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# *Accès à une Vie Active*

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# Effects of a daily physical education programme on the attitude of elementary school pupils

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**Abstract** - A daily physical education programme (one 40 minute session) lasting for three years was implemented in 14 schools (kindergarten and primary levels). These schools were located in the whole territory of the French Community in Belgium. More than 3,500 children were involved in the experimental programme. Its implementation demanded a close cooperation between classroom teachers and physical education specialists. The evaluation of the effects of the daily physical education programme was completed on the basis of a multidimensional data collection. A sample of 675 children from the experimental schools and of 559 children from similar control schools were involved in the testing procedure and in the administration of the questionnaires.

This paper deals essentially with the children's attitudes in the comparison of experimental ( $n = 393$ ) and control ( $n = 352$ ) schools and the longitudinal aspect of the study. A progressive deterioration of the pupils' attitude towards school was evidenced. However, children from the experimental classes maintained a significantly more favourable attitude towards school and towards classroom and specialists teachers than pupils from control classes at each investigated level.

## I. INTRODUCTION

Pupils' attitudes and their modification are central concerns in most educational environments. Each school programme puts an emphasis on the objective of developing positive attitude towards the subject matter. In physical education, programmes aim at promoting physical activities when school age obligations are over. One of the most frequent objectives in educational programmes is to develop favourable or positive attitudes towards physical activities and sport practices.

As observed by Bloom (1979), attitudes towards school in general or towards a specific subject matter are significantly related to school achievement. In other terms, pupils tend to develop a positive attitude towards school when they are successful in school activities.

Most daily physical education programmes are concerned with health objectives (Dwyer, Coonan, Leitch, Hetzel, & Baghurst, 1983; Lavallée, 1984; Naul, Pauer & Rychtecky, 1990; Shephard, Jequier, Lavallée, Labarre & Rapic, 1980) and to date positive effects have been observed on pupils' attitudes (Pollatschek, Renfrew & Queen, 1986) or on perceived competence (Sarlin, 1992).

A multidimensional approach was used to assess the daily physical education project in Belgium. A part of this assessment dealt with attitudes, perceptions and lifestyle items. The purpose of this paper is to analyse the effects of a daily physical education programme on children's' attitudes towards school.

## II. METHODS AND PROCEDURES

### 1. The setting: the daily physical education school project

Fourteen kindergarten elementary schools were selected as a representative sample of this school level in public schools in the French speaking area in Belgium. Rural vs urban and small vs large schools were among the criteria used to decide upon the schools to be included in the experimental programme.

This programme was progressively implemented over a three-year period. It started in 1990-91 with kindergarten and grade 1 and 2 classes, continued in 1991-92 with the introduction of grades 3 and 4, and in 92-93 with grades 5 and 6. In each school, all classes of the selected grades were included in the daily physical activities.

### 2. The sample for collecting data

One school of each in the seven districts of the French speaking area of Belgium was selected in the data collection procedures. Control and experimental schools selected under the same criteria were put into pairs.

A multidimensional data collection was completed: (1) physical fitness and motor skill tests; (2) questionnaires assessing the attitude toward school and physical activities; (3) leisure time and out-of-school activities reports; (4)

questionnaires appraising the relationships between classroom teachers and physical education specialists and their perception of the content and the pedagogical aspects of the experimental programme; (5) systematic observation of teacher and pupil behaviours during physical education lessons. Short questionnaires were administered immediately after the lesson.

This paper deals essentially with the attitudes towards school. The attitude questionnaire was developed and validated in previous studies dealing with elementary school pupils not involved in this study (Delfosse, Cloes, & Piéron, 1992). The main objective was to identify the children's attitudes towards school and the main reasons justifying or explaining their attitude.

Owing to the age of children involved in the study, most questions were closed questions presented as drawings of school situations.

Justifications of attitudes were presented as short sentences. The understanding of questions was also checked in a former study (Delfosse, Cloes, & Piéron, 1992). Four dimensions were considered:

- (1) the quality of social relationship with other pupils and with teacher;
- (2) the enjoyment during class activities and during break periods;
- (3) the perception of school competencies;
- (4) the interest towards school activities.

### 3. Administration of questionnaires

Questionnaires were administered the same day as the fitness and motor skills testing at the beginning and at the end of the school year. Children were guaranteed of the confidentiality and the non evaluative purpose of the questionnaires. An accurate protocol was maintained by:

- \* having the children reading the questions at the same time (understanding check);
- \* having the children's attention maintained during all the questioning procedure;
- \* having a control of the completion of the questionnaire.

