

## Teacher survey results

### Demographics

About three-quarters (73 per cent) of respondents to the surveys are female (27 per cent male). As shown in Tables A1–A4:

- in total, 61 per cent of teachers are secondary, 31 per cent primary
- most (42 per cent) teach in maintained schools, with 30 per cent in academies
- the majority (36 per cent) have between 11 and 20 years' teaching experience, and 30 per cent have more than 20 years' experience
- most (34 per cent) are in the 45–54 age range, with 23 per cent aged 35–44. The most common subject specialisms are English (14 per cent), biology (13 per cent) and maths (11 per cent).

**Table A1.** Age of respondents

Please select your age group (1124 respondents)	
	Percentage of responses ( <i>n</i> )
18–24	1% (11)
25–34	21% (240)
35–44	23% (264)
45–54	34% (385)
55–64	19% (208)
65–74	1% (6)
75+	0% (1)
Rather not say	1% (9)

**Table A2.** Years of teaching experience

How many years of teaching experience do you have? (1123 respondents)	
	Percentage of responses ( <i>n</i> )
Less than one year	1% (16)
1–2 years	3% (33)
3–5 years	10% (112)
6–10 years	21% (231)
11–20 years	36% (399)
More than 20 years	30% (332)

**Table A3.** Educational settings of respondents

What type of educational setting do you work in? (1107 respondents)	
	Percentage of responses ( <i>n</i> )
FE College	2% (17)
Academy	30% (327)
Maintained School	42% (467)
Free School	1% (13)
Independent School	11% (120)
Special School	3% (35)
Voluntary-aided	7% (77)
Other	5% (51)

**Table A4.** Main subjects taught by respondents

<b>What is the main subject that you teach? (1083 respondents)</b>	
	Percentage of responses ( <i>n</i> )
Art and design	2% (21)
Citizenship	0% (5)
Design and technology	3% (30)
Drama	1% (9)
English	14% (153)
Geography	4% (41)
History	3% (37)
ICT	5% (52)
Maths	11% (119)
MFL	6% (67)
Music	2% (20)
PE	1% (15)
PSHE	1% (13)
Psychology	4% (41)
Science – biology	13% (146)
Science – chemistry	7% (76)
Science – physics	6% (68)
Science – general	4% (43)
RE	2% (19)
No subject specialism	5% (58)
Not applicable	5% (50)

*Knowledge of and interest in neuroscience*

The surveys asked whether respondents had looked up any information on the brain in the past four weeks, and 54 per cent had. Of those, 98 per cent gave specific examples of what they had looked up: 71 per cent of respondents had looked up information on neuroscience that was not related to learning, and 29 per cent looked at educational aspects of neuroscience only, such as resources for students.

When asked how much they know about neuroscience, 60 per cent stated just a little, 22 per cent a fair amount, 15 per cent had heard of it but knew nothing about it and 3 per cent considered they knew a great deal, as shown in Table A5. Tables A6 and A7 provide some more information on teachers' interests.

**Table A5.** Knowledge of neuroscience

<b>In your opinion, how much would you say that you know about neuroscience (the science of how the brain works)? (1149 respondents)</b>	
	Percentage of all responses ( <i>n</i> )
A great deal	3% (30)
A fair amount	22% (254)
Just a little	60% (694)
Heard of, know nothing about	15% (167)
Never heard of	0% (4)

**Table A6.** Interest in how the brain works

<b>How interested are you in how the brain works? (1133 respondents)</b>	
	Percentage of all responses ( <i>n</i> )
Very interested	37% (420)
Fairly interested	45% (507)
Neither	14% (160)
Not very interested	4% (41)
Not at all interested	0% (5)

**Table A7.** Interest in mental health issues

<b>How interested are you in mental health issues? (292 respondents, Wellcome Trust survey only)</b>	
	Percentage of all responses ( <i>n</i> )
Very interested	43% (125)
Fairly interested	48% (140)
Neither	6% (17)
Not very interested	3% (9)
Not at all interested	0% (1)

*Application of neuroscience to education*

The Wellcome Trust survey included a free-response question asking about specific activities that teachers use based on their understanding of neuroscience (see Table A8 and discussion in the main report).

