DIGITAL SCHOOLHOUSE together with NINTENDO SWITCH

# Junior Esports Tournament Pilot Evaluation Report.

## 2021

Shahneila Saeed

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# About Digital Schoolhouse.

Digital Schoolhouse together with Nintendo UK, uses play-based learning to engage the next generation of pupils and teachers with the Computing curriculum. Digital Schoolhouse is delivered by the UK games industry trade body Ukie and is backed by the video games industry and government. Sponsors include PlayStation®, SEGA, Ubisoft and Outright Games.

Each Schoolhouse is based in a school, college or university environment, and aims to work with a growing network of local primary and secondary teachers to deliver creative and cross-curricular computing lessons using play-based learning. Through this, it supports the Computing programme of study for the national curriculum in a way that leaves pupils and teachers feeling inspired about, and engaged with, computing and careers within the wider creative digital industries.

Underpinned by evidence-based research and combined with groundbreaking careers education, the programme successfully bridges the gap between academia and industry, to ensure pupils are aptly equipped for the future digital economy.

Read more about Digital Schoolhouse.

# Introduction.

Digital Schoolhouse first began to explore esports as a tool to improve educational impact and attainment in 2016. Its pilot saw 4 secondary schools and 460 students participating in the first official national schools-based esports tournament. Now, it's the largest tournament with over 1100 teams and 10,000 students participating from over 69 schools across the UK in 2020.

As the tournament grows and becomes more successful, the impact is clear. Teachers have reported improvements to student wellbeing, improved attendance to school as well as academic attainment. Students have been clear on the impact it has had on their attitudes as well, with 94% of students reporting an increased interest in computing and 88% more interested in career opportunities within the video games and esports industry[1].

With so much success at the senior level, our thoughts began to turn to our more junior learners. Can we introduce this immersive career education to our primary school pupils? Esports in primary schools, how would this work? What would a successful model look like? Would it have a similar impact on pupils or different to those experienced by the more senior students? All these questions and much more began to circulate in our minds.

Thoughts and plans around developing a junior esports tournament have been ruminating since 2018, when we first began to see a demand for it from our Schoolhouses. The pandemic delayed the initial pilot and forced us to reconsider our model and approach to one that works with school-based social distancing restrictions. As a result, the model implemented in this pilot is a significant evolution of what we originally had in mind.

This evaluation examines all aspects of our Junior Esports Tournament Pilot, from the resources developed and tournament logistics to pupil attitudes. The evaluation ends with several considerations for DSH to take forward when implementing our first national Junior Esports Tournament 2022.

[1] Esports: Engaging Education (2018): https://www.digitalschoolhouse.org.uk/esports

# Executive Summary of Key Findings.

## From the Teachers:

- 100% of teachers said that pupils were either 'very' or 'extremely' engaged with the resources.
- 82% of teachers felt that pupils were more engaged and excited by these activities than usual, when compared to their other lessons. No teacher reported that pupils were less excited than usual.
- 100% of teachers felt that the resources catered to the needs of most if not all their pupils, deeming the resources to be highly inclusive and accessible.
- 55% of teachers said that pupils achieved higher results in this work (18% said 'significantly higher' when compared to their levels of attainment across their usual activities. No teacher reported that pupil's attainment was less than usual.
    - Participation in esports in schools does not have a negative impact on pupils learning and attainment; in contrast it is in fact, the opposite.
- 100% of teachers reported that pupils were more motivated to learn computing because of the pilot; and of these, 55% of teachers reported that pupils were significantly more motivated.
- When asked about the interest levels in careers within the video games and esports sector because of participation in the tournament; 91% said that their pupils were now either 'very' or 'extremely' interested in career opportunities.
    - The tournament tripled the levels of interest in career opportunities in video games and esports (only 36% were extremely or very interested prior to the tournament).
- 91% of teachers reported that they would bring their pupils to a flagship physical event. The remaining 9% equates to a teacher (based in Northeast England) who was unsure and also flagged that they'd like events that were more local to them.

## From the Pupils:

- On average pupils rated their enjoyment of the tournament experience as 8 out of 10; with 69% of pupils rating their enjoyment as either 9 or 10 out of 10.
- 84% of pupils wanted to have more lessons in school like the esports tournament experience. The feedback was overwhelmingly positive with pupils picking out aspects such undertaking the job roles, shoutcasting and interacting with their friends along with the gameplay.
- Overwhelmingly, pupils associated the tournament with positive adjectives, such as "Fun" (81%), "Exciting" (72%), "Entertaining" (71%), "Cool" (68%). Additionally, there was also a highly significant association with the tournament as a learning experience. Of the skills-based responses; "Teamwork" (65%) was the highest and closely followed by "Skills" (60%) and "Success" (42%).
- 57% of pupils said they know a lot about more about career opportunities because of their participation in the tournament. This equates to a 38% increase in the number of pupils who felt like they knew 'a lot' about careers as compared to before.
- Overall, 93% of pupils feel like they now know at least a little bit about careers, compared to 69% before. That is a 25% increase and confirms that even for the younger aged participants the tournament helped to provide a great deal of knowledge about the career opportunities available.
- When asked about what type of game they would like to play in next year's tournament, racing games were the most popular choice (56%) for all pupils across the cohort, even when filtering by gender.

*"I didn't think I would like it and I thought it sounded really boring and it was a sports tournament, but I found out it was a team game and little bit of luck and then I found out it was Mario Kart 8 deluxe! I didn't know what that was, but I loved it and me and my team were the first to play on it."*

*Primary School Pupil*

# Evaluation Methodology.

The evaluation set out to gather a range of information from both the participating teachers as well as the pupils. This included:

- Pupils:
  - The Fun Factor
  - Academic Achievement
  - Positive impact on attitudes to computing
  - Positive impact on attitudes towards careers in computing
- Teachers:
  - The Fun Factor
  - Observed pupil progress
  - Method of implementation (model)
  - Challenges faced
  - Notable successes
  - Lessons learnt/recommendations for the National Tournament
  - Case studies of individual student impact

To collect this data several data collection methods were used to ensure we captured the full picture. These included the creation of a working group, data collection through written feedback and questionnaires.

## Working Group

Three meetings were held over the duration of the pilot with all the teachers involved. The first outlined the structure of the pilot and what was required as well as understanding any obstacles that the teachers foresaw. The second was used to gather interim feedback and data and understand the progress being made. The final meeting was used primarily as an evaluation tool to gather feedback from the work carried out.

## Written Feedback

A number of teachers sent through written feedback in the form of emails and attachments. This feedback included comments made by the teaching colleagues within their school, the pupils, and general observations.

## Questionnaires

Two questionnaires were created and distributed amongst the participants. The pupil questionnaire had fourteen questions and focused on their experience, attitudes towards

careers and computing education as well as understanding any recommendations for improvement. The teacher questionnaire had thirty questions that touched on areas including:

- Curriculum resources
- Impact on pupil attainment
- Impact on pupil attitudes
- Tournament delivery logistics

# Key Findings.

## Sample Demographics

Over 719 pupils participated in this pilot. Of this, we have received 291 responses to the pupil questionnaire, which gives us a 40% response rate from pupils. While we did not collect 'name of primary school' on the pupil questionnaires; we know from speaking to the teachers that the pupil responses received were equally spread from across 5 of the Schoolhouses named below.

7 Schoolhouses participated within the tournament:

| School | School Type | Location |
|---|---|---|
| **Gildredge House School** | All through (ages 4 – 19)<br>Free school<br>Mixed Comprehensive | Eastbourne |
| **Our Lady of Lourdes Catholic Nursery and Primary School** | Primary<br>Catholic denomination | Southport |
| **Prendergast Ladywell School** | All through (ages 4 – 16)<br>Mixed Comprehensive | Lewisham, London |
| **Royal Grammar School Newcastle** | Ages 7 – 18<br>Independent<br>Selective | Newcastle |
| **South Devon College** | FE College | Torbay |
| **St John Fisher Catholic Voluntary Academy** | Secondary<br>Mixed Comprehensive<br>Catholic Denomination | Dewsbury |
| **Wrenn School** | Secondary & Sixth Form<br>Mixed Comprehensive | Wellingborough |

11 teachers responded to the questionnaire. Schoolhouses such as Prendergast Ladywell and Royal Grammar School Newcastle had more than one teacher delivering the pilot, and at least two Schoolhouses ran the tournament in conjunction with their local primary schools; for these there is a response from each teacher.

