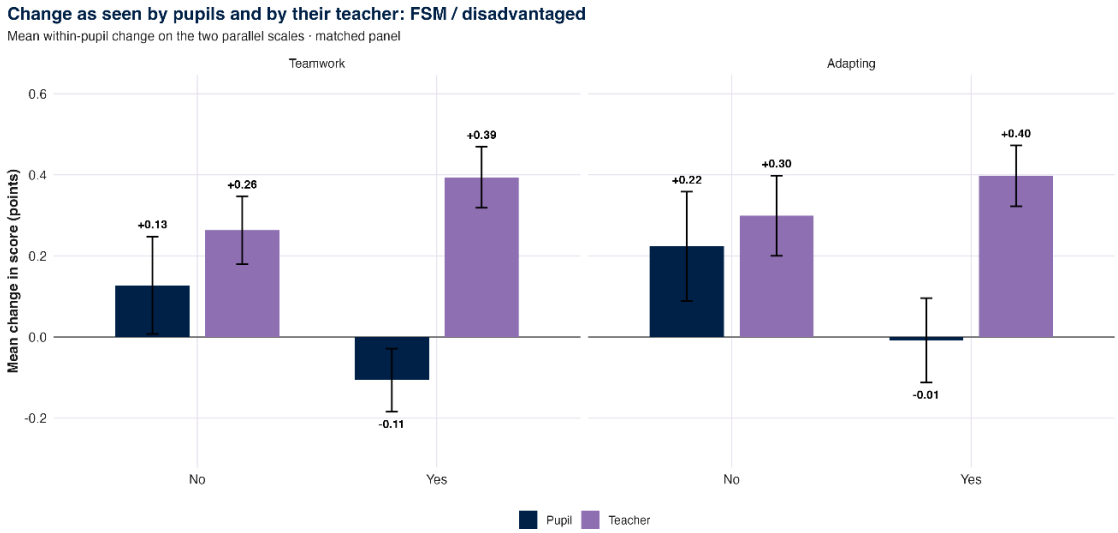

Figure 8: Average changes in teamwork and adaptability scores for students disaggregated by pupil premium status for both pupil and teacher reports.

When considering teamwork skills, an average increase in both pupil and teacher reports is seen for students without pupil premium status. For students with, a higher average increase is observed from teacher reports but an overall average decrease from the pupil self-assessments.

Adapting skills showcase a very similar trend; it is notable that for both teamwork and adapting, a large difference between average changes for students with and without pupil premium status can be seen. Additionally, teachers report a greater average increase for students with pupil premium status than those without.

