Read the following newspaper report and then write about whether you consider it to be valid research. Some think prompts are given.

UK Fast food diet producing 'fat' babies

New statistics out this month suggest that our obsession with fast food is now producing fat babies. This year a record number of babies – 103 – have weighed in at more than 12lb 12 oz. According to figures from the Office for National Statistics, 1.68% of babies weighed more than 10lb this year compared with 1.45% ten years ago. Boy babies weigh an average of 7lb 8oz, a rise of 2oz from 1973. Experts state that babies who are padded with fat all over their bodies – including, in some cases, their skulls – have a greater tendency to become obese. In Japan where fast food is not as popular and the average diet includes an abundance of raw fish the average birth weight is 6lb 10oz and in India the average birth weight is less than 6lb.

Think prompts:

Is this report 'research'?

Would you describe it as systematic, sceptical and ethical?

What other information would a researcher need before she or he could draw the same conclusions as this journalist?

How differently do you think a research report might be constructed?

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Record-keeping Index: Record No ………..

Author(s)   (surname(s)   plus initials)

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The ethical dilemma

An 11-year-old boy, Joséf, is dying from a very rare form of cancer. There is no known cure and he only has a few months left to live. Researchers are in the process of developing a new drug which they think may be able to cure this cancer in the future if it could be caught at an early enough stage. The drug is not perfected yet and even if it were, Joséf's cancer is already far too advanced for it to be able to cure him. However, doctors could learn a lot more about the drug and its potential if they could test it out on Joséf. Although this would not help Joséf it could benefit many more children in the future. There is a possibility that there might be some side effects from the drug but the doctors cannot be sure as it has not been tested on humans before. Joséf's parents are against this and are refusing to give their consent. They want Joséf to have the best possible quality of life and to be left in peace for the few months he has left. But Joséf would like to help the doctors and says he wants to do some good with his life before he dies. Who should have the final say on consent? Should Joséf, aged eleven, be allowed to overrule his parents or should his parents wishes prevail? Who else might influence the decision-making process?
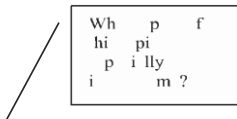
Role play character parts

Joséf   Wants to have the drug and insists it's his body and his life.

Mother   Wants Joséf to be left in peace so that the family can make the most
             of the little time they have left together.

Father   Angry that the doctors should have approached them with this
             proposal, says this is emotional blackmail and that Joséf is being
             exploited.

Sister   Supports Joséf.

Doctor   Arguing for the possible benefits for other children.

Nurse   Undecided.

Additional roles for larger numbers – younger sibling, grandparent(s), second nurse.
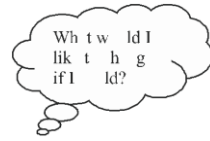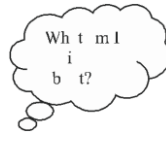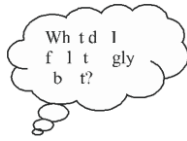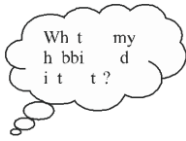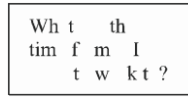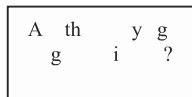
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Wh t my h bbi d i t t?

Wh t d I f l t gly b t?

Wh t m I i b t?

Wh t w ld I lik t h g if I ld?

TOPIC AREA _____

Wh p f hi pi p i lly i m ?

Wh ly m I yi g fi d ?

Wh d h w ld I fi d hi ?

DRAFT QUESTION _____

A th y g g i ?

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RESEARCH QUESTION _____

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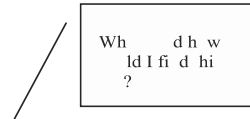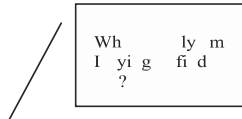
EXTRACT 1 – FROM JADE'S OBSERVATION NOTES

Bretby School, Class 7G, Observation of Manzoor during Geography lesson, Wednesday 21st January 2004 10.20am

… It's been drizzling with rain all day so far and it looks like it will be wet break again. I'm sitting here waiting for the supply teacher to arrive. Mrs Jackson, our Geography teacher has been off ill all week – or so we're told!! – so I don't know who we'll be getting today. The teacher arrives. It's a lady supply teacher, quite old. Manzoor looks up to see who's come in. Manzoor starts to listen. The teacher asks a question and Manzoor looks around to see who's putting up their hand. Manzoor digs around in his pocket and pulls out his mobile phone. He puts it under the table where the teacher can't see it and starts to text. He is listening to the teacher again now. Manzoor is reading from his text book … Dean's just asked me if he can borrow my gel pen, I told him not to bother me when I'm doing important observing for my research …