### Pupil Demographics

Based on questionnaire responses, 54% of participants identified as boys and 46% as girls. Like the feedback questionnaire, the pilot was run with entire class groups. Consequently, the gender split is a reflection of the demographic makeup of the classes that responded to the questionnaire, rather than less girls opting to participate.

All schools ran the tournament with Year 6 pupils; two schools also ran the tournament with Year 7 and two schools ran it with Year 5.

- 73% of respondents aged 11
- 23% of respondents aged 10
- 100% aged 9 – 12

# From the Teachers

## Curriculum Resources

As part of the pilot all teachers were provided with a full six-week scheme of work that included: lesson plans, teacher guidance notes, main teaching presentation, pupil worksheets, assessment materials and additional assets where required. The scheme of work began with an introduction to the world of esports, and enabled pupils to organise and deliver their own classroom tournament. As part of the activities pupils organised fixtures, setup the hardware, developed marketing materials in addition to shoutcasting, playing the matches and spectating.

All teachers used the curriculum resources with 70% making minor tweaks to the materials. Feedback indicates that tweaks were small and simple changes to adapt to the learning needs of children; particularly those who may be less able in terms of literacy. Or to change format of the worksheets to work better with their school IT systems and distribution. These changes were easily made; and no teacher indicated that they found this challenging or burdensome to do. The tweaks made were no more so than they would have done for any other usable resource.

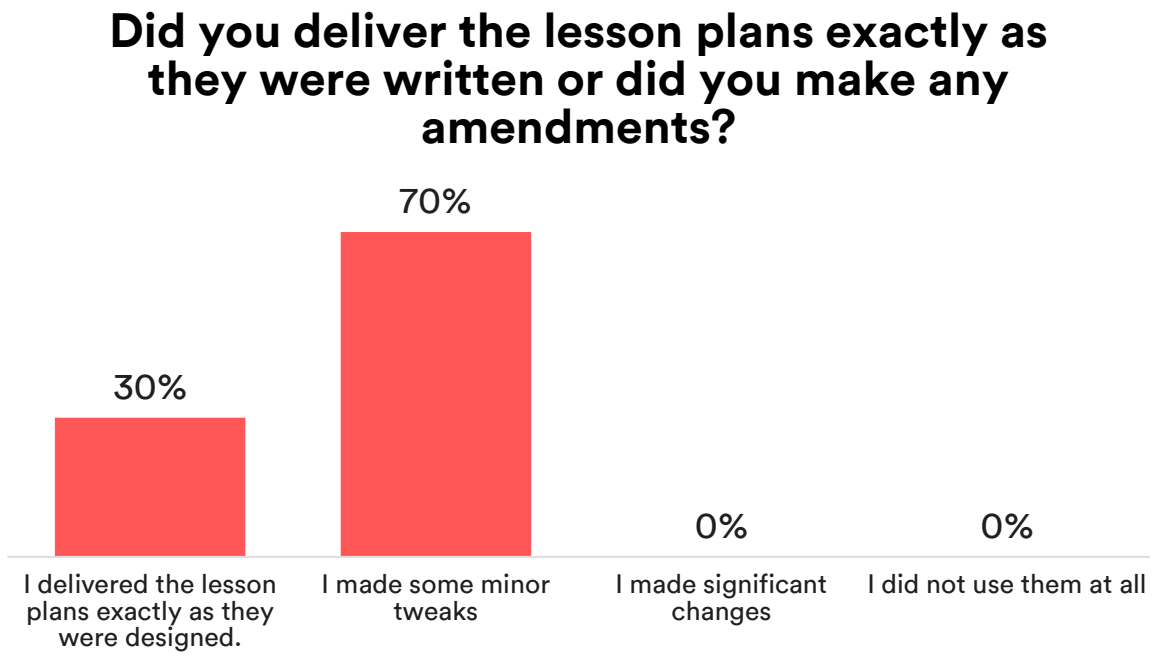


*Figure 1: Teacher modification of classroom materials*

When we asked teachers how engaged they thought pupils were with the resources, 100% said that pupils were either 'very' or 'extremely' engaged.

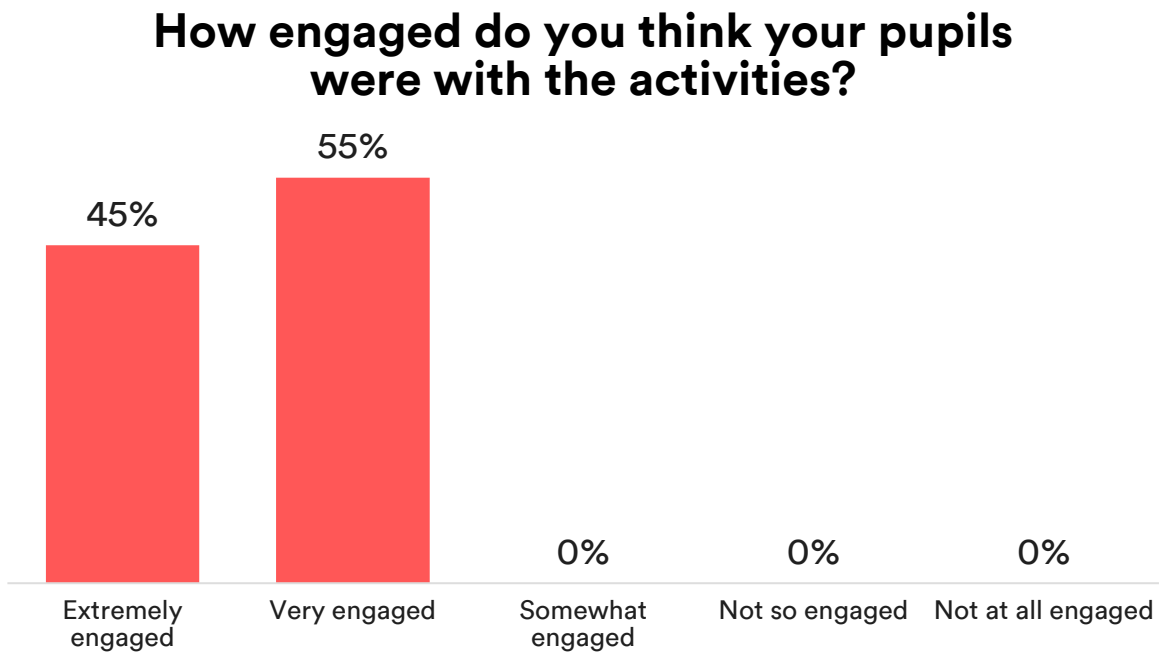


*Figure 2: Teacher perception of pupil engagement*

When then asked to compare against pupils' usual levels of engagement across other materials; 82% of teachers felt that pupils were more engaged and excited by these activities than usual, when compared to their other lessons. 100% of teachers answered average or higher - and no teacher felt that pupils were less engaged or excited than usual.

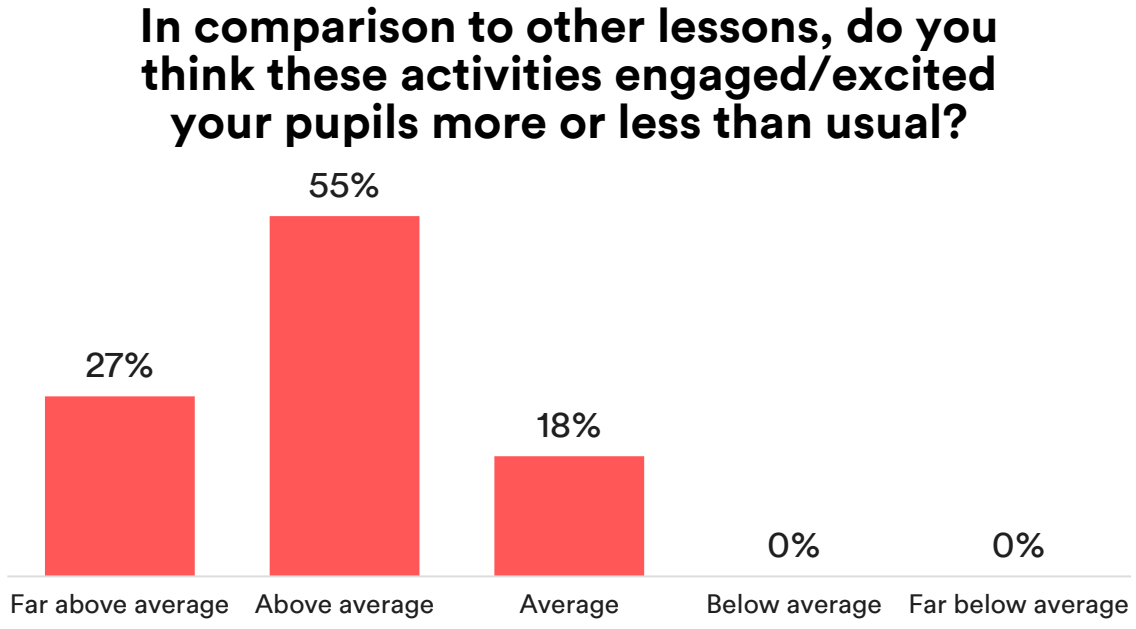


*Figure 3: Teacher perception of pupil engagement*

We asked teachers whether they noticed a difference between the reactions of boys and girls and how engaged they were with the activities. 45% of teachers found no difference and a further 45% said that boys were more engaged than girls. Only 9% of teachers reported girls being more excited than boys.