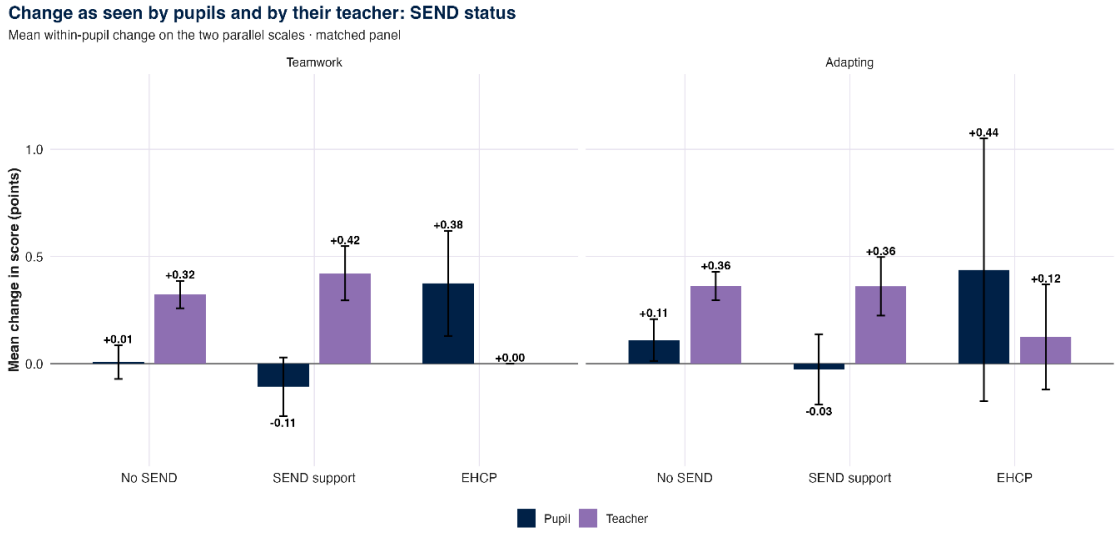

Figure 9: Average changes in teamwork and adaptability scores for students disaggregated by SEND status for both pupil and teacher reports.

Students without SEND status indicated a small improvement in teamwork but a more positive average change in adapting skills. Those with SEND status and without an EHCP (Education, Health and Care Plan) reported an average decrease in scores for both teamwork and adapting with teachers indicating notable improvement. Interestingly, SEND students with an EHCP report significant mean increases in both skills whilst teachers indicate a more modest improvement.

5.3. Multiple Linear Regression Analysis

Tables 1 and 2 below display the outcomes from the multiple linear regression carried out for both regions. For Region 1, no predictors have a statistically significant association

with the change in either teamwork or adapting skills. However, greater attention should be given to Region 2, owing to its larger sample size and statistical power.

Multiple linear regression analyses were conducted using matched pupil self-report data (Region 1, N = 39; Region 2, N = 249).

Predictor	Region 1 B (SE)	Region 1 t	Region 1 p	Region 1 95% CI	Region 2 B (SE)	Region 2 t	Region 2 p	Region 2 95% CI
Baseline teamwork	-0.11 (0.12)	-0.92	0.363	[-0.37, 0.14]	-0.27 (0.06)	-4.69	< .001	[-0.39, -0.16]
Disadvantaged	-0.01 (0.14)	-0.06	0.949	[-0.30, 0.28]	-0.21 (0.07)	-3.12	0.002	[-0.35, -0.08]
EAL	0.02 (0.13)	0.12	0.902	[-0.25, 0.28]	-0.05 (0.07)	-0.69	0.491	[-0.18, 0.09]
SEND support	-0.13 (0.17)	-0.77	0.448	[-0.48, 0.22]	-0.08 (0.08)	-1.06	0.292	[-0.23, 0.07]
EHCP	—	—	—	—	0.34 (0.37)	0.93	0.355	[-0.38, 1.06]

Model fit (Region 1): F (4, 34) = 0.32, p = .860, R^2 = 0.037, adjusted R^2 = -0.077 | Model fit (Region 2): F (5, 243) = 7.49, p = < .001, R^2 = 0.133, adjusted R^2 = 0.116

Table 1: Multiple linear regression predicting change in teamwork scores, B = unstandardised coefficient, SE = standard error.

Predictor	Region 1 B (SE)	Region 1 t	Region 1 p	Region 1 95% CI	Region 2 B (SE)	Region 2 t	Region 2 p	Region 2 95% CI
Baseline adapting	-0.23 (0.14)	-1.65	.109	[-0.51, 0.05]	-0.33 (0.06)	-5.62	< .001	[-0.44, -0.21]
Disadvantaged	-0.26 (0.21)	-1.25	.219	[-0.69, 0.16]	-0.22 (0.08)	-2.59	.010	[-0.38, -0.05]
EAL	0.16 (0.19)	0.84	.408	[-0.23, 0.54]	-0.10 (0.08)	-1.24	.218	[-0.26, 0.06]
SEND support	-0.35 (0.25)	-1.43	.163	[-0.86, 0.15]	-0.13 (0.09)	-1.40	.162	[-0.32, 0.05]
EHCP	—	—	—	—	0.14 (0.45)	0.31	.755	[-0.74, 1.02]

Model fit (Region 1): F (4, 34) = 1.48, p = .231, R^2 = 0.148, adjusted R^2 = 0.048 | Model fit (Region 2): F (5, 243) = 8.68, p = < .001, R^2 = 0.151, adjusted R^2 = 0.134

Table 2: Multiple linear regression predicting change in adapting scores, B = unstandardised coefficient, SE = standard error.