EXTRACT 2 – FROM JACK'S OBSERVATION NOTES

Bretby School, Class 7G, Observing Manzoor (Geography lesson), Wednesday 21st Jan 04 10.20am
Teacher arrives – supply
Manzoor looks up, nudges Paul next to him, nods towards Teacher and whispers something
Manzoor starts to listen
Teacher asks Manzoor a question, M looks around to see who's putting up their hand
Manzoor chewing pencil
M starts doodling
M gets out mobile phone under the table & starts texting
M begins to listen again
M turns round to chat to Ali
M realises he should be reading something from his text book
M asks P what page it is
M finds page and starts to read
Reads (about 2 mins)
Looks up to see what T is doing (handing out worksheets)
T asks him what he's doing out of his seat 'just dropped me pencil Miss' (smirking)
Sits down again, laughing and looking round to see which of his mates are watching him
Reads a bit more …

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EXTRACT 3 – FROM INDRA'S OBSERVATION NOTES

Manzoor (Geog) 21/01/04 – 10.20am

ST arrives

M looks up, nudges P next 2 him, nods 2 T & whispers 'another old fossil'

M starts 2 listen

T asks a ? M looks ∪ 2 C whos puttg up hands

M chewg pencil

doodlg

lookg ∪

gets out mobile under table & starts textg

begins 2 listen again

turns ∪ 2 chat 2 A

realises should b readg somethg from text bk

asks P what page it is

finds page and starts 2 read

reads – ∪ 2 min

looks up 2 C what T doing (handg out worksheets)

pulls face, flicks pencil on floor, gets up 2 pick it up

T asks him what hes doing out of seat

M – 'just dropped me pencil Miss' (smirkg)

sits down again, laughg & lookg ∪ 2 C which of his mates are watchg him

reads a bit more

turns ∪ to chat to A again (A is fillg in his worksheet and wont respond)

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Interviewer:	Hi Rashid, thanks for coming along this morning to talk to me.
Rashid:	That's okay.
Interviewer:	I understand that you have recently finished doing SATs at your school.
Rashid:	Yeah.
Interviewer:	How long did that last for?
Rashid:	The whole week.
Interviewer:	Were there many tests?
Rashid:	About two each day.
Interviewer:	And how long did the tests last for?
Rashid:	Some were 45 minutes but they changed.
Interviewer:	Did you get very tired?
Rashid:	Yeah, all the way through.
Interviewer:	More tired at the end of the week?
Rashid:	Yeah.
Interviewer:	How difficult did you find the tests?
Rashid:	Most of the tests were quite hard, because we hadn't gone on to those subjects in the whole year, in Year 6.
Interviewer:	Which of the tests did you find the easiest?
Rashid:	The easiest one was the English long task – I enjoyed that.
Interviewer:	And which was the hardest?
Rashid:	The maths first calculator.
Interviewer:	And when will you find out the results of these tests?
Rashid:	June, quite late in June.
Interviewer:	What do you think about having the tests marked by an external examiner and not by your own teachers?
Rashid:	Well, it will be kind of strange because they might not be able to know what you've written if you've kind of rushed it or something.
Interviewer:	Did you get worried at all, before the tests?
Rashid:	Yeah before the test, it was quite off-putting when you're writing them.
Interviewer:	Was that just before the tests, or you got worried the night before?
Rashid:	It was like most of the week before you got quite nervous.
Interviewer:	Do you think you were able to do your best on the day?
Rashid:	Yeah, some of the tests I could have done better, because I didn't finish them but most of them I did well.
Interviewer:	And do your teachers help you to practise for the SATs in the weeks leading up to them?
Rashid:	Yeah, cos we did like mock SATs which help you answer the type of questions that you'll be given.
Interviewer:	And how much lesson time does that take up?
Rashid:	Usually it's a whole lesson would be doing tests, just to learn how to do them.
Interviewer:	Do you think there is too much testing at school?
Rashid:	Sometimes it feels like there's too many tests, but I guess it is all for your benefit.
Interviewer:	Which of these words do you think would best describe SATs? Okay, fun, stressful or hateful?
Rashid:	Okay.
Interviewer:	And if there was a choice between sitting SATS or having your teacher just assess your work what would you prefer?
Rashid:	Assess your work.
Interviewer:	Thank you very much Rashid that was really interesting. Thanks for coming along.

