A health-related exercise project in primary schools

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The central approach of *Staying WELL's* health-related exercise project was that of applied learning through experience. Primary schoolchildren reported an increase in their physical activity, both inside and outside school; interestingly, the girls demonstrated the greatest increase in activity. Many children began exercising with other members of their family, indicating that they were influencing the activity of those with whom they lived.

Currently, the majority of health based physical education programmes are aimed at older children (14-16 years). This is to be condoned. Based on some of the findings of such studies, however, it is strongly argued that healthy lifestyle teaching ought to begin long before the child reaches secondary school. By the time children reach the end of their schooling there is a lack of interest in exercise and sport, whereas younger children are highly motivated and demonstrate an eagerness to learn. Perhaps more importantly, by the age of 11 a high percentage of children admit to having experimented with cigarettes (Welsh Heart Programme, 1986), and behaviours learned early in life are often resistant to change.

This study evaluates the changes in activity behaviour of primary schoolchildren as a result of an exercise-related health project.

School selection

The two schools selected for the project were situated very near to each other, in a middle-class area which was notably lacking in leisure or sports facilities. The major difference between the schools was that one was a county primary school, whereas the other was a Catholic church school. It was known that at least one member of staff (for academic or personal reasons) would be interested in such a project. Both these teachers taught 10-11 year olds.

Several discussions took place with the appropriate members of staff within the schools. The aim was to involve all concerned in the development of a health related physical education project. The variety of experience amongst those involved served to enhance the validity of the project design. The 'joint venture' approach provided a close working relationship, and promoted an atmosphere of teamwork as all concerned had an important role in the design, process and outcome of the project.

Aims of the project

There were several interlocking aims of the project:

1. To encourage and promote the teaching of health related physical education.
2. To promote awareness and increase knowledge of the physical, psychological, and social health benefits of exercise.
3. To encourage enjoyment in a wide variety of exercise and sports.
4. To promote applied learning through experimentation, intrinsic motivation, decision making, developing a sense of responsibility, and building confidence.
5. To involve not only primary schoolchildren but also to reach their parents.

Early developments

The project aimed to be as flexible as possible so as to fit into the existing individual school system and commitments, and individual teachers' approaches. In this way, each school demonstrated its uniqueness by allowing the teachers involved to build on their strengths and interests within the broad framework of exercise and health.

During the initial discussions the teachers were given a pack containing information which they could build into their own projects. The packs consisted of extensive teaching notes on exercise (health benefits, safety, etc.), how the body works, healthy eating and nutrition, detrimental effects of smoking, alcohol consumption, sleep and relaxation, and First Aid. All of these topics became part of the completed project. Additionally, several booklets and research reports, together with a collection of case studies of health-related exercise projects in secondary schools, from which ideas for primary school children could be extrapolated, were included.

Parental involvement

Assemblies were conducted by some of the children, who gave demonstrations of what they had been learning. Parents were welcome to attend these. At the beginning of the project, parents were sent a letter explaining its aims, in addition to a health pack containing booklets on the subjects which their children would be concentrating on in the classroom (exercise, smoking, healthy eating and so on). Furthermore, parents attending PTA meetings were given the opportunity to discuss the project.

The pupils' questionnaire

The major evaluation instrument was the pupils' questionnaire, which aimed to measure aspects of a healthy lifestyle. The underlying philosophy was that of health-related fitness rather than performance-related fitness. Comparisons in performance between children of the same age are likely to be meaningless, since tests have shown these to be dependant on maturational and motivational variables: Armstrong (1986) states that 'performance tests simply determine the obvious, and do no more than distinguish the mature child from the immature child'.

This approach is not denying participation in competitive sports, and that teaching and pursuing excellence should not be encouraged. It does recognise, however, that only a minority of children are able to pursue excellence, whereas the majority are able to learn what constitutes a healthy lifestyle and informatively to choose (especially in adult years) how they live.

Development of the questionnaire

Questions concerning three major health topics were incorporated into the questionnaire. These were activity, eating, and smoking behaviours. The major purposes of the instrument were:

1. To assess, as accurately as possible, present knowledge and behaviour.
2. To measure any change in knowledge and behaviour which may have resulted from the teaching of a comprehensive exercise and health project.