### 4. Statistical analysis

The  $\chi^2$  test was applied to process data.

## III. RESULTS AND DISCUSSION

Results are presented according to the following sequence:

1. A comparison of experimental and control classes level by level;
2. The analysis of the evolution during the elementary school period;

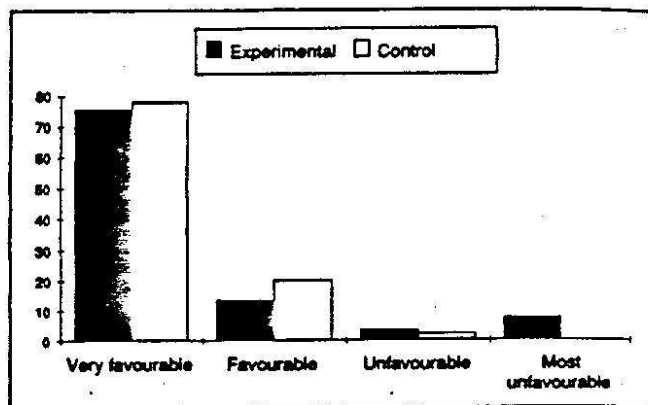


Figure 1 - Comparison of pupils' attitude in experimental and control groups (grade 2)

### 3. A comparison according to gender.

#### 1. Comparison of experimental and control classes

*a. Complete sample.* At the beginning as well as the end of the school year, experimental and control classes differed significantly in the children's attitude towards school. The difference is particularly evident when looking at the very favourable attitudes: 53 vs 44% at the beginning of the school year and 46 vs 39% at the end. Most unfavourable attitudes were similar in both groups. However, unfavourable attitudes were higher in the control group. The evolution of attitudes towards school seems to be characterized by a progressive deterioration during the school year.

*b. Grade 2 pupils.* In this grade level, attitudes towards school were highly favourable and did not differ between groups ( $p = .742$ ). It could be hypothesized that there is no strong contrast in pupils of this age and that there is no apparent influence of the daily physical education programme (Figure 1).

There was no significant difference in the reasons to justify a favourable attitude towards school. The main reason advanced was a favourable opinion of pupils towards the teacher. This opinion showed a strong trend observed in each group and sub-group to rise during the school year. From 30 to 50% of grade 2 pupils expressed this favourable opinion towards the teacher. The attraction of peers ranked second in the reasons listed. It was slightly higher (but not significant) in boys than in girls. Interest towards subject matter taught was also at a relatively high level.

*c. Grade 4 pupils.* Significant differences were observed between experimental and control classes at the beginning ( $\chi^2 = 7,85$ ;  $p = 0,05$ ) and at the end of the school year ( $\chi^2 = 11,38$ ;  $p = 0,01$ ). The very favourable attitudes were strongest in the experimental group (50.3 vs 32.2%, at the end of

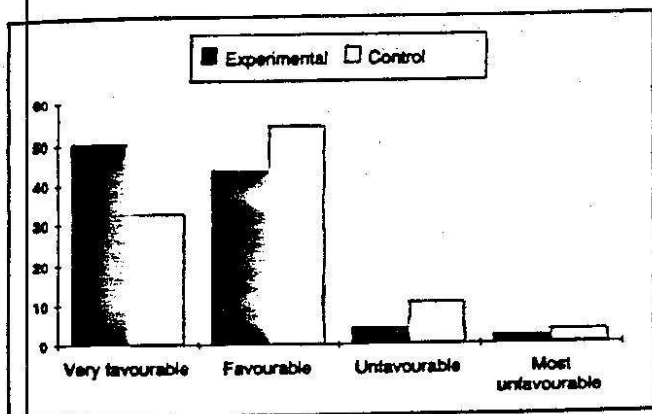


Figure 2 - Comparison of pupils' attitude in experimental and control groups (grade 4)

the school year - Figure 2). The evolution brought a strengthening of the differences observed at the start of the year. No group escaped from the effect of time passing. The detrimental effect appeared to be twice as high in control than in the experimental group. The difference was particularly striking when the comparison dealt with boys in both groups. The percentage of very favourable attitudes dropped from 44 to 23% in a six month period. During the same period, boys from the experimental classes showed a lower decrease amounting to 8%. This detrimental effect was less acute and not significant in girls. The shift from the very favourable to favourable attitudes showed large similarities in both groups.