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Interviewer:	Hi Emma
Emma:	Hi
Interviewer::	Thanks very much for coming along this morning to talk to me. I understand that you have recently finished doing the SATs at your school.
Emma:	Yes
Interviewer:	Can you explain to me what that was like?
Emma:	It was OK and it was sort of fun, because we got to like do no work in the afternoons, but it was hard with all the revision when you got home.
Interviewer:	So you didn't have to do any tests in the afternoon, you just did tests in the morning.
Emma:	Yes, just tests in the morning, then we just did games and PE and stuff in the afternoon.
Interviewer:	And then you had free time?
Emma:	Yes
Interviewer:	That was nice. Do you normally have much games time in class time or is that special?
Emma:	We only get about 2 hours a week. But we had like 3 hours last week which was fun.
Interviewer:	Can you describe to me some of the emotions you felt before you were doing the SATs and the time leading up to the SATs?
Emma:	I kept on feeling like, because I'm not good at certain subjects, I kept on feeling, quite like upset and like, I wasn't exactly upset but I sort of felt a bit nervous, and like I might run out of time and I might not do them well enough. But when I was running up to the ones I was good at like science I didn't feel nervous and I really wanted to get in and do them, and I found them quite fun.
Interviewer:	You enjoyed the science ones the most, which tests did you feel most nervous about?
Emma:	Spelling and mental maths
Interviewer:	Spelling and mental arithmetic. How does the mental arithmetic go? What do you have to do that makes you nervous?
Emma:	I'm scared that I won't have enough time and it will go onto the next question.
Interviewer:	I see so they ask a question and you have to answer within a set time?
Emma:	Yes, on the tape.
Interviewer:	It's on the tape, do you find that particularly stressful?
Emma:	Yes a bit because it's like you don't know sort of when they're going to start and sometimes you can't really understand them.
Interviewer:	So do you get much time to practise doing that sort of thing or …
Emma:	We do it every week on Friday. So I did practise it quite a lot.
Interviewer:	What sort of other things you do to prepare for the SATs in school in the classroom?
Emma:	We like make posters and revise that sort of way and we also just do mock SATs tests and stuff, but we do like at the beginning of maths, we also do a SATs question.
Interviewer:	Do you think there is too much testing in schools?
Emma:	Well, I don't think there is because testing doesn't really affect you so you can't really have too much of it but sometimes I think there is because like for three or four weeks you just get tested you don't actually learn anything.
Interviewer:	What about them being marked by external examiners what do you think about that Emma?
Emma:	Sometimes I find that strange, cos what happens if they can't read my writing and what if they don't understand what I mean? Cos my teachers know I can't write really well.
Interviewer:	So when you do a piece of work and your teacher's going to mark it you feel that she will understand much more what you were trying to say?
Emma:	Yeah, 'cos my teachers are used to how I write.
Interviewer:	So if you had a choice would you rather your assessment was done by your teacher than by someone external?
Emma:	Yeah.
Interviewer:	So what would your friends think about that – or is that something that you think.
Emma:	I don't know if my friends would think the same but they probably would because they also like … they don't like the wait for it to be sent off and back again.
Interviewer:	Have you got any brothers or sisters who are doing SATs?
Emma:	Yeah, my brother's in Year 9 and he did his SATs.
Interviewer:	How did he find the SATs?
Emma:	He found his quite stressful because it affected his GCSEs.
Interviewer:	Right. So what's the atmosphere like at home when it's SATs time?
Emma:	It's sort of really edgy because everybody's really stressed and they get angry all the time.
Interviewer:	Well thank you very much for coming along to talk to me this morning Emma, I found that really interesting.

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Interviewer:	Hi Jamie, thanks very much for coming along to talk to me this morning.
Jamie:	Okay, thank you for your time as well.
Interviewer:	What's it like being in Year 6.
Jamie:	It's better than being in Year 5 because when I came in Year 5 I didn't know anyone and was pretty afraid cos I didn't know anyone and I didn't know what anyone was like. But it's a lot better now cos I know all my friends. It's okay I suppose. I'm not that sure. I'm okay it's just sometimes I have a falling out with my friends quite a lot and that's basically it and then just have fun and games and then I'm fine really.
Interviewer:	What's different about being in Year 6 from any other year?
Jamie:	It's got a lot harder with SATs. The questions are really hard. I worked a lot harder to get my level four and it's just been great to know that I have done really well.
Interviewer:	You mentioned SATs – I'm not sure what SATs are – can you explain a little bit about what they are?
Jamie:	It's basically an exam and it's trying to get you in to for next year what classes and what level you are at – so there's level one, level two, level three, level four. It's pretty hard I suppose but you get through it. It's not as hard as what you think really, it's a lot easier.
Interviewer:	What do the levels mean Jamie?
Jamie:	Level four means that you are working at level 6 like Year 6. Level 3 is around five and four, then three is 3 and 4, 2 is around 2 and 3 and 1 I don't think they have any exams cause it's a bit too hard for them.
Interviewer:	How do you feel about being given a level?
Jamie:	I feel fine actually, as long as I know that I've tried my best and just good to know I've done it cos I've worked hard for it.
Interviewer:	And the level that you're given, somebody external decides that, do they, from the test, they're externally marked?
Jamie:	I don't know really, I'm not sure.
Interviewer:	What do you think about how the level should be decided, what's your opinion?
Jamie:	My opinion most probably would be that as long as everyone tries their best that they should get the level they want and that's it really.
Interviewer:	The tests that you have to do for these levels, do they last a long time?
Jamie:	No there's a forty-five-minute one, twenty-minute one another forty-five minute one in English and then the science is just forty-five minutes for both of the SATs papers and maths is basically the same.
Interviewer:	So you only have tests in English, maths and science? Anything else?
Jamie:	No.
Interviewer:	What do you feel about that?
Jamie:	I'm not really bothered. I'm glad that there's only three cos then it'll just be more harder. It'll just take longer to do and you'll get more shaken up.
Interviewer:	With more and more tests in more and more subjects. Supposing there weren't any tests and you just had your teacher give you a progress report at the end of year instead – what would you think about that?
Jamie:	I would most probably feel okay I suppose – not really bothered just as long as I know that it's just been a good day to do it.
Interviewer:	Does it ever affect friendships – is there ever any rivalry?
Jamie:	There might be. There was one time but it went down then after a little while.
Interviewer:	And what about at home?
Jamie:	My mum just makes me try my best and she's not really bothered as long as I try my best and I get where I want to go.
Interviewer:	Do you have to do these SATs at any other time, have you done any before?
Jamie:	You have to practise all through the year – there's just the one that you get your levels on.
Interviewer:	All through the year so you've being practising at the beginning of the year?
Jamie:	There is one SATs test every term I think just to test you to see how far you are and how much you need to go to get to where you want to be.
Interviewer:	Does that take up a lot of class time?
Jamie:	I suppose so, yeah, it takes up about 2 hours of the day.