For teamwork, the regression model was statistically significant, **F** (5, 243) = 7.49, $p <$ 0.001, explaining 13.4% of the variance in teamwork change (R^2 = 0.134; adjusted R^2 = 0.116). Baseline teamwork score was a significant negative predictor of change (β = -0.274, $p < 0.001$), indicating that pupils with higher baseline scores tended to show smaller improvements over time. Disadvantaged status was also a significant predictor (β = -0.213, $p = 0.002$), suggesting that disadvantaged pupils demonstrated smaller gains in teamwork than their peers after

controlling for baseline score, EAL and SEND status. Neither EAL status nor SEND status significantly predicted teamwork change.

For adapting, the regression model was also statistically significant, **F** (5, 243) = 8.68, $p < 0.001$, explaining 15.2% of the variance in adapting change ($R^2 = 0.152$; adjusted $R^2 = 0.134$). Baseline adapting score was again a significant negative predictor ($\beta = -0.328$, $p < 0.001$), while disadvantaged status remained a significant negative predictor ($\beta = -0.215$, $p = 0.010$). As with teamwork, neither EAL nor SEND status significantly predicted adapting change.

5.4. Student Ambassador Survey Responses

At the time of writing this report, four responses have been received. Of these, there were two responses for each of the Region 1 schools involved in the pilot study. The ambassadors often indicated that the one hour that was allocated for the sport programme was insufficient time for the effects of the sports programme to be seen in the primary school students as well as create a long-term impact on the students' wellbeing and confidence. However, another ambassador also stated that some of the planned sessions did not fill the hour, and the children would become bored and lose interest.

Another theme shared in the ambassador responses was a lack of structure in how both the sports activities and the SkillsBuilder framework were joined together. An ambassador stated, "either we deliver sports completely, or we have to deliver less sport focused things and integrate more [of] the [SkillsBuilder] framework, it's too forced (near impossible) to *meaningfully* implement the framework, whilst also focusing on individual athletic ability". This was a shared sentiment with other ambassadors who also mentioned that there was an overcomplication in the sports activities that the children were made to do, and this may not have helped develop their teamwork skills.

Overall, all the ambassadors strongly agreed that the children enjoyed the programme and improved their self-management skills, the reason being the students' exposure to a variety of different activities which encouraged adaptability, as well as the encouragement of self-reflection during and after the sessions.

There was less of an agreement on whether the programme helped to develop the children's collaboration and teamwork skills: half of the ambassadors choosing that they neither agreed nor disagreed, whilst the other half did agree.

6. Discussion

6.1. Analysis of Results

The findings illustrated in the previous section highlight differences in pupils' self-reported teamwork and adapting scores across pupil groups. Pupil Premium status was significantly associated with smaller gains, while lower baseline scores were significantly associated with greater gains in both teamwork and adapting. EAL and SEND status were not significant predictors of change. These findings indicate that potential benefits from participation in the sports enrichment activities may not have been distributed across all pupil groups equally.

Pupil premium status can be understood as a proxy for disadvantaged socioeconomic backgrounds, which is used to contextualise the above findings. Students from lower-income households often report lower motivation and self-confidence that can hinder participation in social activities and longer-term development (Unity Research School, 2024). One possible explanation is that pupils facing socioeconomic disadvantage may encounter unequal access to prior sporting opportunities, equipment, transport, time, confidence-building experiences or continuity of participation. These factors were not measured and therefore remain possible explanations for further investigation rather than findings of this study.

The negative association between baseline score and change may partly reflect greater scope for improvement among pupils beginning with lower scores, ceiling effects associated with the five-point scale, and regression to the mean. Students with pupil premium status self-reported slightly lower average baseline scores for both teamwork and adapting than those without, as seen in figure 10, indicating that greater initial scope for improvement did not necessarily translate neatly into greater gains.

