Communicating...

Consulting Pupils Project Newsletter

No 10 July 2003

Don't forget the pupil perspective!

Teachers are increasingly talking with pupils about important aspects of teaching and learning and the conditions of learning in school but there are some research topics that have been investigated by researchers where the views of the young people themselves might add another dimension. One such topic is research into season of birth and differences in opportunity and achievement that might be explained by pupils being autumn born or summer born. Geoff Wilson studied this topic a few years ago - and before pupil voice was so strongly on the agenda - for his PhD but recently he thought that it might be interesting to look at the issue in his own school and to see if pupils themselves were aware of any differences.

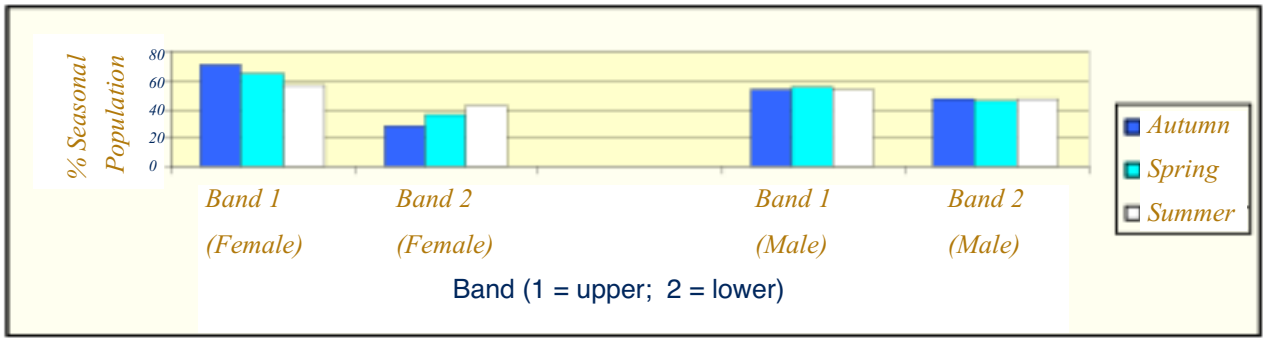
The Birthdate Effect - Geoff Wilson, Head of Psychology, Netherhall School, Cambridge

In Britain, summer-born school children (born May-August) are normally the youngest in their year cohorts, and autumn-born pupils (born September-December) are the oldest. Many research studies have shown that school performance of the older children in year groups, on average, is superior to that of the younger children.[1] Season of birth also influences sporting achievement, such as the likelihood of being selected for school representative teams. This effect appears to persist beyond the school years – for instance, English professional football teams contain an over-representation of autumn-born players compared to those born in the summer months.

Two main explanations of age-related differences in school performance in Britain have been proposed. Firstly, that they are related to differences in length of schooling: until recently the summer-born received shorter periods of primary education in many LEA areas. Secondly, that there may be an age-position effect produced by variables associated with the fact that some children in a year-group are older than their peers.

Previous research has been based largely on statistical analysis and has not explored pupils' awareness of the disadvantages of being the youngest in their year group. This report summarises the findings of research into the 'birthdate' effect in one school, an 11-18 comprehensive on the edge of Cambridge with a school population in years 7-11 of around 1225. The study first examines statistical data to see where there are season of birth effects and goes on to ask the youngsters themselves whether, and in what ways, they are aware of any differences associated with their schooling that may be attributable to relative age within a year cohort.

Fig. 1 Pupils in English bands as percentages of the total seasonal populations within each sex.