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Interviewer:	And is that time you think you would rather be doing something else or are you quite happy?
Jamie:	Quite happy, trying to practise to get so that I know that I can get further if I need to.
Interviewer:	When do you start thinking about SATs? Do you think about it when you're in Year 5, Year 4…?
Jamie:	I don't really think about it, just try and take it easy. When it comes to it do my best.
Interviewer:	And when do you find out your results Jamie?
Jamie:	I think it's the end of next term, 'cause we have just finished them about a week ago I think it is, a week or two, and they come back like a month later, because they have to be checked by a few different people just to make sure that they are all the right marks.
Interviewer:	A long time to wait do you feel?
Jamie:	I'm not really bothered I'm glad I don't get them really soon back 'cause then I'd just be worried about them but sometimes I do worry about them 'cause they take so long and then I think that I've done wrong so it all depends really.
Interviewer:	What form does the worrying take?
Jamie:	Just don't really want to go to school nothing like that 'cause I'm worrying so much about it.
Interviewer:	Does that happen a lot Jamie?
Jamie:	No, it only happens when SATs comes, just get really scared.
Interviewer:	Do many of your friends get scared?
Jamie:	Yeah, quite a lot of them do.
Interviewer:	What do you do when you get scared to try and get through that?
Jamie:	Usually just sit down and think about it by myself and then think how I'm going to do it and just remind myself and that I have to try my hardest for myself and not for anyone else.
Interviewer:	So you don't go and tell anyone you feel scared?
Jamie:	No.
Interviewer:	You wouldn't tell your mum or your teacher, or another friend?
Jamie:	No.
Interviewer:	Are you glad they're all over now?
Jamie:	Yeah – a lot gladder.
Interviewer:	Well, I wish you the very best of luck when you get your results. I'm sure you've done really well.
Jamie:	Thank you.
Interviewer:	Thanks very much for coming to talk to me this morning.
Jamie:	Okay.

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Questionnaire 1

	Agree	Disagree
1. School uniform is a good idea		
2. I hate wearing school uniform		
3. Teachers should have to wear a teacher uniform		
4. Children should be able to choose whether they wear school uniform or not		
5. Children should only wear school uniform from Year 3 upwards		
6. School uniform should be banned		

Questionnaire 2

	Agree	Neither agree nor disagree	Disagree
1. School uniform is a good idea			
2. I hate wearing school uniform			
3. Teachers should have to wear a teacher uniform			
4. Children should be able to choose whether they wear school uniform or not			
5. Children should only wear school uniform from Year 3 upwards			
6. School uniform should be banned			

Questionnaire 3

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
1. School uniform is a good idea					
2. I hate wearing school uniform					
3. Teachers should have to wear a teacher uniform					
4. Children should be able to choose whether they wear school uniform or not					
5. Children should only wear school uniform from Year 3 upwards					
6. School uniform should be banned					

Questionnaire 4

	Strongly agree	Agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Disagree	Strongly disagree
1. School uniform is a good idea							
2. I hate wearing school uniform							
3. Teachers should have to wear a teacher uniform							
4. Children should be able to choose whether they wear school uniform or not							
5. Children should only wear school uniform from Year 3 upwards							
6. School uniform should be banned							

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Scenario 1: The water drinking experiment

A researcher wants to find out whether drinking water throughout the school day improves pupils' concentration.

Task: Identify the independent, dependent and extraneous variables. Discuss what the researcher needs to do to set up a valid experiment and then consider what the ethical implications are.

The independent variable is ……………………………………………………………………

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The dependent variable is ..…………………………….……………………………

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The extraneous variables are

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The ethical considerations are

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Scenario 2: The human growth drug experiment

Someone has developed what they believe to be the equivalent of a 'miracle fertilizer' for human beings (rather than tomato plants!). She or he hypothesises that taking this drug will increase human growth. This could have some major benefits for individuals who have stunted growth but how might a researcher go about testing this? What are the ethical implications?

Task: Identify the independent, dependent and extraneous variables. Discuss what the researcher needs to do to set up a valid experiment and then consider what the ethical implications are.