Experimental design

The classes of children in the two schools who were involved in the project formed the experimental group. Since no major differences emerged between the schools in the baseline data for either sex, the results were pooled to form one larger experimental group of 55 children (32 boys and 23 girls).

A control group of children who were not involved with the project was formed from two classes within the same schools. These children were the same age as those in the experimental group. There was no difference in academic achievement between the experimental and control groups, since the two classes in each year of both schools were not a result of 'streaming'; there were simply enough children to form two classes. Again, as the baseline data from both schools was not dissimilar one larger control group of 56 was formed (29 boys and 27 girls).

As the control group was within the same schools as the experimental group, there is the possibility of the methodological problem of 'overflow'. It cannot be assumed that the knowledge gained, or behavioural changes due to the teaching of the project, will be contained within the experimental group and not spread to other classes within the school. Although this may present some difficulty in interpreting the findings, the alternative approach of employing groups within different schools would be equally problematic as the schools would have to be matched for several factors (for example: social class, type and size of school, and type of area).

Monitoring activity and eating behaviours

The evaluation of the pupils' questionnaire was aimed at detecting overall knowledge and behaviour change, if any, within and between the groups under study. Personal monitoring of behaviour and performance changes was also conducted by the children, who kept daily records of their physical activity and of the foods which they ate. These daily diaries were completed each morning for the previous day. Moreover, the names of the foods which the children had eaten each day were entered into a computer package which calculated and illustrated, using bar charts, the amount of protein, carbohydrate, and fats which they should have consumed, with corresponding bars showing what they actually ate.

The results . . .

The complete project data is extensive. Therefore, only a few selected findings from the pupils' questionnaire can be discussed here.

Table 1. The percentage of pupils who belonged to a sports group or class before and after the project.

	Experimental		Control	
	Before	*After*	*Before*	*After*
Boys	72	71	52	71
Girls	52	85	52	57

Do you belong to a sports group or class either at school or outside school?

The pre- and post-project results for each of the four groups are given in Table 1. A greater percentage of boys in the experimental group already belonged to a sports group or class compared with the other three groups ($t=2.36$, $df=109$, $p<0.01$). Computation of the pre-post percentage change values indicates that, between the four groups, there was a highly significant increase of children reporting that they belonged to a sports group or class either in or outside school ($F, (3,107) = 4.44$, $p < 0.01$). However, there was no significant difference between the change shown by children in the experimental and control groups.

Table 2. The percentage of pupils who visited a sports centre or swimming baths at least twice a week, before and after the project.

	Experimental		Control	
	Before	*After*	*Before*	*After*
Boys	38	48	41	46
Girls	39	57	37	48

Do you use a local sports centre or swimming baths? How often do you go?

All children reported that they used a sports centre or swimming baths. As every child went swimming with the school once a week, the percentage of

those who reported using such facilities at least twice a week was employed in the analysis (see Table 2).

At the beginning of the project, there was no difference between the groups as to the percentage who reported using facilities at least twice a week. By the end of the project, however, a greater percentage of children in the experimental group reported an increased usage of the facilities compared with the control group ($t = 2.55$, $df = 109$, $p < 0.01$). Again, compared with the boys, the girls reported the most significant increase in local facility usage ($t = 2.84$, $df = 109$, $p < 0.01$).

Table 3. The percentage of pupils who visited sports facilities or swimming baths with members of their family before and after the project.

	Experimental		Control	
	Before	*After*	*Before*	*After*
Boys	50	66	41	64
Girls	38	62	30	41

Who do you go with – the family?

In addition to school visits, the majority of children reported that they went to local sports centres either with members of their family or friends (Tables 3 and 4). Prior to the project, more boys than girls reported attending sports centres or swimming baths with members of their family ($t = 2.10$, $df = 109$, $p < 0.05$). Following the project, all four groups reported that they attended leisure facilities with members of their family more often, although there were no sex differences or differences between the control and experimental groups.

Who do you go with – friends?