Teachers were asked about the accessibility and inclusivity of the resources.

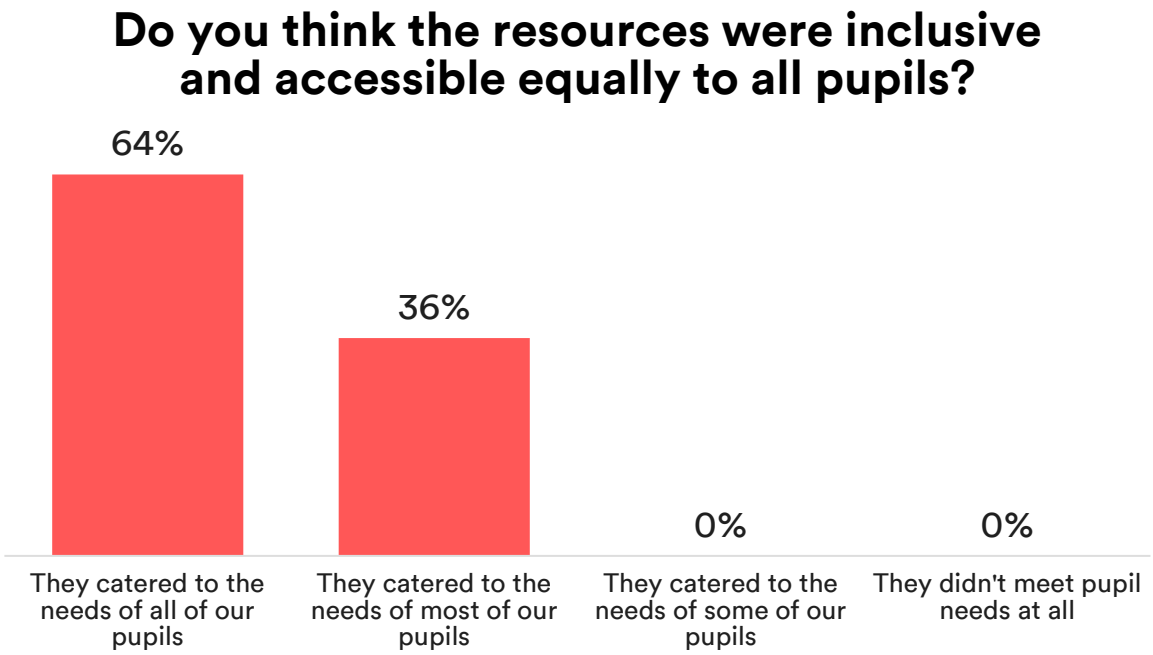


*Figure 4: Teacher's opinion of resource accessibility*

100% of teachers felt that the resources catered to the needs of most if not all their pupils. 64% felt that the resources were highly accessible and inclusive, catering to the needs of all their pupils. And importantly, no teacher felt that the resources did not meet the needs of some or all their pupils.

Overall, feedback on the resources was highly positive with no major improvements suggested. Race with Ryan as a brand is one that appeals to younger pupils in Key Stage 1, who were not participating in this pilot. Picking an alternative game with a more age-appropriate brand is something that was suggested by several teachers in the workshops as well as the questionnaire. There were some suggestions about including adapted materials for students of a lower ability, particularly for those with lower levels of literacy.

*"Really enjoyed using them and the children loved the top trumps and organising the console generations. Even I learnt something! They particularly enjoyed learning about each of the roles as I do not think they realised there were that many!"*

## Impact on Pupils Academic Achievement

We asked teachers if they noticed a difference in pupils' academic levels of attainment in the tournament as compared to their usual activities.

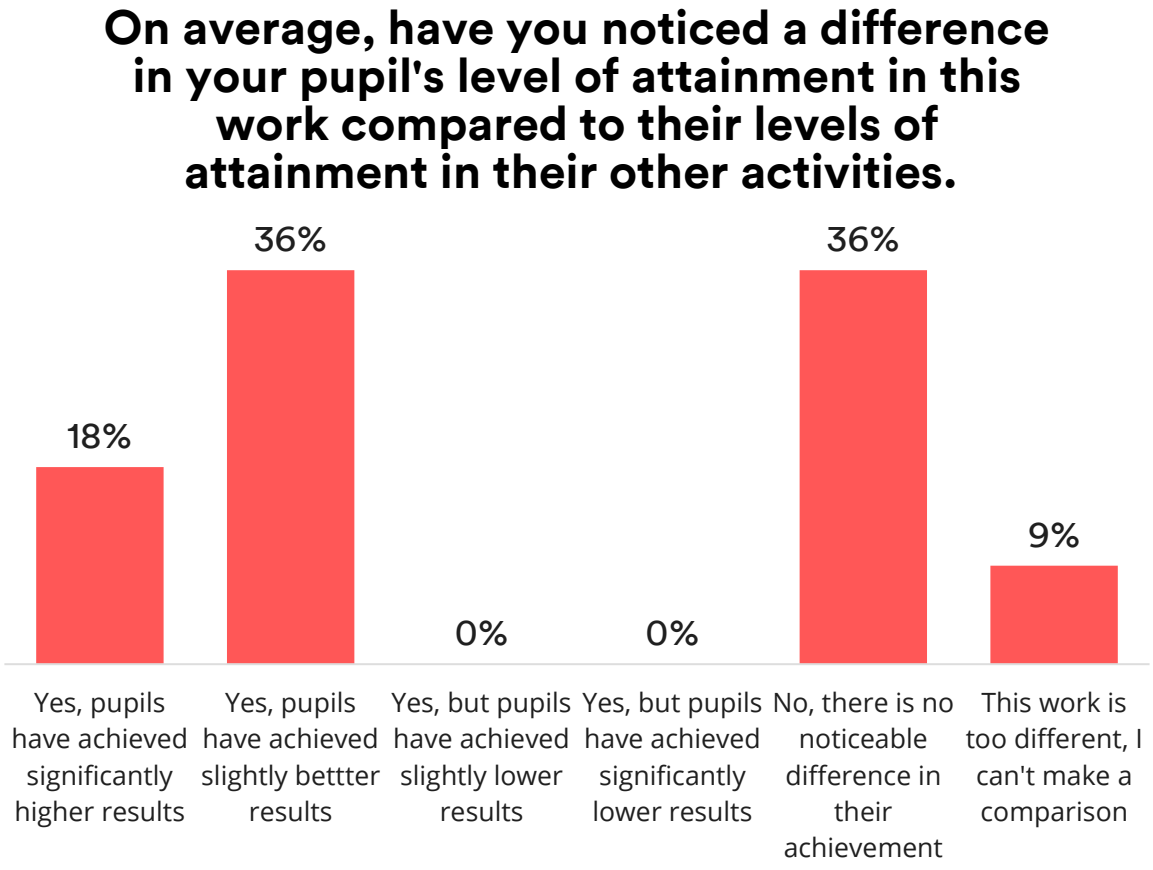


*Figure 5: Teacher's observation of impact on pupil attainment*

36% of teachers reported no notable difference in pupil achievement and 9% of teachers said the work is too different and a comparison could not be made. However, 55% of teachers said that pupils achieved higher results in this work (18% said 'significantly higher' when compared to their levels of attainment across their usual activities).

Significantly, no teacher reported their pupil's attainment was lower than usual.

We asked teachers if there may have been a variation in levels of attainment by gender and 63% of teachers said there was no difference in the academic achievement of boys and girls. 9% said that girls performed better than boys and 27% said that boys performed better than girls.