The independent variable is

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The dependent variable
is.. .

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The extraneous variables are

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The ethical considerations are

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Scenario 3: The baby colour preference experiment

A researcher wants to investigate whether 9-month-old babies show any strong colour preferences, and if so whether this is different for girls and boys. She has a play pen, three coloured teddies (brown; pink; and blue) and a stop watch.

Task: Identify the independent, dependent and extraneous variables. Discuss what the researcher needs to do to set up a valid experiment and then consider what the ethical implications are.

The independent variable is
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The dependent variable
is... .

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The extraneous variables are
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Transcript extract 1: Observations of Kaz first break Mon 2nd December

… She's yelling louder than the others.

She's crouching down,

She's yelling more.

Yelling more loudly than the others.

Yelling even louder.

She's crouching down again.

Kaz is hanging onto people,

She's gripping onto them.

Yelling loudly again.

Still yelling loudly.

More yelling

loudly.

More loudly than the others.

More loud yelling.

She's being picked up and carried like a baby by one of the group.

Someone else has picked her up now.

Someone else has picked her up and is rocking her.

They are holding her by her middle and swinging her around.

Kaz is hanging onto people.

The group are playing tag. Every time Kaz tries to run someone catches her.

Kaz is gripping onto them, hanging on their arm.

She is still gripping onto them.

Kaz has to stand still because she's caught.

She's yelling more loudly than the others to get free. The others aren't yelling to be got free.

Someone has come straight away to get her free.

Kaz is being hugged now.

More hugging.

More hugging.

No-one else in the group is being hugged.

No-one else in the group has been hugged for the whole of break time.

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Transcript extract 2: Observation of Rose first break Thursday 5th Dec

… She's being picked up.

She's being twirled round and then put down again.

They're choosing who is going to be 'tug' and 'it', Rose is trying to take

charge. Some are doing what she says but most are ignoring her.

Someone else has started to speak and they're listening to the new person and ignoring Rose.

Rose isn't getting chased as much as the others in the tag game.

Most of the time she's just staying on her own.

She keeps running off and nobody is bothering about her.

Now she's gone up to someone in the group and she's clinging, gripping on to them, sort of hanging on really.

Bending forwards and running.

Ducking, sort of thing.

Screaming and shouting loudly.

Ducking a lot more.

Now she's got her arm round some of her friends.

Yelling loudly.

Being picked up again.

Being 'stretched'.

More

'stretching'.

Picked up again.

Someone else has picked her up now and is walking round with her – she's put her down now.

She's being hugged and patted …

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Table 10.3   Number of passes (excluding goal keepers) expressed as percentages

F tb ll m t h	SCHOOL A {gi l 5 b y 5}				SCHOOL B {gi l 5 b y 5}			
	P by y t b y	P by b y t gi l	T t l mb f p	% p b y t i l	P by b y t b y	P y b y t gi l	T t l mb f p	% p b y t gi l
1	31	9	40	23	49	5	54	9
2	26	20	46	44	37	3	40	8
3	17	16	33	49	39	4	43	9
4	38	5	43	12	60	8	68	12
5	19	17	36	47	51	8	59	14
6	32	10	42	24	42	6	48	13
7	43	29	72	40	43	9	52	17
8	27	11	38	30	48	9	57	16
9	25	16	41	39	66	10	76	13
10	21	12	33	36	42	7	49	14
Tot ls	279	145	424	34 { g % f m h 10 m }	477	69	546	13 { g % f m h 10 m }

d d t th   t wh l p   t

Scrutinise the data provided in Table 10.3 and write about or discuss what you can deduce from the data. Think about the following:

Is a valid comparison being made between the two sets of data?

What conclusions can you draw?

These data only relate to two schools. Is this enough to be able to make any generalisations about mixed gender football?

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Set of data relating to pre- and post-test scores after an experimental spelling teaching approach was used for half a term

Participant	Pr test sp lling scor (%)	Post test sp lling scor (%)
A	48	68
B	32	62
C	87	88
D	76	79
E	52	63
F	12	53
G	92	92
H	60	68
I	18	60
j	69	74

Scrutinise the data in the table above and write about what you notice from your analysis. Do you notice any patterns or trends? What conclusions might you draw?

_____

_____

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Introduction – about 200 words (more if you are including a review of literature)

In this section write about:

• What you were interested in and why.

• What you wanted to find out.

• What other people have already found out (if anything)

• Finish this section by stating what your research question(s) is(are).

Methodology – about 500 words

In this section write about:

• Whom you did your research with and how you decided on your sample

• How you went about finding data to answer your research question(s). This means describing in detail each of the methods you used.

• The time scales of your study.

• All the ethical considerations for your study and what steps you took to consider the ethical sensitivity of what you were doing (e.g. making questionnaires anonymous; considering children who might have difficulties with reading; thinking about children's feelings etc.)

Findings – graphs and/or tables or descriptive findings

This is the section where you present your results. Quantitative data are best presented in graphs and/or tables and qualitative data in an organised compilation of the descriptive findings.