The striking deterioration of attitudes towards school in absence of the daily physical education programme should be noted. In general, the daily physical education programme seemed to be beneficial to both groups. However its effects were more apparent in specific groups of pupils, especially those inclined to disaffection towards school.

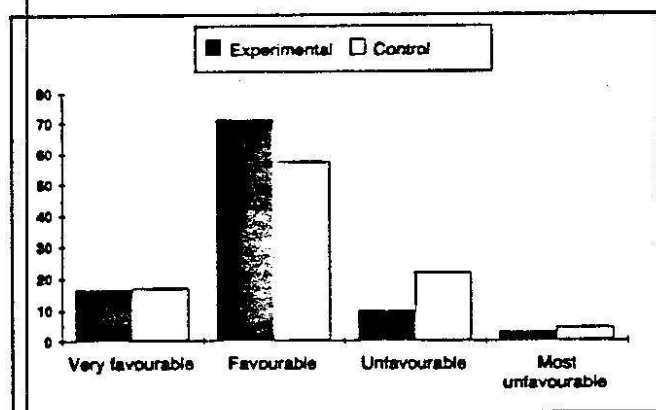


Figure 3 - Comparison of pupils' attitude in experimental and control groups (grade 6)

In grade 4, experimental and control groups changed in the same direction when justifying their opinion. The attraction by peers became more evident and the opinion on teachers dropped dramatically. In this grade, all sub-groups chose the teacher as the reason to express favourable attitude at a level higher than 20%. The interest towards subject matter remained stable.

*d. Grade 6 pupils.* These children were entering the daily physical education programme for their first year, the comparison between experimental and control classes was used to check the similarity of both populations. In terms of the attitudes towards school as well as physical fitness and motor abilities, the two groups did not differ significantly (Piéron, Cloes, Delfosse & Ledent, 1993). At the end of the school year, control and experimental groups differed significantly ( $\chi^2 = 28,15$ ;  $p = 0,05$  - Figure 3).

The difference between in the unfavourable attitudes remaining stable in the experimental group (12.6% - 12.7%) and doubling in the control group (14.5% - 26.1%). It could be hypothesized that children were bored by the school activities rather than in blatant opposition to school (unfavourable attitudes were always greater than most unfavourable attitudes). A new element, like the daily physical education, or a new type of activity in school life, could raise a momentary interest in children.

The comparison of boys' attitudes evidenced a specific element in the unfavourable attitudes. During the school year, the proportion of favourable attitudes was affected by two shifts, a downward trend issuing from a reduction of the very favourable attitudes and an upward move from the most unfavourable to the unfavourable attitudes. This observation tends to confirm above mentioned interpretations that:

- \* the daily physical education programme had a «repairing» rather than «constructing» effect;
- \* some specific age or gender groups were more sensible than others to the daily physical education programme.

In grade 6, the comparison of experimental and control groups was statistically significant ( $\chi^2 = 15,3$ ;  $p = .05$ ). In control classes, the attraction by peers has continued to increase becoming widely predominant, amounting to almost 65% of answer. The high ranking of the category «enjoyment» confirmed the trend already identified in grade 4.

Some differences between boys and girls are worthy of attention:

- \* Attraction by peers was chosen by 39% of pupils from experimental classes and 71% in control classes;
- \* Enjoyment reached its peak at 20%;
- \* The interest towards subject matter was stable in girls while decreasing in boys.

In younger children personal characteristics of the teacher seemed to exert a higher influence than those of peers. Comparisons of the three grade levels led us to observe that:

- (1) the influence of peers was becoming more and more predominant as the reason to be keen on going to school. This trend was observed not only from grade to grade but within a short time span, like the school year;
- (2) the interest towards the relationship with teachers showed a marked trend to decrease after grade 4;
- (3) the interest towards subject matter taught showed a peak during grade 4.

#### Comparison according to grade levels

The attitudes towards school deteriorated dramatically from grade 2 to grade 6 ( $\chi^2 = 164,6$ ;  $p = 0,0001$  in November -  $\chi^2 = 179,1$ ;  $p = 0,0001$  in May). Changes were noticeable during the same school year (Figure 4).