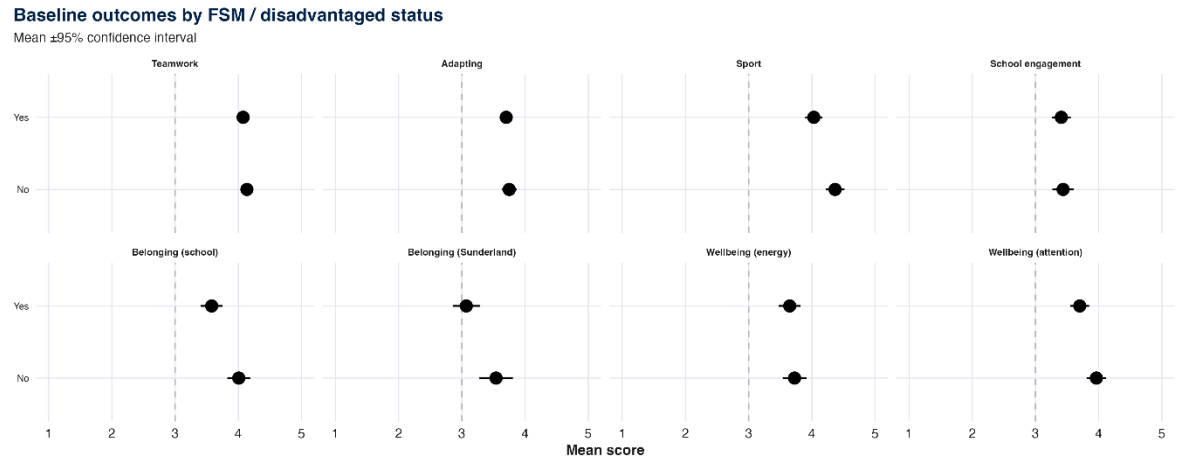

Figure 10: Average baseline scores for pupils disaggregated by pupil premium status.

Another point of interest from the results is the divergence between pupil and teacher reports with regard to average changes in teamwork and adapting. Not only did teachers observe and report an improvement for all pupils, the average improvement for students with pupil premium status was higher than those without – this is a stark contrast to the mean changes in pupil reports, which are more modest in comparison and also indicate statistically significant depreciation for more socioeconomically-disadvantaged pupils. A similar trend is observed for results pertaining to EAL or SEND status, suggesting teachers perceived students to have benefitted from the programme more than they themselves, particularly those with pupil premium status.

This may reflect observable improvements, although teacher reports are also susceptible to observer biases (Mahtani, Spencer, and Brassey, 2017). Differences may reflect the distinct observational positions of teachers and pupils, variation in how the constructs were interpreted, expectations about programme benefit, or limitations in the comparability of the two measures. Skills like teamwork can also be difficult to judge on an individual level; observing students as performing better as a team post-intervention may mask any collaborative development for each pupil and give the impression of overall improvement – this can be particularly relevant for larger school cohorts participating together under supervision of different staff members. Moreover, lesser improvement may be due to lower

self-confidence in children. Research has found that SEND individuals, for example ADHD, experience more peer rejection (Eccleston et al., 2019), which is associated with low self-esteem in ADHD individuals, with self-esteem significantly negatively correlated with ADHD symptomatology (Turner & Harty, 2025). All of the above reasons may contribute to the differences between teacher observations and students' self-perceptions.

These ideas may be further supported by the responses from the student ambassador survey from region 1 which indicated that "overcomplication" of the sports activities may have been conducive to loss of interest amongst students, potentially influencing pupil engagement and perceived benefit.