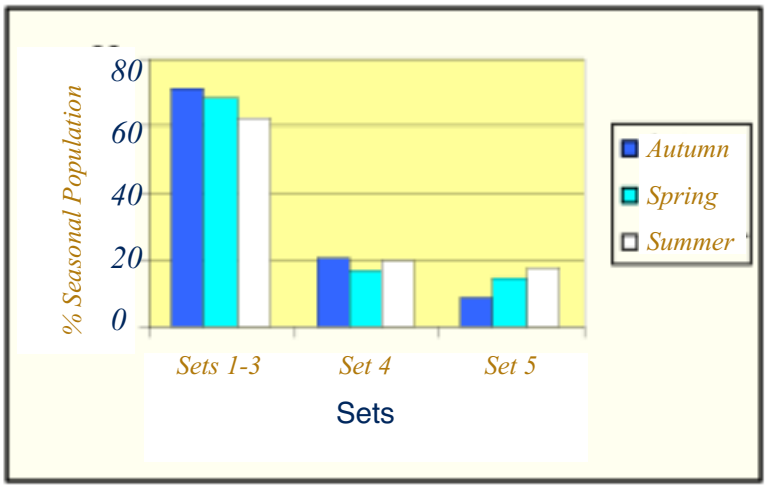


Allocation to sets and bands

Data on the composition, by season of birth, of sets/bands were derived from all Mathematics and English groupings in years 8-11. English groups consisted of two bands. Analysis revealed a higher proportion of the autumn-born (60.7%) were placed in band 1 (upper) compared to the proportion of summer-born pupils (54.3%). However, a pattern of greater complexity is indicated by Fig. 1 which shows the separate seasonal proportions contributed to the two bands by males and females.

It is apparent that a'birthdate' effect within the male population is absent, both summer-born and autumn-born pupils being equally represented in both bands. In contrast, there is a marked over-representation of summer-born females in band 2 (lower) compared to their autumn-born peers.

Mathematics groups are organised into five sets [1=Highest; 5=Lowest]. Fig. 2 shows that clear patterns emerge if counts in the upper three sets are summed and compared with counts in sets 4 and 5. A strong 'birthdate' effect is present, with autumn-born children contributing 71% of their seasonal population to sets 1-3 compared with 62% derived from the summer-born. Set 4 has similar proportions of pupils from each of the three seasons, but there appears to be an over-representation of summer-born children in set 5 (18% as compared to 8% of the autumn-born). The proportions contributed by each sex to the upper bands are nearly identical, with males providing 66% and females 68% of the pupils. However, there are marked differences between the sexes in terms of the magnitude of the season of birth effect (i.e. there was an interaction between season of birth and sex).



No over-representation of autumn-born males occurs in sets 1-3; their contribution is 65% - virtually identical to the proportions present of the summer-born sub-group. Summer-born males in set 5 are slightly over-represented, with 15% of them present compared to 10% of the autumn-born population. In contrast, the season of birth effect is much greater in the female sub-group. Just over 80% of autumn-born females were placed in sets 1-3, whilst only 58% of summer-born females were allocated to these higher sets. The younger female children were over-represented in set 4 (20%) compared to the autumn-born (13%), but the greatest differential occurred in set 5. In this set the proportion ofsummer-born females is 22%, over three times the proportion of autumn-born females present (6%). Both the effects of season of birth and the interaction of this effect with the sex variable were found to be statistically significant.[2]

The assessment of special educational needs (SEN)

Season of birth	*Males*	*Females*
Autumn	*12.4*	*7.3*
Spring	*22.0*	*11.0*
Summer	*18.6*	*14.3*

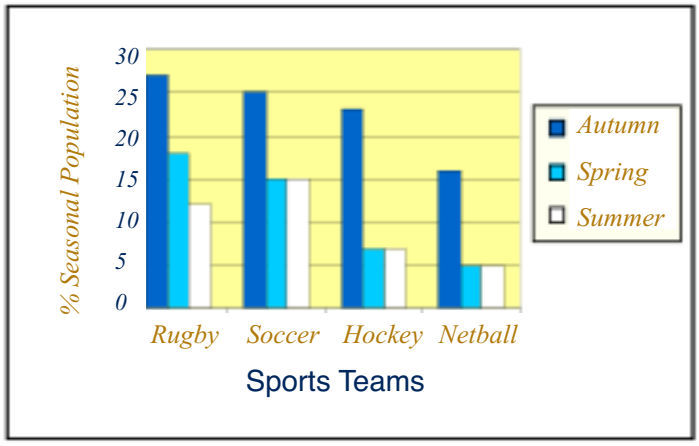
Table 1. Proportions of children with SEN as percentages of sex populations in each seasonal category.