Overall, this is very positive and highly encouraging feedback as it confirms that participation in esports in schools does not have a negative impact on pupils learning and attainment. In contrast, it is in fact the opposite.

*"One student who has not stayed in for afternoon lessons for a couple of terms was able to stay in class and contribute fully to the lessons."*

## Impact on Pupil Attitudes: Computing

We asked teachers “Has the pilot made an impact on the motivation of your pupils to learn computing?”. 100% of teachers reported that pupils were more motivated to learn computing because of the pilot; and of these, 55% of teachers reported that pupils were significantly more motivated.

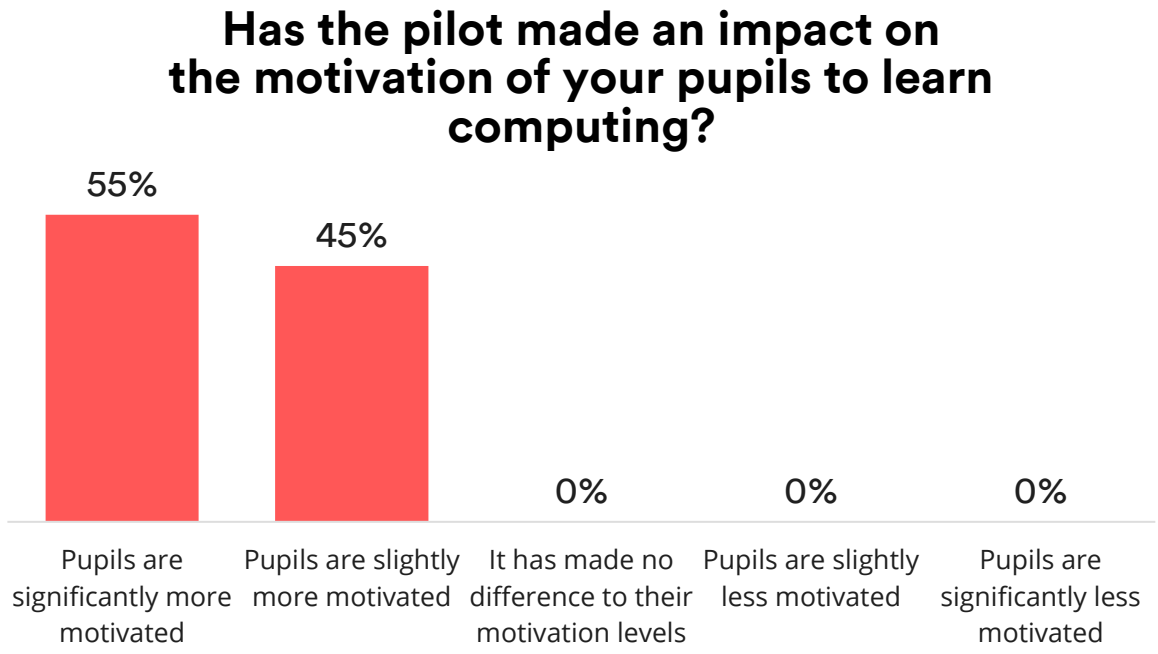


*Figure 6: Teacher's perception of impact on pupil motivation*

## Impact on Pupil Attitudes: Careers

We asked teachers about pupils' attitudes and interest in career opportunities within the video games and esports industry.

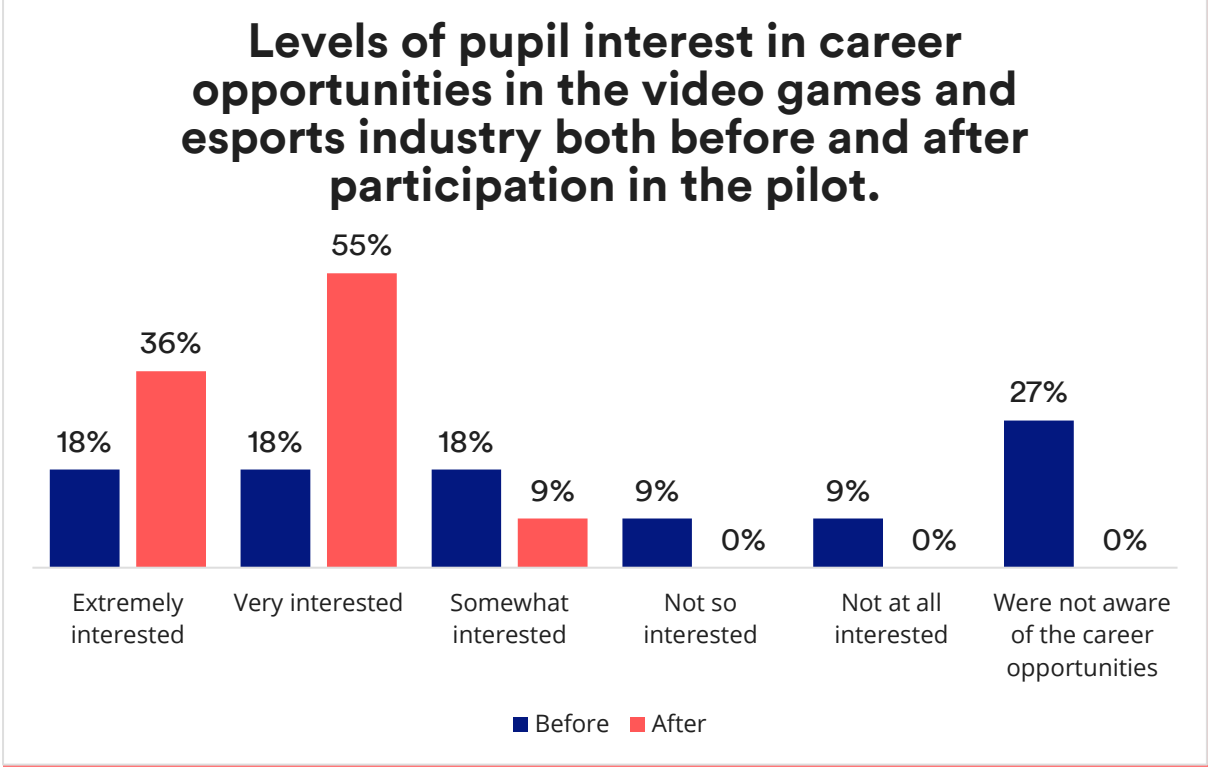


*Figure 7: Teacher's perception of pupils' post tournament attitudes towards careers*

45% of teachers reported that prior to participation in the pilot, pupils were either unaware of career opportunities within the video games and esports industry or not interested in them at all. 18% of teachers said that pupils were only somewhat interested, and 36% said that prior to the pilot pupils were either extremely or very interested.

Overall, while 45% of teachers said that there was at least some level of interest amongst pupils in career opportunities within the industry, responses were mixed.

When asked about the interest levels as a result of participation in the tournament; 91% said that their pupils were now either 'very' or 'extremely' interested in career opportunities. This indicates that the tournament tripled the levels of interest in career opportunities in video games and esports.

All teachers stated that pupils had at least some interest, which indicates that the tournament helped change the perceptions of all those pupils that previously were either unaware or not interested in careers in the sector.

*"Girls were more included; girls wanted the competition against themselves rather than the boys. It would have been great to have a minute mentor video from a real esports champ, to introduce the esports lesson kick off. This would have been great cultural capital"*

*"All of the class, including me, were not aware that there were all of the jobs within it. One of the children had mentioned that his parents felt it was a waste of time but that doing the activity had made him think that working in Esports would be a good career move = he would like to be a tournament admin."*

*"It has opened students' eyes to other possibilities - such as community manager roles which the girls particularly enjoyed working on"*

## Tournament Delivery

While the resources outlined a single approach to delivering the pilot; there was enough flexibility within the materials to enable the teachers to deliver things differently. Most, if not all teachers followed a very similar approach to the one captured in detail below by the Lead Teacher of Our Lady of Lourdes Catholic Primary and Nursery School.

- We completed the activities at the same time as playing the team games.
- Children were given a pack to complete and rotated through each of the roles in a round robin as suggested.
- We played 1v1 games and each team played one player from another team once.
- We created a simple scorecard to record the scores i.e. team 1 played one player from teams 2 – 7. Then team 2 played teams 3 – 7 etc.
- Teams were given a slot at playtime each week to practice the game.
- All the class voted to play Mario Kart and not the other two games.
- We have one team left to play then we will have a play off as two teams with the same score. One team has already gone through to the final.