**Table A8.** Specific activities or techniques used

<b>Please tell us about any specific activities or techniques that you use, if any, because you think they will improve academic performance (based on your understanding of neuroscience). (292 respondents – free-response question, Wellcome Trust survey only)</b>	
	Percentage of responses ( <i>n</i> )
Variety of learning styles/varying teaching methods	28% (81)
Memory techniques	8% (23)
Other answers	7% (21)
Mindmaps	5% (16)
Brain Gym	3% (8)
Teaching students about neuroscience	2% (7)
Adapting methods to needs of individual student	2% (5)
Giving time to think	2% (5)
Linking topics/building on past knowledge	2% (5)
Digital technology	1% (4)
Breaks between activities	1% (4)
Don't use neuroscience/don't know enough about it to use it	1% (4)
Water	1% (3)
Not letting lessons go on for too long	1% (3)
Relaxation/reducing stress	1% (3)
Music	1%(3)
Sleep	1% (2)
Left/right brain approach	1% (2)
Growth mindset	1% (2)
Used to use BrainGym but discovered it was no use	1% (2)

The following nine tables provide more information about the three most frequent interventions (learning styles, Brain Gym®, and left/right brain learner type): Tables A9 to A11 show where respondents came across information about them, Tables A12 to A14 show what impact teachers thought these activities have upon students, and Tables A15 to A17 show how these interventions were used.

**Table A9.** Where respondents came across learning styles

<b>Where did you come across learning styles?</b> (716 respondents, Schoolzone survey only)	
	Percentage of responses ( <i>n</i> )
Through my institution	68% (484)
From other teachers	47% (335)
Through an external training provider	38% (271)
Educational media	26% (186)
Conferences	19% (136)
In an academic journal	8% (58)
Other	8% (58)
The public media	5% (34)
Commercial products	3% (19)
In a popular science magazine	2% (17)
Can't remember	2% (17)
In a scientific journal	1% (9)

**Table A10.** Where respondents came across Brain Gym®

<b>Where did you come across Brain Gym®?</b> (429 respondents, Schoolzone survey only)	
	Percentage of responses ( <i>n</i> )
Through my institution	53% (227)
From other teachers	41% (175)
Through an external training provider	30% (129)
Educational media	17% (71)
Conferences	9% (37)
In an academic journal	5% (23)
The public media	3% (14)
Other	3% (13)
In a popular science magazine	3% (11)
Can't remember	3% (11)
Commercial products	2% (9)
In a scientific journal	1%(4)

**Table A11.** Where respondents came across left/right brain learner type activities

<b>Where did you come across left/right brain learner type activities?</b> (234 respondents, Schoolzone survey only)	
	Percentage of responses ( <i>n</i> )
Through my institution	39% (90)
Through an external training provider	32%(74)
From other teachers	27% (63)
Educational media	24% (56)
Conferences	16% (38)
In an academic journal	14% (32)
Can't remember	6% (14)
In a scientific journal	6% (13)
The public media	4% (10)
In a popular science magazine	4% (9)
Commercial products	3% (8)
Other	3% (7)

**Table A12.** Impact learning styles had on academic performance

<b>What impact has Learning Styles had on students' academic performance?</b> (736 respondents, Schoolzone survey only)	
	Percentage of responses ( <i>n</i> )
A significant impact	3% (20)
Some impact but difficult to measure	6% (49)
Not sure	14% (113)
No impact on academic performance but other benefits noted	51% (413)
No discernible impact	26% (209)

**Table A13.** Impact Brain Gym® had on academic performance

<b>What impact has Brain Gym® had on students' academic performance?</b> (435 respondents, Schoolzone survey only)	
	Percentage of responses ( <i>n</i> )
A significant impact	4% (20)
Some impact but difficult to measure	43% (202)
Not sure	28% (130)
No impact on academic performance but other benefits noted	18% (86)
No discernible impact	6% (29)

**Table A14.** Impact left/right brain learner type activities had on academic performance

<b>What impact have left/right brain learner type activities had on students' academic performance?</b> (240 respondents, Schoolzone survey only)	
	Percentage of responses ( <i>n</i> )
A significant impact	9% (21)
Some impact but difficult to measure	45% (110)
Not sure	35% (86)
No impact on academic performance but other benefits noted	5% (11)
No discernible impact	6% (15)