Males (18%) were more likely to receive SEN support than females (11%). However, Table 1 indicates that a 'birthdate' effect is also present, which is stronger in the female population. Both season of birth and sex were found to have a statistically significant influence upon the likelihood of SEN classification.

School sports teams

Age differences within year groups significantly affect the likelihood of being selected for school teams in rugby, soccer, hockey and netball.[3] Fig. 3 shows there is over twice the percentage of autumn-born rugby players compared to those born in the summer season. A similar pattern appears in the soccer teams, although the influence of age is less marked. The birthdate effect is even greater in the girls' hockey and netball teams. Interestingly, similar birthdate effects have been found in professional teams.[4]

Fig. 3 Team players as a percentage of total seasonal male/female populations in years 9, 10 and 11.



Each of these games makes relatively high physical demands of players and hence birthdate effects may be linked to early physical advantage gained by being relatively older than competing peers. Initial successes may increase confidence and motivation and raise expectations for future achievement. It might be hypothesised that the seasonal composition of teams in sports that are less physically demanding, and do not involve direct contact between players, may be more equal. This is supported by data from school cricket teams in years 7, 8 and 10 where no significant season of birth effect was found. Again, this parallels findings from professional county cricket teams in England.

Friendship patterns

During consultations with students, it appeared that there might be a tendency for friendships to form between peers of similar age within a year cohort. This was tested with a survey using an opportunity sample of 84 year 7 pupils (43 females and 41 males). Each was asked to record their own month of birth and also the month of birth of their two closest (same sex) friends from the year group. Counts were made of friends with < 4 months difference in age, between 4 – 7 months difference, and those > 7 months apart.

The most striking finding was the difference between the friendship patterns of males and females. Whilst the age distribution of the boys' friends was very similar to that which would be expected by chance, the girls had a strong tendency to befriend peers who were of similar ages to themselves. This trend occurred in sub-groups born in each of the three seasons. Explanations of this may involve differences in the nature and functions of relationships between males as compared to between females. Additionally, girls in year 7 may also be attracted to peers who are undergoing similar physical maturational changes
– to some extent these will be related to age. Further consultations with pupils may be a fruitful source of evidence for developing an understanding of the friendship patterns observed. Qualitative research is also required to explore the possible effects of age similarities in friendships within seasonal sub-groups. Given that summer-birth has been linked with under-achievement at school, the impact of relationships between these younger children may be important, particularly for children who are also vulnerable for other reasons.

Consultations with students

An opportunity sample of 16 year 12s and a self-selected sample of 11 year 7 students were interviewed in small groups of mixed birth-month composition. They were asked if they had any recollections of the impact of age within their year cohorts upon schoolwork, experience of sport, and social relationships. Conversations were taped and their content analysed.

The year 7 children's recollections and general awareness of 'birthdate' effects appeared limited, but there were individual differences with some pupils making interesting observations. Comments were made about age influencing the difficulty of schoolwork and the composition of ability grouping. One girl thought that older pupils were particularly favoured in sport. However, in contrast, a group of boys thought their primary school had "given everyone a chance – even girls"! In terms of social relationships, a group of girls considered that differences in physical maturity related to age was influential. The same group thought that older children were "more confident and mature" and had the impression that older pupils tended to raise their hands more in class. Verbal bullying was mentioned by a summer-born girl who complained of having been referred to as "the baby" and of "mickey taking". One pupil considered that age influenced the composition of friendship groups. He became so interested in this that he and his friend raced around the school checking the birth months of members of their year group – reporting to me that they thought friendships were more likely to form between pupils of similar age!