6.2. Limitations and Implications for Further Work

With the sports enrichment programme in region 2 being comprised of only three 60-minute sessions culminating with a tournament, its short length could have played a role in the trends observed: students with greater barriers to participation potentially struggling to immerse themselves into the activities and deriving benefits over the short period of time before comfort is developed. Additionally, a brief exposure to sports enrichment may have heightened awareness of perceived limitations before having the chance to begin contributing towards pupil development – this could support investigations pertaining to the effectiveness of curricular enrichment involving longer-term interventions with intermittent assessments.

The absence of a control group in this study also hinders us from identifying any causal relationships between participation in enrichment activities and the development of more disadvantaged students; any changes seen after the pre-post intervention study are susceptible to significant external factors, the most prominent being any influence on pupil development through concurrent in-class experiences. Future work may involve tracking effects of classroom learning alongside enrichment to put forward more substantiated arguments. Furthermore, the absence of endline data from one school reduced the matched analytical

sample and may have introduced attrition bias if excluded pupils or schools differed systematically from those retained.

Notably, our results and discussions assume that pupils and teachers have reported correctly and with sufficient understanding. Particularly in the case of the more disadvantaged students, there may exist difficulties in self-measuring against developmental indicators like teamwork and adapting – in schools and communities where access to curricular enrichment is limited, pupils may not have had enough exposure to such skills to reliably assess themselves in questionnaires.

It is important to acknowledge the varying manifestations of different forms of SEND, which may have caused differing influence on the SEND students' reception of the sports enrichment programme, in turn affecting their perceived teamwork and adapting skills. The Department for Education (2015) recognises four main areas of SEND; future work will benefit from investigating how students of these four main areas of SEND may respond differentially to sports enrichment.

Finally, indications of difficulty in marrying the aims of sports skills and more personal development resulting in an "overcomplication" (student ambassador survey respondent) may prompt further ideas into how programmes may be designed to hone skills like teamwork and adapting more effectively.

7. Conclusion

In conclusion, our findings highlighted significantly smaller gains in teamwork and adapting skills amongst students with Pupil Premium status, suggesting that outcomes may differ according to socioeconomic disadvantage, although the factors underlying this difference were not directly measured. Additionally, a noticeable divergence between pupil and teacher reports was seen; in particular, teachers generally reported a higher perceived improvement in teamwork and adapting skills, especially for students with Pupil Premium, SEND, or EAL status, than the pupils themselves. With potential biases present in teacher responses and difficulty assessing the reliability of pupil self-reporting, we recommend a means of assessing skills that involves greater behavioural descriptors, aids students in better understanding concepts of soft skills, and allows for more explanation-focused responses from teachers.

In light of our findings, it would be beneficial to explore how different extracurricular structures (e.g. one-to-one) differ in effectiveness from group-based learning, and whether these produce differences in skill development. Moreover, instructional format (e.g. peer-led, ambassador-led, teacher-led) could also be a prospective variable for investigating teamwork and leadership among children. There is also scope to measure the associations between teamwork and specific academic or language abilities, especially for EAL students (e.g. vocabulary gaps, pronunciation, grammar, spelling, and reading). Regarding SEND, future research may expand upon the four main areas of SEND and investigate possible disparate associations between sports extracurricular activities and outcomes across different SEND types.

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Appendices

a. Pupil Questionnaires

Non-Adapted Student Questionnaire: Baseline and Endline

Section B: “How true is each sentence for you?”

1. I work well with others in my group.
2. I behave in the way the activity needs.
3. I am ready to start when an activity begins.
4. I finish what I start.
5. I help others in my group when they need it.
6. I try my best, even when something is hard.
7. I join in and share my ideas.
8. I listen to what other people say.

Section C: “How true is each sentence for you?”

1. I can tell how I am feeling during activities.
2. I can tell how others are feeling in my group.
3. I stay calm when things don't go as planned.
4. When something doesn’t work, I try a different way.
5. I help others when they find something difficult.
6. I encourage others to keep trying.
7. I have ways to help myself feel calm, like taking a breath.
8. When something is hard, I try to find something good or useful in it.

Section D: “How true is each sentence for you?”