At the beginning of the study there was no difference between the groups as to the percentage of children who reported that they attended leisure facilities with their friends. However, at the end of the project the boys, compared with the girls, reported that they visited sports centres or swimming baths more often with their friends ($t = 5.60$, $df = 109$, $p < 0.001$). This sex difference was augmented since the girls in the experimental group

Table 4. The percentage of pupils who visited sports facilities or swimming baths with their friends before and after the project.

	Experimental		Control	
	Before	*After*	*Before*	*After*
Boys	56	74	52	71
Girls	53	38	52	59

reported that they attended sports facilities less often with their friends following the project ($t = 5.71$, $df = 109$, $p < 0.001$).

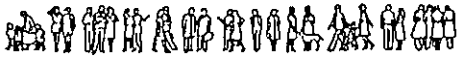
The girls and health-related fitness

The more striking aspects of the results concern girls and exercise or sports. These are:

1. More children in all four groups were joining exercise or sports groups – especially the girls in the experimental group.
2. More children from the experimental group had started to use local leisure facilities at least twice a week – especially girls.
3. During the project the girls demonstrated the greatest change in activity outside school.

It would appear that primary school girls, if given the opportunity, are just as motivated and keen to take part in exercise and sport as their male counterparts. The types of sports which interest boys and girls by age 10-11 may be different, but the myth that girls are less interested and motivated to take part in sport is erroneous, provided that they are given the opportunity and encouragement whilst they are still young.

Another important finding was that children in all four groups reported that they were attending leisure centres more often with members of their family. This indicates that the children's own increased physical activity was influencing the activity behaviour of the people with whom they lived.



Changes in the control group

Throughout the project, behaviour changes were also occurring within the control group, and therefore the reason for this needs to be explored. It may be that children in the experimental group, mixing with those in the control group both in and out of school, influenced their activity behaviour. An alternative explanation, however, is that as the project ran from January to July the appearance of warmer, lighter evenings was responsible for the change in behaviour of all four groups. If this was the case, however, why did the experimental groups, in particular the girls, repeatedly demonstrate the largest activity change?

Moreover, the activity grid (both pre- and post-project) specifically asked the children to say which activities they had engaged in, and how often, *over the past year.* This was intended to control, to a large extent, the seasonal variations, although admittedly children may be likely to report from more recent memory.

Some pupils' comments . . .

Having accepted that other factors may have impinged upon the outcome of the project, it was undoubtedly responsible for much of the increase in the children's activity. This is firmly supported by the children's reports and parental comments. At the end of the project, the children in the experimental group were asked to write a paragraph about the *Staying WELL* project. The majority were very favourable. Below are a few extracts:

. . . I enjoyed the project because it made me change my mind about food and exercise. I have just recently joined a running club at the sports centre with my friend. We go every Monday night to train, and run some nights after school.

. . . I now play badminton and during the project I had a six week course on tennis. Me, my mum and my brother are all trying to persuade my dad to give up smoking, he has cut down but he can't stop.

. . . The project was lots of fun. My dad has started to take the dog out for walks more often. My mum has also started to keep fit by going to lessons.

. . . I now go out and play football and other sports. I have cut down the chips and fatty foods because of the project.

. . . and some parents' comments

There was also an extremely favourable response from parents concerning the project and its contents:

. . . I am pleased that health lessons are being taught at junior school. Sean has really enjoyed this project, especially going to sports centres. I have learned quite a lot from the leaflets.

. . . My son has become more interested in riding his bike and playing football, and less interested in the television.

. . . We have helped Angela with her topic, and we are pleased that she is learning about the ill effects of smoking, and drinking too much, and what to do to stay well and healthy.

. . . Above all, the Staying WELL *project has encouraged Jennie to look after her health. She has persuaded her Dad to take her and her friend to the swimming baths. She now insists on wholemeal bread and skimmed milk.*

Conclusion

Projects with primary children appear to be an extremely good way of fostering links with their parents. If children can influence their parents' lifestyles, as this work suggests, an increase in primary school health education teaching may not only help to create a healthier generation of future adults, but may also help the present adult population to develop healthier lifestyles.

References

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