As with Y7s, there were considerable individual differences between 6th formers in their recollections and awareness of the impact of age upon performance. Some students had retrospective insight into their own and their peers' experiences rather than being aware of age effects earlier in their school career. Others had no recollection of age effects, particularly at primary school. This was illustrated by comments about their primary schools such as "I didn't know other kids' ages", "I was not aware of age differences", and "I thought everyone was the same age". One August-born student observed that expectations were the same for all children at his primary school. In contrast, an autumn-born girl reflected "I knew I was older and wanted to do better".

Once in secondary school, students tended to become more aware of age differences but some did not think it made any difference. A year 12 commented that "effort and experience are more important than age". However, a summer-born female thought age influenced setting in secondary school although this "seemed to level out by year 10". One August-born male had attended a school in Yorkshire and had been erroneously placed in year 7 instead of year 8. He commented that he had "preferred it being older".

One of the 6th formers recalled an October-born friend who had excelled at sport at primary school; she also considered that there was "more encouragement for older kids". This level of sporting prowess was replicated by a girl, also October-born, within the school's sample. At primary she had won the "Best Sports Girl" award and was captain of a number of teams.

In contrast, three summer-born students commented negatively about school sport at secondary school, where the approach was viewed as "more competitive" than at primary school. One was "the smallest in the year group for a long time" and was "put off sport" by a number of unpleasant incidents. On one occasion he was "put on the bag" during rugby training. This required him to hold a large bag whilst an older (bigger) lad ran in to him and "knocked me flying". He never played rugby again, expressed hatred of contact sports and has now taken up golf! However, two other male students, both August-born, thought that their particular talents in certain sports more than compensated for any disadvantage due to their being amongst the youngest in the year cohort. One of the two boys was also very tall – again he identified this as a factor that might reduce 'birthdate' effects.

The issue of bullying arose, with two summer-born students reporting incidents. One female thought that "younger people are disadvantaged" and a number of students referred to the 17- to18-year age "gap". They noted the advantages linked to being older – particularly with respect to driving and its importance for mobility and socialising.

Conclusion

Statistical analysis of data from this comprehensive school has identified some disadvantages of being relatively younger than peers in a year cohort. Summer-born pupils may perform slightly less well than autumn-born children – both academically and in sporting activities. Such findings support those of research studies conducted at a national scale.[5] Interviews with students have provided insights into the perceptions and experiences of young people in relation to season of birth effects. The variety of views expressed reflects individual differences in awareness of relative age within a year cohort and its possible influence, and also the interaction of numerous variables that affect academic performance, sporting achievement, and social relationships. Students' accounts of their experiences provide a fertile source of ideas for further research.

Footnotes

[1] See Wilson (1999; 2000; 2001) for reviews of previous research into season of birth effects on academic and sporting achievement.

[2] Data on sets and SEN were analysed using log-linear modelling.

[3] Separate chi-squared significance tests were applied to the seasonal counts for each sports team.

[4] For example, see Dudink (1994).

[5] See, for example, Sharp (1995) or Alton and Massey (1998).

References

ALTON, A. and MASSEY, A. (1998). Date of Birth and Achievement in GCSE and GCE A-Level, *Educational Research*, **40**, 105-109.

DUDINK, A. (1994). Birth date and sporting success, *Nature*, **368**, 592.

SHARP, C. (1995) *School Entry and the Impact of Season of Birth on Attainment*. Slough: NFER.

WILSON, G. (1999). The birthdate effect in school sports teams, *European Journal of Physical Education*, **4**, 139-145.

WILSON, G. (2000). The effects of season of birth, sex and cognitive abilities on the assessment of special educational needs, *Educational Psychology*, **20**, 153-166.

WILSON, G. (2001). *The Influence of Season of Birth Upon Academic and Sporting Achievement at a Secondary School in England*. Unpublished PhD thesis, University of Birmingham.

Contacts:

Project co-ordinator: Jean Rudduck

Network co-ordinator: Nick Brown

Network secretary: Nichola Daily

Faculty of Education,
University of Cambridge,
Homerton Site,
Hills Road,
Cambridge
CB2 2PH

phone (+44)01223 742010
fax (+44) 01223 742013
e-mail nd241@cam.ac.uk

www.consultingpupils.co.uk