**Table A15.** How learning styles have been used

<b>How do you use Learning Styles?</b> (692 respondents, Schoolzone survey only)	
	Percentage of responses ( <i>n</i> )
More than just visual, auditory, kinaesthetic	61% (419)
Build into lesson planning	25% (174)
Try to reach all learners	14% (95)
Use in all lessons	14% (95)
Get to know individual student	11% (79)
Used a questionnaire to find learning style	6% (43)
Aid revision	3% (23)
For teacher training	2% (16)
To teach SEN pupils	2% (12)
Other	15% (102)

**Table A16.** How Brain Gym® has been used

<b>How do you use Brain Gym?</b> (411 respondents, Schoolzone survey only)	
	Percentage of responses ( <i>n</i> )
As a starter/warm up	48% (198)
During lessons to refocus	45% (187)
Daily/once a day	4% (17)
Throughout the day	2% (7)
Between lessons	7% (29)
Before exams/tests	3% (13)
After a period of concentration	2% (10)

**Table A17.** How left/right brain has been used

How do you use left/right brain? (221 respondents, Schoolzone survey only)	
	Percentage of responses (n)
Activities (no mention of sides of brain)	15% (32)
Activities using both sides e.g. logic and creative	11% (25)
Adapt to ensure suitable for all types of learning	9% (19)
Lesson starter and warm ups	8% (17)
Students work in the style that suits them	7% (15)
During lessons	5% (11)
Assessing pupils to find out which side they prefer	4% (9)
Brain gym	4% (9)
During lesson planning	4% (9)

The surveys asked if knowledge of how the brain works should be included in teacher training and the majority of respondents (77 per cent) thought it should be included in both initial teacher training and ongoing Continuing Professional Development as shown in Table A18.

**Table A18.** Neuroscience in teacher training

Do you think knowledge of how the brain works should be included in teacher training? (1142 respondents)	
	Percentage of responses (n)
Yes, in initial teacher training	8% (91)
Yes, in both initial teacher training and as ongoing CPD <sup>a</sup>	77% (883)
Yes, as ongoing CPD	10% (115)
No, it should not be included	1% (15)
Don't know	3% (38)

<sup>a</sup>Continuing Professional Development

We asked teachers to what extent they agree or disagree with the statement 'Research into how the brain works will improve teaching practice in the country in which I am based in the next ten years'. As shown in Table A19, 45 per cent slightly agree and 33 per cent strongly agree. Most (613) respondents gave reasons for their answers: 11 per cent said teaching and learning would improve, 8 per cent said teachers would need training, 8 per cent said teaching could be tailored to the needs of different students, 7 per cent mentioned governmental and/or political constraints, and 7 per cent mentioned a lack of evidence in education and that it has not yet been proven to be effective.

**Table A19.** Neuroscience improving teaching practice

Please indicate to what extent you agree or disagree with the following statement. Research into how the brain works will improve teaching practice (in the country in which I am based) in the next ten years. (1139 respondents) <i>italics indicate phrase used in Wellcome Trust survey only</i>	
	Percentage of responses (n)
Strongly agree	33% (372)
Slightly agree	45% (512)
Neither agree nor disagree	14% (162)
Slightly disagree	3% (33)
Strongly disagree	1% (17)
Don't know	4% (43)

#### *Collaborating with neuroscientists*

The survey included a question asking what would encourage teachers to become involved with neuroscience research (Table A20) and what should be in place before the results of neuroscience research are applied to education (Table A21).

**Table A20.** Collaboration with neuroscientists

<b>What, if anything, would encourage you to collaborate with neuroscientists doing research in education?</b> (183 respondents)	
	Percentage of responses (n)
A reduction in teaching hours to allow time for the collaboration	41% (75)
Being introduced to someone with expertise in neuroscience	28% (51)
Being able to use it to apply for a Teaching and Learning Responsibility Allowance	10% (19)
Being able to use it to get on a higher pay scale	8% (15)
Nothing would encourage me to collaborate	8% (14)
Other	3% (6)
I would be happy to collaborate without further incentives	2% (3)

**Table A21.** Dialogue between educators and neuroscientists. Teachers were asked to what extent they agree or disagree with the following statement: **“If the results of neuroscience research are going to be applied to education...**