Where a Schoolhouse worked with a local primary school; they described their approach as *"Resources sent into schools beforehand for school staff to use (after initial remote meeting). Lead Teacher attended school to deliver tournament, taking small numbers of pupils (8) at a time to complete over an afternoon."*

Because of COVID-19 restrictions, teachers were not able to deliver the resource with as many pupils as they would have liked. One teacher described combining the activity with a mixture of in class and lunchtime activity.

*"Due to Covid restrictions we were limited to run the competition by class in Year 6 - we have delivered Session 1 and 2 during their weekly Computing lessons; the rest of the sessions was delivered during the drop down afternoon. We were also able to run it in the Year 7 STEM club during the lunch."*

We asked teachers what they felt were the biggest challenges of delivering the tournament. Several issues came to light; most of which were effects of the COVID-19 pandemic. However, teachers also referred to the classroom management aspect of handling a class full of excited children. Children all undertaking different roles alongside matches taking place resulted in lots of excitement with high levels of classroom noise. The level of excitement and impact on classroom noise levels was also noted during the working group meetings; teachers talked about being 'told off' for having such a noisy classroom and that this peaked interest from other colleagues as a result. While dealing with the levels of excitement was a classroom management challenge, all teachers talked about this in a positive way. This highlights and reiterates that after the restrictions of the COVID-19 pandemic, activities such as these were exactly what the children needed.

*"Time constraints as it has been a difficult year but activities were easy to understand. The only thing with my class was keeping them on task independently whilst the others gamed as they wanted to watch. This also meant that shoutcasting could not be heard as all so excited!"*


*Figure 7: Word cloud summarising challenges faced by teachers during tournament delivery*

We asked teachers what they felt were the best elements of delivering the tournament. Teachers overwhelmingly talked about the levels of engagement by the pupils and the opportunity for the pupils to get an insight into a range of career opportunities they were previously unaware of.

*"Engagement and enthusiasm in the activities and the joy of playing games in school. Interest of the children in the job roles and the fact that some would consider a role within the industry now compared to before we began. It was fun!"*

Teachers were asked about what factors Digital Schoolhouse should consider when planning the national tournament and a number of things were mentioned. These include:

- Use of technology – provision of additional support about hardware and software setup
- Certification for pupils
- Add a lesson where pupils review the game
- Timings

All feedback has been taken on board. Current plans include the provision of Digital Schoolhouse and partner branded reward certificates for pupils, and we will seek support with the further provision of prizes. We are also reviewing our current resources to see where additional support around hardware can be provided. An additional lesson where pupils can review and select from a range of games to assess suitability will be part of the next release of curriculum resources.

When asked to rate how easy the tournament was to deliver (with 10 being "very easy"), on average teachers gave a rating of 8 out of 10.

When asked about their confidence, teachers initially rated their confidence as 6 out of 10 (where 10 was highly confident) which indicates some hesitation in setting up an activity so different from their usual activities. However, after their participation within the tournament their confidence level rose by 30% to an average of 9 out of 10.

*I had no idea about what esports was and when I saw the overview I was not sure how it would work. Having delivered it now, I realise that connecting devices and organising the activities is really quite easy. I had never used a Switch so it was great fun learning with the children. Some of the codes to download did not work which is some of the reason why only Year 6 played.*

When asked if there is anything further that Digital Schoolhouse can do to support them in their delivery of the tournament; 36% said 'yes', 36% said 'no' and 27% said 'unsure'. Comments focused on hardware; part of this is the impact of in school network connectivity that Digital Schoolhouse cannot provide any help with. Other comments focused on receiving a greater number of codes and devices so that more games could be played simultaneously.

> *"Esports minute mentor about the game, video the esports tournament final and live stream to YouTube for students to watch and reflect and see themselves, so they can see where they are heading. Behind the scenes of esports - get someone to vlog an experience or journey to getting into esports, any qualifications, behaviour, personality you should be."*

## Looking Ahead

We asked teachers if they would be willing to bring their pupils to physical events as part of a wider national tournament playoff (COVID-19 restrictions permitting). An overwhelming number of 91% of teachers agreed they would bring their children. The remaining 9% equates to one teacher (based in Northeast England) who responded as 'unsure' to this question; their subsequent answers stated the need to remain close to their school. While no further details were given it is envisaged that their reasons are purely for logistical purposes.

> *"The children would be thrilled to do this as it would enable them to meet other schools and gamers. It would make them feel like they are real esports players - making it a special and unique opportunity for them."*

As our participant schools were distributed across England; we asked if they would be willing to bring their pupils to London for a flagship event. Encouragingly, 64% agreed that they would and 36% said they would need an event more local to them. This gives strong indication that inviting the junior esports tournament participants to flagship events will be welcomed by teachers and a majority would also travel to London as they see it as a valuable opportunity.

> *"The children would be thrilled to do this as it would enable them to meet other schools and gamers. It would make them feel like they are real esports players - making it a special and unique opportunity for them."*

### Further Comments

*"Keep doing this awesome work the kids are really grateful!"*

*"I would like there to be a local event first, as taking Junior School pupils to London for a first event would result in pupils being too excitable and therefore it would be a more stressful experience for staff."*

*"Thanks so much...it has been awesome :-)"*

*"Our pupils absolutely loved it!"*

*"I would love to bring my gamers to London but if it could be more local that would be easier in terms of funding it? Thank you for inviting us to take part in such an exciting and memorable event. After such a difficult year, it will leave a lasting memory with our children and I am sure the year group winners will remember it for the rest of their lives!"*

## From the Pupils

### Pupil Attitudes: Experience

We know that undoubtedly pupils thoroughly enjoyed taking part in the tournament. On average they rated their enjoyment of the tournament experience as 8 out of 10; with 69% of pupils rating their enjoyment as either 9 or 10 out of 10.

When looking at attitudes across genders; there was generally no significant difference between the two. Girls were just as likely to enjoy the tournament as boys, with no significant differences found for ratings lower than 5. When analysing gender for the highest rating 67% of boys scored their enjoyment as 10 out of 10 as compared to 50% of girls. So, while boys were more likely to score their experience at the highest level, girls were just as likely as boys to see the tournament as an enjoyable experience.

84% of pupils wanted to have more lessons in schools like the esports tournament experience. The feedback was overwhelmingly positive with pupils picking out aspects such undertaking the job roles, shoutcasting and interacting with their friends along with the gameplay.

When comparing across genders there was no significant difference between the number of boys and girls that either did not want more lessons similar to the tournament experience or were unsure. However, when answering 'yes' the number of boys was significantly higher (89%) than girls (79%). When asked to elaborate on their response further - along with talking about the fun of playing games - girls appear to be more likely to mention elements of learning about job roles. For example, see quote below:

*I love when I got to play the game I also liked doing all the jobs it was really fun! My favourite job was production crew that was fun but I don't think I got to do host which I was really looking forward to. I really enjoyed it I wish I did it everyday at school!*

Pupils were given a list of 30 adjectives and asked to select the ones they would use to describe their experience of the tournament. The words were categorised into positive, negative or skills-based words.

| Positive Adjectives | | Negative Adjectives | | Skills Based Adjectives | |
|---|---|---|---|---|---|
| Fun | 81% | Difficult | 11% | Teamwork | 65% |
| Exciting | 72% | Anxious | 7% | Skills | 60% |
| Entertaining | 71% | Confusing | 6% | Success | 42% |
| Cool | 68% | Boring | 4% | Communication | 42% |
| Play | 60% | Useless | 4% | Achievement | 41% |
| Active | 45% | Embarrassing | 3% | Learning | 39% |
| Engaging | 42% | Horrible | 2% | Friend | 36% |
| New | 38% | Dreadful | 1% | Careers | 22% |
| Hilarious | 31% | | 0% | Jobs | 21% |
| Useful | 28% | | 0% | Problem Solving | 17% |
| Easy | 21% | | 0% | | 0% |
| Important | 17% | | 0% | | 0% |
| **Average** | **48%** | | **5%** | | **38%** |

*Figure 8: Pupil responses to adjectives they would use to describe the tournament*

The average number of responses for positive adjectives was significantly higher at 48% than negative terms at 5%.

There were 43% more positive associations than negative ones. 23% of students selected at least one negative term; of this cohort 73% of them were aged 11 (16% of the overall sample).

There was also a highly significant association of the tournament as a learning experience, with 38% skills-based responses; of which the highest was 'Teamwork' at 65%, closely followed by 'Skills' at 60%.

Out of the full sample set, a group of only 10 respondents appeared not to enjoy the tournament. Which equates to 3% of the sample responses overall.