When grouping categories under general headings of favourable and unfavourable attitudes, the trend was clear: favourable attitudes dropped sharply and unfavourable attitudes rose. Children, in experimental classes as well as in control classes, seemed to depreciate school with the passing of time. The six-month period between the administration of questionnaires was sufficient to show the deterioration.

The evolution of attitudes during the school year was characterized by an acceleration of the decline trend of favourable attitudes from grade 2 to grade 6. For example, the very favourable attitudes amounted to 79% in the beginning of grade 2 and dropped to 17% at the end of grade 6. Several hypotheses linked to children's age and to the duration of schooling were set forth to explain the change of attitudes.

The convergence between pupils' interests and school responses is less and less met as schooling proceeds. During the first school years, children were starting to practise various types of learning tasks. Progress was usually high during the first steps of the learning curves. In physical education lessons, Cloes, Delfosse, Ledent & Piéron (1994) found that children perceived higher learning gains in the lower grades than in the higher grades.

Many activities presented a type of a novelty to young children. In the highest grades, the decreasing of the variety of activities proposed to pupils was probably an additional factor to decrease pupils' interest toward school.

It is worth considering the incidence of the lack of success (or frequent failures) in many pupils from higher grades. School is not transmitting positive values to a large number of children attending higher grades. For different reasons, especially those linked to difficulties of cultural origin, a

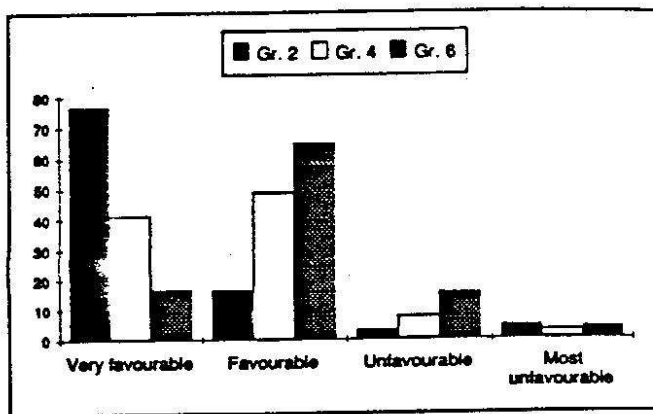


Figure 4 - Comparison of pupils' attitude according to grade level

large proportion of sixth graders has failed to pass regularly from grade to grade.

It could be advanced that these three hypotheses combined and had some additional effect.

#### d. Comparison according to gender

Differences between girls and boys were highly significant: at the beginning of school year ( $\chi^2 = 15,1$ ;  $p = .002$ ) and at the end ( $\chi^2 = 17,6$ ;  $p = .001$  - Figure 5).

At every moment, girls showed a higher interest towards school, higher favourable attitudes and lower unfavourable attitudes. The differences were striking when taking into account the overall unfavourable attitudes (almost twice as high in boys as in girls) and the most unfavourable attitudes, almost inexistent in girls (1.7%) but close to 5% in boys. Two trends should be noted. In boys, most unfavourable attitudes were continuously rising, while remaining stable in girls. The decline of very favourable attitudes was of less amplitude in girls than in boys.

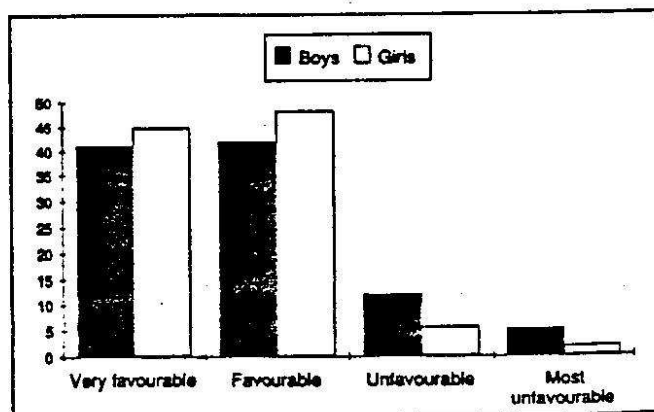


Figure 5 - Comparison of pupils' attitude according to gender

#### IV. CONCLUSIONS

A progressive deterioration of the pupils' attitude towards school was observed. However, children from the experimental classes maintained a significantly more favourable attitude towards school and towards classroom and specialist teachers than pupils from control classes at each investigated level. Attitudes were more favourable in girls than in boys.

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