Discussion – about 500 words

In this section write about what you found out from your results and your interpretations of your findings. As you do this also write about how this affects any wider considerations e.g. if you are doing some research on bullying and your results show that a lot more boys are bullied than girls, what are the implications of this?

Conclusion – about 200 words

In this section write about what conclusions you can draw and what other research might be possible from the first steps you have made.

References

Include a list of references for any work you have cited.

Appendices

These sometimes contain tables of 'raw data'; blank questionnaires; interview transcripts.

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My research was about the opinions of Year 6s at my school about the use of computers in lesson time now don't think 'research how boring,' because it's not. I am really excited by computers and find them so interesting you can make a computer do almost anything except make it take your dog for a walk! Think about some of the wonder- ful things computers have done for us they design cars, they make films like 'Basil the Great Mouse Detective' and they make it possible to produce CDs. Now they even tell streetlights when to turn on! I wanted to find out how much pupils enjoy using computers in their lessons at school and whether they thought they got enough computer time in some different subjects like Geography and English not just about Maths and Science. I decided the best way of collecting my data was to do a survey so I designed a questionnaire. I included a 'don't know category' because I wanted to be sure that the pupils did really agree or disagree and added the strongly categories to find out if there was any strong feeling about any of the statements. I thought of the kind of statements I would need that would help me get the right kind of data. I used a five-point agreement scale: strongly agree; agree; don't know; disagree and strongly disagree. This was to give the pupils plenty of choice so that they didn't feel pushed into answering yes or no. I made the questionnaire anonymous except for ticking whether they were a girl or a boy because I was also interested to see if there were any gender differences. The questionnaire had eight statements. I enjoy using computers at school. I like XP computers better than window 98. Computers should be easier to use. Everybody should have their own personal laptops for lessons. Computers should be lowered in price. I want to use computers more in English. I want to use computers more in Geography. I want to use computers more in Maths. The replies came back over about three days and only three from the class did not return them. First of all, I separated the replies into girls and boys. Because I was interested in how much computers were used in lessons and whether there were enough computers I thought it would be useful to interview a teacher to get an adult view about computers The numbers of boys and girls in the class are not exactly even so I turned the responses into percentages to make it easier to compare the two groups. I used a calculator to do this and rounded the per- centages to the first decimal point. This is just a small study but it would be interesting to do it with lots more classes to see if the results were the same and to follow up the questionnaire with some interviews of boys and girls to find out more exactly what some of the gender differences might be. The majority of children from both genders enjoy using computers. NO children dislike using computers, although a few girls and boys ticked the 'don't know' box. There are a few more boys who strongly like using computers but no significant difference is made. It seems that no children are afraid of using computers so perhaps they could be used more often. No pupils disliked the XP computers more than the 98s. Though no girls 'strongly' liked the XPs, all 100% of the girls agreed with liking the XPs more than the 98s. Should there be a new range of computers each year? But what about the expense? There was a fairly even spread of opinion about computers being easy to use and no real gender differences. Does this mean that computers are already easy to use at the moment or is it just that pupils are getting much better at using them? That's something I could try and find out if I do any follow up work. I think the question about laptops is a bit futuristic because I doubt the schools would provide children with their own laptops but it was interesting to see what pupils thought all the same. Girls were slightly more in favour of this than boys but as you can see nearly everybody would like to have their own laptop. Although pretty much everyone thought that computers should be lowered in price, boys don't think computers should be lowered in price quite as much as the girls and there was slightly 'stronger' feeling in the responses from the girls. It was in the opinions about how often to use com- puters in these three different subject lessons where the greatest gender differences were. Girls disagree with using computers more in English than boys, but boys have most percentage on the strongly agree. I wonder if this is because English is the subject where we write the most and perhaps girls don't find the handwriting as much of a chore as the boys. It was almost the same picture for Geography although not quite as strong. There was less dif- ference in the genders about using computers more in Maths. Over half of both genders agreed with more com- puter use in Maths lessons but again it was the boys who expressed the 'stronger' feelings. I had expected that this percentage would have been higher. To me it seems like computers were practically invented for Maths – they can even work out where something would land like a space ship or guiding a plane from a to b. From this research I can see that all children, of both genders like using computers at school and find them easy to use. The majority of children would like to use computers more in school, although there were some slight gender differences here. Of the three subjects I surveyed, boys wanted additional computer time in English the most, whereas less than half of girls wanted more computer use in English. There was less strength of feeling about more computer time in Maths and Geography was about in the middle. I wonder if this is because computers are used quite a bit in Maths already but not perhaps as much in English. If children want to use computers more in class there would have to be a lot more computers around, as well as those in the IT room. Perhaps we could have an experiment for a year when one class has personal laptops that they can use whenever they want, in any lesson. We could interview them and their teachers afterwards to find out whether it made learning better.