Looking across genders, boys were more likely to select the word 'important' (24%) than girls (9%). No other significant differences within their responses were found. While these results may indicate that boys are more likely to see the importance behind esports than girls, they may in fact simply reflect the common trend of boys being more engaged with esports than girls.

No other significant differences between genders were found.


*Figure 9: Word cloud summarising pupils' responses to "What was the best thing about taking part in the tournament?"*

When asking pupils "What was the best thing about taking part in the tournament?" as an open-ended response; playing the games with their friends was by far the most common sentiment that pupils expressed. Being a part of something, the competitive nature of the tournament, and doing the job roles all were commented on by many children as aspects of the tournament that they thoroughly enjoyed.

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*"Getting to play against friends and communicating with each other"*

*"We get to have fun lessons"*

*"Having fun, something different, learning about my dream job."*

*"To see all the different jobs and what goes into the tournament"*

*"Learning new stuff and it was a bit different than normal."*

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Also rating quite high were sentiments expressed around 'learning' and 'job' and the skills developed around that. It is clear that pupils were able to see the educational value behind the tournament and everything they learnt from it whilst having fun playing games.

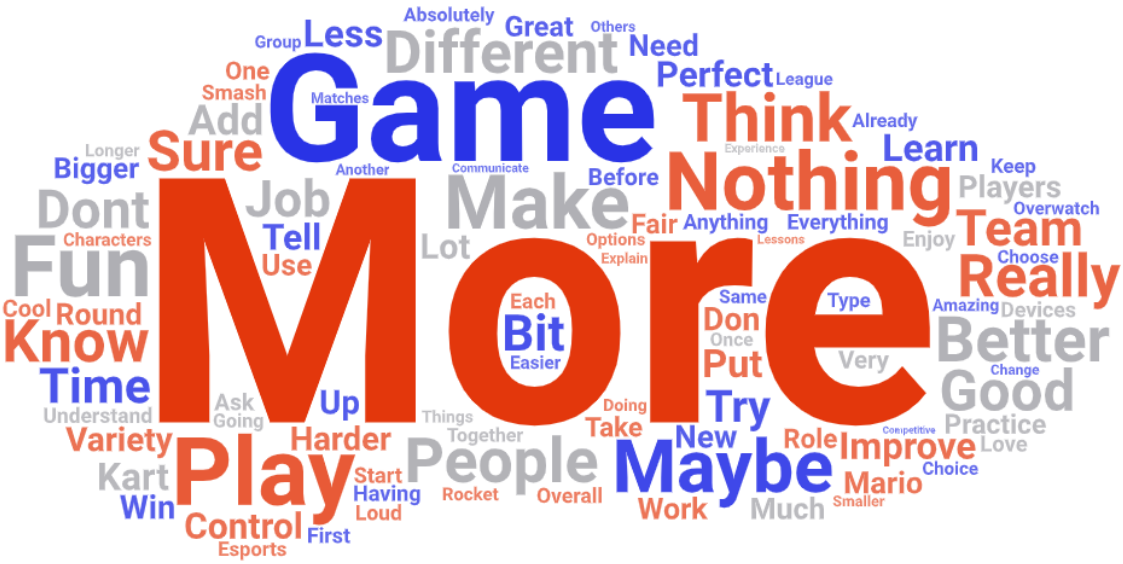


*Figure 10: Word cloud summarising pupils' suggestions for improvements*

We also asked pupils about how we could improve the tournament as an open-ended question. Feedback fit into two distinct themes:

1) No improvements necessary
2) Have more game options to play

> *"I don't really have anything to complain about as these lessons were exquisite for my learning and others!"*

It is interesting to note that in a large number of responses pupils used this question to praise the tournament commenting on how they enjoyed it and that there was nothing that needed changing. A small number of pupils commented on improving logistical aspects of their lessons. These were few in number and included comments such as *"Get shoutcaster microphones"* or *"You could improve the seating plans because once the matches started, we all mixed and matched to see the round and the players were crowded."*.

It is worth noting that these recommendations for improvement were centred around issues and themes that came under the practical delivery and implementation of the tournament in schools by the teachers; and as such not something that impacts the overall tournament structure designed by DSH. We will however, endeavour to pull the selection of suggestions together to share with teachers as considerations for them when implementing the resources in school.

## Pupil Attitudes: Careers Education

Pupils were asked about their attitudes towards career opportunities within the video games and esports industry. The questionnaire included both a reflective question asking pupils of both their knowledge and interest in career opportunities prior to participation within the tournament, as well as their subsequent attitudes after participation.

31% of pupils were not aware of the different types of jobs available in the video games and esports industry. 50% knew a little bit, and only 18% of pupils felt like they knew a lot about the different types of job roles available. Girls were significantly less aware of roles within

the industry prior to taking part in the tournament; 41% of girls said they did not know anything as compared to 14% of boys.

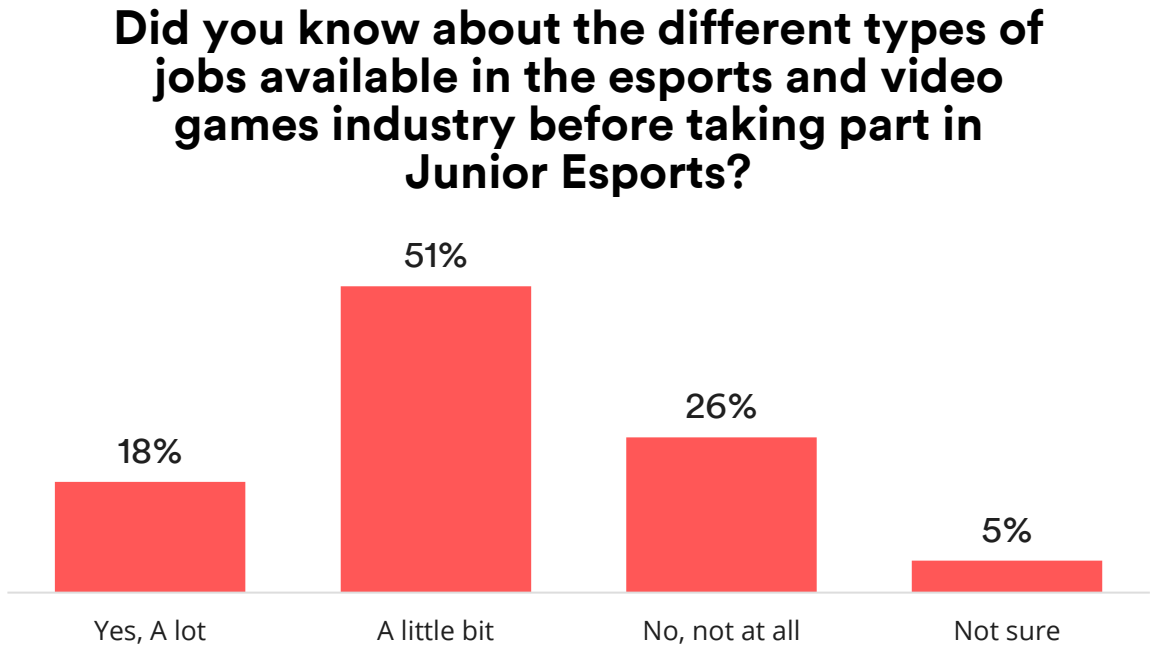


*Figure 11: Pupil's knowledge of career opportunities prior to participation*

When reflecting on their attitudes post tournament, pupils reported a significant increase in knowledge of career opportunities available. 57% of pupils said they know a lot about more about career opportunities as a result of their participation in the tournament. This resulted in a 38% increase in the number of pupils who felt like they knew 'a lot' about careers as compared to before.

Overall, 93% of pupils feel like they now know at least a little bit about careers, compared to 69% before. That is a 25% increase and confirms that even for the younger aged participants the tournament helped to provide a great deal of knowledge about the career opportunities available.

The tournament had a significant impact on improving awareness and knowledge of job opportunities within the sector, particularly amongst the girls. A significantly higher number of girls answered that they learnt at least 'a little bit' (42%) as compared to boys (30%). Overall, this saw a 40% increase in the number of girls who now feel they know at least a little bit about job opportunities (94%); compared to a 10% increase for boys (92%).