<b>...an ongoing dialogue must exist between educators and neuroscientists.</b> (1143 respondents)	
	Percentage of responses (n)
Strongly agree	54% (618)
Slightly agree	34% (390)
Neither	10% (116)
Slightly disagree	1% (13)
Strongly disagree	1% (6)
<b>...techniques should only be used/taught in the context of science lessons.</b> (1140 respondents)	
	Percentage of responses (n)
Strongly agree	2% (25)
Slightly agree	4% (43)
Neither	14% (163)
Slightly disagree	30% (338)
Strongly disagree	50% (571)
<b>...the science must be relevant when applied to an actual classroom environment.</b> (1143 respondents)	
	Percentage of responses (n)
Strongly agree	52% (598)
Slightly agree	33% (381)
Neither	10% (119)
Slightly disagree	3% (33)
Strongly disagree	1% (12)
<b>...parents should be consulted before any techniques are introduced in the classroom.</b> (1142 respondents)	
	Percentage of responses (n)
Strongly agree	8% (90)
Slightly agree	18% (207)
Neither	38% (431)
Slightly disagree	25% (287)
Strongly disagree	11% (127)
<b>...neuroscientists should observe lessons before any techniques are introduced in the classroom.</b> (1143 respondents)	
	Percentage of responses (n)
Strongly agree	42% (476)
Slightly agree	32% (366)
Neither	17% (190)
Slightly disagree	6% (71)
Strongly disagree	3% (40)

*Trying out new activities and techniques*

Tables A22 and A23 show teachers' free responses, categorised for coding purposes, to what would encourage or deter them from trying new activities or techniques linked to neuroscience.

**Table A22.** What would encourage respondents to try a new activity or technique linked to neuroscience

<b>If there is anything that would encourage you to try out a new activity or technique linked to neuroscience, please detail in the box below. (831 respondents – free-response question)</b>		
	Number of respon	Percentage of responses (n)
Evidence	433	52% (433)
Training	96	12% (96)
Resources	87	10% (87)
Sound scientific basis	52	6% (52)
Specific examples/case studies	59	7% (59)
Easy to set up and deliver	42	5% (42)
Fits into normal lessons/National Curriculum	38	5% (38)
Clear explanation	38	5% (38)
Support from colleagues	26	3% (26)
Affordable	23	3% (23)
Support from expert	20	2% (20)
Application to my subject/pupils	19	2% (19)
More time	21	3% (21)
If it is fun/enjoyable for pupils	19	2% (19)
Practicality	10	1% (10)

**Table A23.** What would deter respondents from trying new activities linked to neuroscience

<b>If there is anything that would deter you from trying out new activities or techniques linked to neuroscience, please detail in the box below. (720 respondents – free-response question)</b>	
	Percentage of responses (n)
Lack of time	31% (224)
Lack of evidence/proof of effectiveness	22% (160)
No scientific basis	8% (55)
Lack of training/support/instructions	7% (47)
Cost	6% (45)
Cannot be absorbed into normal lessons	5% (36)
Lack of practicality/not applicable	5% (33)
Lack of support	4% (30)
Lack of available resources	4% (28)
Safety concerns/risky/damage to pupils	3% (25)
Trendy/fad/gimmicky	3% (23)
Upsets students/ruins their self-confidence	3% (21)
Too much jargon	3% (19)
Too rigid/narrow application	2% (17)
Not been previously tested in schools	2% (16)

**Mumsnet discussion thread**

On behalf of the Wellcome Trust, Mumsnet surveyed their members with the following text:

“Post on this thread about any activities/products/techniques you may have come across that are aimed at boosting your child’s learning, anything from games designed to affect how the brain learns to products/techniques you might use to make changes to your child’s diet or lifestyle. You may have come across these things in use at your child’s school or you may be using them yourself at home.



When you post, please think about the following questions...

Which activities or products (if any) have you come across which are designed to boost your child's learning? And how effective (or otherwise) have you found them?

Have you tried anything yourself to improve or enhance your child's learning? If so, what have you tried? And what influenced your decision to try that activity/product? How effective (or otherwise) do you think it has been?

What aspect of your child's school experience (if any) do you think could most be improved by neuroscience? You might want to consider for example, how the teacher talks to the children, the activities the children take part in, or the materials they study."