1. I enjoy doing sport or physical activities.
2. I want to keep doing sport or physical activities in the future.

Section E: “How true is each sentence for you?”

1. I look forward to coming to school.
2. I enjoy learning new things at school.

Section F: “How true is each sentence for you?”

1. I feel like I belong at my school.
2. When I think about Oxford, I feel like I belong here.

Section G: “How true is each sentence for you, thinking about the last week?”

1. Lately, I have felt full of energy.
2. How true is each sentence for you, thinking about the last week?
3. Lately, I have been able to pay attention at school.

Adapted SEND Visual Questionnaire: Baseline and Endline

Section 1:

1. Baseline Question: Do you have fun when you do running, jumping or throwing?
2. Endline Question: Did you have fun in the running, jumping and throwing sessions?

The students were asked to tap the face that shows how they feel.

The responses were 'Happy face', 'Okay face' and 'Sad face'.

The teacher asked them, 'Tap the face that shows how you feel.'

Section 2: "Which one do you like the most?"

The students were given a set of pictograms which showed a child running, jumping, throwing or a question-mark for 'Don't Know'.

The teacher asked them, 'When you do sport, what do you like best?'

Section 3: "When you do sport, what do you like best?"

The students were given a set of pictograms which showed a child on their own, with a friend, with a team or a question-mark for 'Don't Know'.

The teacher asked them, 'When you do sport, what do you like best?'

Section 4: "When something is new or hard, how do you feel?"

The students were asked to tap the face that shows how they feel.

The responses were 'Happy face', 'Okay face' and 'Sad face'.

The teacher asked them, 'Tap the face that shows how you feel.'

Section 5:

1. Baseline Question: Do you want to do running, jumping or throwing?
2. Endline Question: Do you want to do running, jumping or throwing again?

The students were given a set of pictograms which showed a 'thumbs-up, smiling face' representing Yes, 'neutral face' representing Maybe and a 'thumbs-down, sad face' representing a No.

b. Teacher Questionnaires

Teacher Parallel Questionnaire

Section B: “How true is each statement for this pupil?”

1. This pupil works well with others in their group.
2. This pupil behaves in the way the activity needs.
3. This pupil is ready to start when an activity begins.
4. This pupil finishes what they start.
5. This pupil helps others in their group when they need it.
6. This pupil tries their best, even when something is hard.
7. This pupil joins in and shares their ideas.
8. This pupil listens to what other people say.

Section C: “How true is each statement for this pupil?”

1. This pupil can tell how they are feeling during activities.
2. This pupil can tell how others are feeling in their group.
3. This pupil stays calm when things don't go as planned.
4. When something doesn't work, this pupil tries a different way.
5. This pupil helps others when they find something difficult.
6. This pupil encourages others to keep trying
7. This pupil has ways to help themselves feel calm.
8. When something is hard, this pupil tries to find something good or useful in it.

c. Student Ambassador Questionnaires

Student Ambassador Post-Pilot Survey

Question 1:

How strongly do you agree with the statements, based on what you saw during the programme?

1. The sports activity programme helped to develop the students' collaboration and teamwork skills
2. The sports activity programme helped to develop the students' self-management and adaptability skills
3. Overall, the students enjoyed the programme

Question 2:

If you agreed with this statement: 'The sports activity programme helped to develop the students' collaboration and teamwork skills', what do you think helped to develop those skills during this programme?

Question 3:

If you agreed with this statement: 'The sports activity programme helped to develop the students' self-management and adaptability skills', what do you think helped to develop those skills during this programme?

Question 4:

What primary school did you facilitate?

Question 5:

Which do you think could be improved with this programme?

Question 6:

How would you redesign the programme?

Question 7:

To the best of your knowledge, how were the individual sessions delivered in terms of structure, length and frequency?

Question 8:

What challenges or difficulties did you face during this programme? How do you think you could be better supported to deal with these challenges?

Question 9:

How did it feel to deliver these sessions to the students?