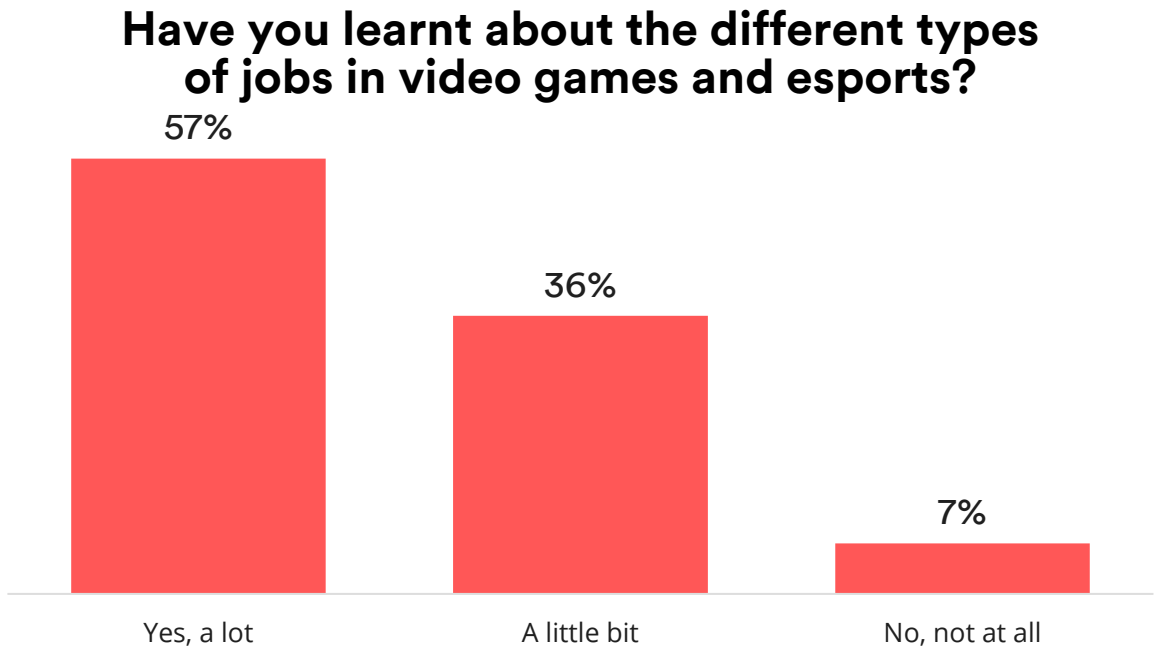


*Figure 12: How much pupils have learnt about career opportunities within the video games and esports sector*

When asking pupils about their interest in careers opportunities, students were asked to rate their interest level on a scale of 1 to 10; where 1 was “not interested at all” and 10 was “super duper interested, definitely want a job in video games/esports”. 78% scored their interest levels at 5 and above; and of these, 34% rated their interest levels at 9 or 10.

While girls may be more aware of the jobs available as a result of the tournament; only 55% of them indicated an interest in career opportunities as compared to 72% of boys. A further 20% of girls are yet undecided and unsure about their interest levels here; this compares with 10% of boys and is significantly higher. Additionally, there is no significant difference between boys and girls who are not interested in career opportunities overall (gave a rating lower than 5).

## Pupil Attitudes: Computing Education

Pupils were asked to rate out of 10 their enjoyment for computing lessons overall. Questions were broken down into a reflective question asking them about their interest prior to participation, and again about their attitude after the tournament had ended.

The scale began from 1 “I did not like computing at all” to 10 “It was my favourite lesson in school”. The average rating given by pupils was 7.2. Only 28% of pupils gave computing a full rating of 10 out of 10 and 38% overall gave it a rating of 9 or 10 out of 10.

When asked to rate how they felt about computing education after the tournament the average rating given by pupils was 8 out of 10. When looking at the detailed breakdown of scores and comparing these across questions it is clear to see a shift in pupils’ attitudes towards being more positively interested in computing lessons as a result of their participation in the tournament (8 percent rise in positive responses).

It is worth noting here that this may not be an accurate measure of examining a change to children’s interest in computing as pupils answered both the before and after questions during the same questionnaire and in the same sitting. It is likely the response for one question was influenced by the other and only marginal differences were therefore seen.

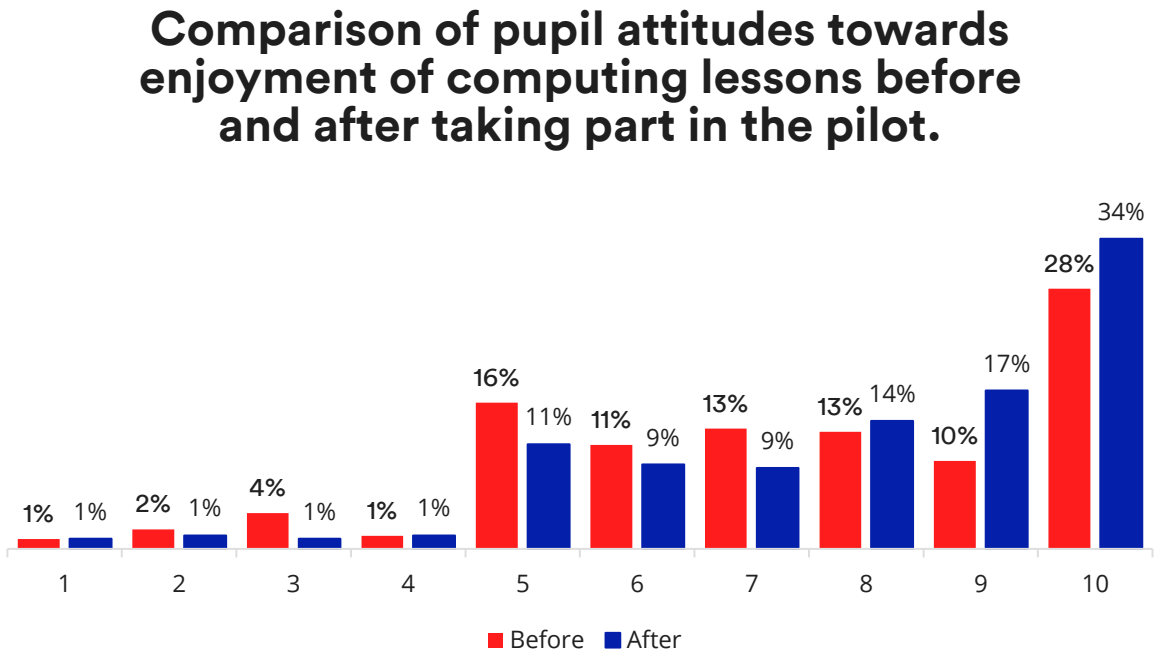


*Figure 13: Comparison of pupil attitudes towards enjoying computing lessons*

When breaking down by gender the tournament does not seem to have made a significant difference on the attitudes of girls; there is a 4% increase in their interest in computing lessons after taking part in the tournament.

However, the tournament appears to have had a significant impact on the attitude of boys towards computing lessons, 10% more boys are interested in computing after taking part; with the number of boys rating computing as less than 5 going down by 5%. It is worth noting that significantly more girls (16%) than boys (8%) rated computing lessons as ‘5’ "I don't mind it".

### What type of games would you like to see in next year's tournament?

Pupils were asked about what type of game they would like to play if the tournament were repeated. They were given a choice between racing games, sports games, fighting games, strategy/puzzle games, online card games, and other.

Racing games were the most popular choice (56%) for all pupils across the cohort, even when filtering by gender.