There were 86 respondents and 499 mentions of activities that had been used to improve learning. The activities were categorised for coding purposes, as shown in Table A24, which also notes any comments on the impact of these activities that respondents made.

**Table A24.** Activities used to boost child's learning and their impact (mention-based). Percentages are given, with number of mentions in parentheses.

	Total	Had a positive effect	Had very little or no effect	Other/not mentioned
Reading	46	65% (30)	9% (4)	26% (12)
Parental input	36	78% (28)	3% (1)	19% (7)
Commercial packages	23	61% (14)	22% (5)	17% (4)
Music/singing	19	58% (11)	5% (1)	37% (7)
Repetition	17	82% (14)	12% (2)	6% (1)
Educational toys	15	40% (6)	60% (9)	0
Understanding brain dev.	15	47% (7)	7% (1)	47% (7)
Following child's interests	14	93% (13)	0	7% (1)
TV	13	77% (10)	0	23% (3)
Traditional toys	11	82% (9)	0	18% (2)
Flashcards	11	55% (6)	18% (2)	27% (3)

#### Parent survey

There were 109 UK respondents (88 per cent female and 12 per cent male) to the parent survey, most of whom (81 per cent) were aged 35–54. Table A25 presents the number and ages of the children of all UK respondents.

**Table A25.** Ages of children of parents responding to survey

Age of children (years)	Number of children of that age	Percentage of responses (n)
0–3	1	14% (15)
0–3	2	5% (5)
4–7	1	26% (28)
4–7	2	9% (10)
4–7	3	1% (1)
8–10	1	1% (1)
8–10	2	30% (33)
11–14	1	1% (1)
11–14	2	25% (27)
15–17	1	1% (1)
15–17	2	14% (15)
≥18	1	14% (15)
≥18	2	7% (8)
≥18	3	1% (1)
≥18	4	1% (1)

#### Main findings from the student survey

The student survey, which is not detailed in the main report, was open from 30 April 2013 to 14 June 2013. Of the 57 UK student respondents, about half (51 per cent, or 29) were aged 18 or over, seven were aged 15–

17, 20 were aged 11–14, and one was aged 8–10. The survey asked whether students do something to try to improve their academic performance, and half (28) responded that they do, but most activities that were named are not explicitly or predominantly linked with neuroscience. Of those who described what they do: 43 per cent use learning or revision techniques; 25 per cent discuss or work with others; 21 per cent sleep; 25 per cent research information; 14 per cent exercise; 11 per cent have a healthy diet; 11 per cent use illustrations, diagrams and/or mindmaps; 7 per cent use technology, such as apps and websites; and 7 per cent take regular breaks from studying.

We then asked if students had ever used any of a specific range of activities to help improve their academic performance, whether they thought they helped and how. As with the teacher survey, the higher level of reporting in response to specific techniques could reflect the difference between having to recall a particular approach as opposed to simply recognising one, but again it might also reflect that students did not necessarily associate these specific approaches as having neuroscience origins (or purporting to).

- Sixty-eight per cent had increased their sleep, and 90 per cent of those thought it had helped their academic performance (of the latter, 33 per cent reported improved focus, attention and/or concentration, 33 per cent reported increased energy and/or alertness, 6 per cent reported relaxing and/or calming effects, 6 per cent reported an increased ability to memorise, learn and/or take on new material, 17 per cent reported improved brain function and/or performance, and 11 per cent reported improved health and general fitness).
- Fifty-eight per cent tried drinking more water: 48 per cent of those thought it had helped their academic performance.
- Forty-five per cent tried doing regular sports and exercise: 77 per cent of those thought it had helped their academic performance (of those, 15 per cent reported improved focus, attention and/or concentration, 31 per cent reported increased energy and/or alertness, 15 per cent reported relaxing and/or calming effects, 8 per cent reported improved brain function and/or performance, 8 per cent reported improved stimulation and/or motivation, and 38 per cent reported improved health and general fitness).
- Thirty-three per cent tried learning at different times of day: 53 per cent of those thought it had helped their academic performance.
- Twenty-eight per cent drank coffee, 26 per cent listened to classical music, 18 per cent took vitamins, 18 per cent did Sudoku or other puzzles, and 18 per cent played computer games.