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abstracting: a process of identifying common themes between and across sets of data.

closed question: a question which restricts the responses that can be made by having a pre-determined set of possible answers.

coding (in qualitative research): attributing codes to data in order to reduce the data mass into manageable and thematic categories.

data: information (which can be numerical or descriptive) which are analysed and used as the basis for making decisions in research. Data is plural, the singular form is datum but it is unusual to only ever have one piece of information in research so the word datum rarely appears in research writing.

dependent variable: the variable which shows the effect of an influence.

empirical: relates to something in our practical experience, derived from observation or experiment. It is linked to the idea that true knowledge is to be found within our practical experience rather than from speculative notions or ideas.

ethical: making sure that the well-being, interests and concerns of those involved in research are looked after. It is imperative that research does not cause harm or distress to any of the participants at any time. These days research is generally expected to follow a code of ethics laid down by an authoritative body.

ethnography: the description of a culture or a way of life through a process of 'immersion' as a participant observer in that cultural world.

focus group interview: a group interview with a focused theme where interpersonal dynamics and the interaction of participants in respect of one another's comments forms an important element in the data.

independent variable: the variable which exerts an influence.

Likert scale: a five-point scale used to measure responses in a range such as 'very good/good/neutral/poor/very poor'.

memoing: making immediate notes, throughout the initial stages of the analysis process, about aspects of the data, theory or research design that occurs to the researcher.

naturalistic: an approach that focuses on exploring the nature of things rather than testing hypotheses about them, on understanding and interpreting the world in terms of the people in that world. The world can only be understood by people who are part of that world and enquiry is consequently coloured by their individual experiences.

naturalistic observation: the observer does nothing to manipulate or stimulate the behaviour of the individuals being observed, aiming for as natural and typical a situation as possible.

open question: a question which does not limit the response that can be given nor suggest the kind of answer a researcher might be looking for.

participant observation: observation undertaken by a researcher who is also part of the action being observed, usually, but not always, associated with a qualitative approach.

population sample: a group of people who participate in research, the choice of people can be predetermined or random according to what is appropriate for the research question. The number of the population sample similarly varies according to the research question. Generally, quantitative methods have the larger population samples.

positivist: a scientific approach concerned with cause and effect, objectivity and controllability and with the ability to predict and measure. Knowledge about the world is generated by understanding these causal links.

qualitative: an approach which gathers data in a non-numerical (descriptive) form.

quantitative: an approach which gathers data in a quantifiable (numerical) form.

reflexive: a process of reflecting on the researcher's own position in relation to the action being investigated and the impact this might have on the collection of data and the analysis of findings.

sceptical: being prepared to question or doubt the nature of findings – even the most commonplace. The process of doubting is an important stage in research if we are to acquire relative certainty (we can never have absolute certainty). So, a sceptical approach tries to find things out but also looks for counter arguments which might reject as well as confirm the findings. Furthermore, researchers allow their findings to be scrutinized by other people and expect them to try and disprove the findings.

semi-structured interview: an interview based on a core of key questions with the additional flexibility of following up responses with further, more individualised questions.

statistical significance: is a measure of whether the differences of the effect showing in the data are bigger or smaller than the differences which might be expected to have happened by chance.

structured interview: a tightly framed interview consisting of a series of closed questions which are repeated in exactly the same way to all interviewees.

systematic: researchers think about what they are going to do and how and why they are doing it in a methodical, purposeful, step-by-step way. Everything is set out very explicitly, e.g. if a researcher is going to 'find out' by observation then exactly what is to be observed, who is doing the observing, how, where, in what circumstances and for how long, has to be made clear.

systematic observation: a meticulous method in which the minutiae of behaviour is targeted for observation and measured via a coding system.

triangulation: a process which uses more than one method of data collection in order to increase the validity of the research data.

unstructured interview: an interview with no predetermined questions based more loosely on conversational-style questions around the general topic area.

variable: something which can have two or more levels of difference, e.g. gender can be one of two variables – male or female – and hair colour can be one of several variables.

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Alderson, P. (2000) Children as researchers, in P. Christensen and A. James (eds), *Research with Children: Perspectives and Practices*, London: RoutledgeFalmer, pp. 241–257.

Alderson, P. and Morrow, V. (2004) *Ethics, Social Research and Consulting with Children and Young People*, Barkingside: Barnado's.

Baxter, L., Hughes, C. and Tight, M. (2001) *How to Research* (2nd edn), Buckingham: Open University Press.

Borg, W.R. (1963) *Educational Research: An Introduction*, London: Longman.

Boyden, J. and Ennew, J. (eds) (1997) *Children in Focus: A Manual for Participatory Research with Children*, Stockholm: Radda Barnen.

Christensen, P. and James, A. (eds) (2001) *Research with Children: Perspectives and Practices*, London: RoutledgeFalmer.

Christensen, P. and Prout, A. (2002) Working with ethical symmetry in social research with children, *Childhood*, 9(4): 477–497.

Clark, A. and Moss, P. (2001) *Listening to Young Children: The Mosaic Approach*, London: National Children's Bureau.

Coates, E. (2000) 'I forgot the sky!': children's stories contained within their drawings, *International Journal of Early Years*, l0(1): 21–35.