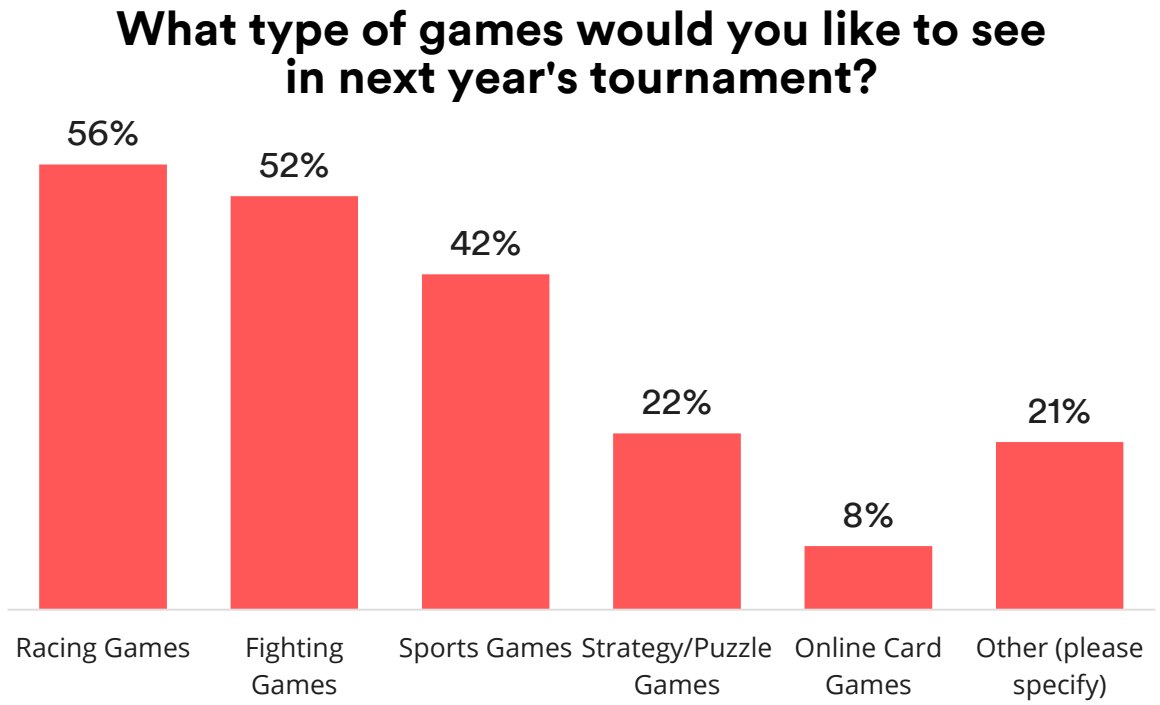


*Figure 14: Types of games pupils would like to see in next year's tournament*

Fighting games came in second at 52% and sports games were the third option at 42%.

When exploring the responses under 'Other' (21%), responses were largely suggesting game environments such as Roblox and Minecraft. A small number of suggested games that would come under one of the top three categories, and a minority suggested games that exceed the legal PEGI age rating for this age group.

When analysing by gender, girls marginally preferred sports games (40%) over fighting games (37%). Interesting to note also, that significantly more boys (65%) wanted to see fighting games being included as compared to girls (38%). Additionally, significantly more girls (32%) wanted to see a strategy or puzzle game being included next year as compared to boys (16%).

*Is there anything else you want to tell us about your experience with Junior Esports?*

This was the final question in the questionnaire, it was an open-ended comment and pupils were free to say what they wished.

The word cloud below summarises the key themes from the comments.


*Figure 15: Word cloud summarising pupils' additional comments*

80% of the comments were strongly positive; with a further 14% of comments being more neutral. Of the 6% of more negative comments; feedback was largely centred around classroom management related issues as well as ensuring all games appeal to the age group. Mario Kart 8 Deluxe was a big hit with the children overall however Race with Ryan as a brand generally appeals largely to children younger than age 7; as the tournament consisted of children aged between 9 – 12 engaging with that title did not appeal to them.

The following are a selection of quotes from participating pupils:

*"It was one of the most fun things I have ever done in school, and I would definitely suggest other schools to do it."*

*"It was best computing topic ever"*

*"With this learning experience I have learnt a lot more about gaming and my uncle works for a company called Rockstar and I've always been interested in this specific topic and this has made me know a lot more about this experiment and how important it can actually be!"*

*Junior esports has been the most fun topic in my whole childhood yet!*

*It was a fun experience that everyone appeared to enjoy with or without the competitive part of the games. It also teaches us that gaming is a job rather than a hobby and is for everyone no matter how skilled to enjoy.*

## Pupil Versus Teacher Comparison

### Pupil Engagement

Both pupils and teachers rated pupil engagement (enjoyment) very highly here. 100% of teachers said pupils were either very or extremely engaged; this is in line with the average pupil response of 8.6 out of 10 when they were asked to rate their enjoyment of the tournament. Additionally, this is further supported by 85% of pupils saying they would like to have more lessons like this at school; and 82% of teachers saying that pupils' levels of engagement were above average when compared with their usual lessons.

### Pupil Attitudes to Computing

It is interesting to note that while analysis of pupil responses indicated that the level of increased interest in computing because of the tournament was marginal; teachers perceived a greater impact here. 55% of teachers said pupils were significantly more engaged with computing and 45% stated that pupils were slightly more engaged (100% more engaged overall).

It is worth noting that the questionnaire for pupils was given to them very shortly after the completion of the pilot and so their enjoyment rating for computing lessons (prior to participation) as a reflective measure may have been overinflated and therefore resulted in the only marginal increase.

### Pupil Attitudes to Career Opportunities

78% of pupils indicated some level of interest in career opportunities within the video games and esports industry. In line with this 91% of teachers said that pupils were either 'very' or 'extremely' interested (remaining 9% were only somewhat interested). While response types were different for the pupil and teacher questionnaires and so not directly comparable; these results do indicate a strong positive correlation.

# Recommendations for future implementation

1. Teachers should carefully consider how classroom logistics are managed, taking into account:
    a. the multiple roles that different children will be participating in at any one time
    b. classroom noise levels
    c. visibility of gameplay on the screen for the entire class
2. Overall, the most popular game type for children were racing games. These were most closely followed by fighting games and subsequently sports games (although, girls marginally preferred sports games over fighting games).
3. An early lesson in the resources should be focused on children reviewing a set of games to make a collective decision about which one they will choose for their tournament.
    a. *Note: this lesson has already been developed and is part of the materials publicly released in September 2021. The lesson enables pupils to develop critical thinking, comprehension, literacy and numeracy skills.*
4. Attendance to DSH organised external physical events should be optional. There is a strong preference from teachers to attend physical events as part of their tournament experience, but many of them wished the events to be local to their school.
5. Age appropriateness of the game brand should be a key factor for consideration by DSH when selecting tournament games. For example, pupils aged 9 - 11 will not engage with a title they see as being aimed primarily at 5 – 7 year olds.
6. Use of hardware in the classrooms – a set of detailed teacher support notes to accompany the activities already set in place.

# Conclusion

It has become clear that esports has a positive benefit when used as an educational tool in the classroom. This evaluation found no drawbacks to implementing the esports tournament in Key Stage 2 classes. What has become evident is that delivering a scheme of work centred around an esports tournament is a unique approach to teaching not just Computing but also English Literacy, Mathematics, Design and Technology and PSHE. It is this very uniqueness that makes it so engaging and so beneficial to children in school.

One of the key issues around attracting a diverse range of students into career pathways within the video games and esports sector is providing visibility and raising awareness of the opportunities. Nurturing students' initial levels of interest and supporting them with accessible career pathways then becomes the next step. Opportunities such as the esports tournament delivers careers education in a way that is appropriate, understandable and engaging for young pupils that may well prove to be the first step in their journey.

Careers education has typically been delivered at secondary school and above, and yet primary school teachers tell us that insight into career opportunities is just as valuable for their pupils. Children at primary school age are discovering the variety of job roles that they can pursue; and many may already be deciding what paths they may or may not follow. That is why it is so important to increase the visibility of careers opportunities within our sector to children in primary schools. Children cannot aspire to careers they do not know exist; our esports tournament raises awareness of such opportunities and enables children to try out first-hand what these jobs entail.

But it isn't just about careers education. The evaluation found that there is no doubt this unique experience helped to motivate and engage children with their lessons more so than they usually would be. In doing so, for many it increased their levels of achievement and helped them enjoy computing as a subject more than they previously did. More importantly, there is clear evidence that it did so equally for all children, regardless of their

gender or any other diversity category. Girls were just as engaged as boys (in some cases more so), and all children regardless of their learning needs were able to engage just as well with the materials and make just as much academic progress. Video games are a unique platform that excite and engage a broad range of children, and this evaluation continues to provide yet more evidence of its effectiveness within the classroom.

It is clear that lockdown restrictions during the pandemic have impacted children's educational provision. While it is of course imperative that all pupils are given the opportunity to catch up on lost learning, it is also essential for children to have the opportunity to reconnect with each other. It is not desirable for children to spend such extended periods of time in social isolation, and that is exactly what they have had to deal with during the pandemic. Catching up on the development of their social skills is just as important as catching up on the learning of core subjects. It is these very social skills that they will need to succeed when working with their peers upon entering the workforce.

Esports tournaments such as the ones delivered by Digital Schoolhouse can play a vital role in education. The curriculum-mapped resources enable the teaching of core subjects such as computing, english and maths as well social skills. They are a tool that uniquely brings together rigorous academia, alongside the development of soft skills, critical and creative thinking as well as sparking an interest for lifelong learning.