Cohen, L., Manion, L. and Morrison, K. (2000) *Research Methods in Education* (5th edn), London: RoutledgeFalmer.

Elsey, S. (2004) Children's experience of public space, *Children & Society*, 18(2): 155–164.

Fielding, M. (2004) Transformative approaches to student voice: theoretical underpinnings, recalcitrant realities, *British Educational Research Journal*, 30(2): 295–311.

Frankfort-Nachmias, C. and Nachmias, D. (1992) *Research Methods in the Social Sciences*, London: Edward Arnold.

Fraser, S., Lewis, V., Ding, S., Kellett, M., Robinson, C. (2004) (eds) *Doing Research with Children and Young People*, London: Sage in association with OUP.

Gillick v. *West Norfolk and Wisbech Area Health Authority* (1985) http://www.lawcampus.butterworths.com/student/Lev3/weblinked_books/fortin/dataitem.asp?ID=12595&tid=7 (last accessed 22 August 2004).

Glaser, B.G. and Strauss, A.L. (1967) *The Discovery of Grounded Theory*, Chicago: Aldane.

Howarth, R. (1997) *If We Don't Play Now, When Can We?* London: Hopscotch Asian Women's Centre.

Johnson, V., Ivan-Smith, E., Gordon, G., Pridmore, P. and Scott, P. (eds) (1998) *Stepping Forward: Children and Young People; Participation in the Development Process*, London: Intermediate Technology Publication.

Jones, A., Jeyasingham, D. and Rajasooriya, S. (2002) *Invisible Families: The Strengths and Needs of Black Families in which Young People Have Caring Responsibilities*, Bristol: Policy Press and Joseph Rowntree Foundation.

Kellett, M. and Nind, M. (2001) Ethics in quasi-experimental research on people with severe learning disabilities: dilemmas and compromises, *British Journal of Learning Disabilities*, 29, 51–55.

Kellett, M., Forrest, R., Dent, N. and Ward, S. (2004) Just teach us the skills, we'll do the rest: empowering ten-year-olds as active researchers, *Children & Society*, published online 5th February DOI: 10.1062/Chi.807.

Kerlinger, F.N. (1986) *Foundations of Behavioural Research* (3rd edn) New York: Rinehart & Winston.

Konstant, T. (2000) Speed Reading, London: Hodder & Stoughton.

Lawrence, D. (1988) *Enhancing Self Esteem in the Classroom*, London: Paul Chapman Publishing.

Leonard, M. (2002) Working on your doorstep: child newspaper deliverers in Belfast, *Childhood*, 9(2): 190–204.

Lewis, A. (2002) Accessing, through research interviews, the views of children with difficulties in learning, *Support for Learning*, 17(3): 110–115.

Lewis, V., Kellett, M., Robinson, C. Fraser, S. and Ding, S. (eds) (2004) *The Reality of Research with Children and Young People*, London: Sage in association with OUP. Likert, R. (1932) *A Technique for the Measurement of Attitudes*, New York: Columbia University Press.

Mason, J. (2002) *Qualitative Researching* (2nd edn), London: Sage.

Mayall, B. (2000) Conversations with children: working with generational issues, in P. Christensen and A. James (eds), *Research with Children: Perspectives and Practices*, London: RoutledgeFalmer, pp. 120–135.

Morrow, V. and Richards, M. (1996) The ethics of social research with children: an overview, *Children & Society*, 10(2): 90–105.

Nieuwenhuys, O. (2001) By the sweat of their brow? Street children, NGOs and children's rights in Addis Ababa, *Africa*, 71(4): 539–557.

Pickett, W. (2004) Multiple risk behaviour and injury: an international analysis of young people, in V. Lewis et al., (eds), *The Reality of Research with Children and Young People*, London: Sage in association with OUP.

Pollard, A. and Bourne, J. (1994) *Teaching and Learning in the Primary Classroom*, London: Cassell.

Pyke, N. (1993) Ablest 'being hindered', *Times Educational Supplement*, 22 October: 7.

Robson, C. (2002) *Real World Research* (2nd edn), Oxford: Blackwell.

Scott, J. (2000) Children as respondents: the challenge for quantitative methods, in P. Christensen and A. James (eds), *Research with Children: Perspectives and Practices*, London: RoutledgeFalmer, pp. 98–117.

Strauss, A. and Corbin, J. (eds) (1997) *Grounded Theory in Practice*, Thousand Oaks, CA: Sage.

Thorne, B. (1993) *Gender Play: Girls and Boys in School*, New Brunswick, NJ. Rutgers University Press.

Tuckman, B.W. (1972) *Conducting Educational Research*, New York: Harcourt Brace Jovanovich.

United Nations (1989) *Convention of the Rights of the Child*, New York: United Nations.

Wilson, N. and McLean, S. (1994) *Questionnaire Design: A Practical Introduction*, Newton Abbey, Co. Antrim: University of Ulster Press.

Woodhead, M. (1999) Combatting child labour: listen to what the children say, *Childhood*, 6(1): 27–49.abstraction 101–2

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