

Achieving health and educational goals through schools—a study of the importance of the school climate and the students' satisfaction with school

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Abstract

Over the past two decades many studies have examined the effectiveness of classroom teaching in influencing present and future health and health behaviours. Few of these studies have examined the importance of the students' satisfaction with school as a variable which explains effect, and in particular what determines their satisfaction with school. Based on data from the 'Health Behaviour in School-aged Children Survey', this paper presents a review of relevant literature and examines how the students' perception of school climate relates to their satisfaction with school. Data from 11-, 13- and 15-year-old students in Finland, Latvia, Norway and Slovakia are used. In all countries, the older students tend to be significantly less satisfied with school than the younger ones. The students in Latvia and Norway seem to be more satisfied with school than students in the two other countries. The most important predictors of students' satisfaction with school are students' feeling that they are treated fairly, that they feel safe and that they believe that teachers are supportive. The findings suggest that, in school health promotion interventions, attention needs not only to be given to classroom teaching materials but also to the quality of a student's

school experience and the quality of the relationship with the teachers.

Introduction

Students' perceptions of and experiences in the school influence the development of their self-esteem, self-perception and health behaviours. In turn, these issues affect the students' present and future health and well-being (Lewin, 1951; Coleman, 1979; Schultz *et al.*, 1987; Bond and Compas, 1989; Garralda, 1992; Resnick *et al.*, 1993; Rudd and Walsh, 1993; Hurrelmann *et al.*, 1995). Although the school is not the only formative influence on children and adolescents, it provides direct access to young people for educational programs and is in itself an environment which is amenable to intervention—with or without reference to other major influences on health status such as families, peers and the media.

The school can be both a risk and a resource for the development of students' health behaviours and general health. The risk is most obvious when examining students with negative perceptions of school. Those students who dislike school are also those most likely to be failing academically, and those at greatest risk of adopting unhealthy behaviours, exhibiting psychosomatic problems and experiencing reduced quality of life (Epstein, 1981a; Calabrese, 1987a; Kasen *et al.*, 1990; Nordlohne and Hurrelmann, 1990; Jessor, 1991; Nutbeam and Aarö, 1991; Nutbeam *et al.*, 1993). Students who are not very satisfied with school are more likely to be alienated from school and to find arenas where they can rebel against the authority of school. In this search they often turn to

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groups of peers exploring problem behaviours like smoking and drinking (Perry *et al.*, 1993).

Previous research has also illustrated the relationship between students' perception of satisfaction with school and their academic achievement. Students having a positive view of the school and classroom climate are better motivated and achieve more according to their ability level than those who are not very satisfied with school (Rutter *et al.*, 1979; Epstein, 1981a; Mortimore *et al.*, 1988; Bulcock *et al.*, 1991; Fisher and Fraser, 1991; Resnick *et al.*, 1993; Fraser, 1994; Mortimore, 1995; Voelkl, 1995). In this regard, increasing attention has been given to the impact of the school and classroom 'climate' on academic outcomes for students (Fraser, 1986, 1994).

In the past, much health intervention research has focused rather narrowly on the development of effective classroom teaching which has targeted present and future health and health behaviours such as smoking and nutrition (Murray *et al.*, 1989; Peters and Paulussen, 1994). Progressively, this research has identified that effective school health promotion is accomplished through both teaching activities focusing on knowledge and skills related to health promoting behaviour, and by creating a health supportive social and physical school environment (Schultz *et al.*, 1987; Rudd and Walsh, 1993; Hurrelmann *et al.*, 1995).

This approach fits with the working strategies in the European and Australian networks of Health Promoting Schools, which aim to promote health and well-being for all in school (Hurrelmann *et al.*, 1995; Rowling, 1996; Tones, 1996). Health education remains important, but is supplemented by other actions aimed at developing a health supportive school environment. An incentive for them to do so is that previous studies suggest that students who enjoy school are less likely to engage in health compromising behaviours and experience fewer health problems (Jessor, 1991; Nutbeam and Aarö, 1991; Perry *et al.*, 1993).

However, such comprehensive school health programs demand curriculum time and school resources. Schools have competing priorities for these resources, and their core business is mainly

to achieve academic success and social integration among students, and maintaining commitment and discipline among students. Finding ways of aligning the achievement of health goals with this core business of schools is critical to future success.

Research examining those features of schools which determine students' satisfaction with school has the potential to meet both needs. This paper provides a review of the literature relevant to this issue, and reports on one study which aimed to identify which aspects of the school climate are most influential in determining student satisfaction with school and to explain the basis for these relationships. Modifying the characteristics of schools to improve students' satisfaction with school may thus offer a potent form of intervention which can fulfil both health and education objectives.

Satisfaction with school

Conceptually, students' satisfaction with school is linked to the construct of quality of life (Abbey and Andrews, 1986), reflecting the affective component of this construct indicated by immediate emotional responses such as happiness, enjoyment of school and a sense of well-being at school. Such responses to experiences at school contribute to the global quality of life among young people and are therefore vital to healthy development (Millstein *et al.*, 1993).

Determinants of students' satisfaction with school

Research focusing on the determinants of students' satisfaction with school is scarce. This concept has mainly been dealt with as a predictor of academic achievement.

In general, students' satisfaction with school may be regarded as being mainly dependent on personal characteristics such as sociability and positive values regarding academic achievement (Covington and Beery, 1976), and social characteristics of family, peer and school environments (Perry *et al.*, 1993). As students spend a major part of their active time in school, the school environment may be considered as the key arena

for interventions aimed at enhancing well-being at school. In order to develop effective interventions, more knowledge is needed about how satisfaction with school is associated with various features of the school environment.

Previous studies suggest that characteristics associated with a positive view of school are student participation in and responsibility for the school life, and a good relationship with teachers (Epstein, 1981b; Good and Brophy, 1986; Kottkamp and Mulhern, 1987; Fraser *et al.*, 1988; Sharp and Thompson, 1992; Millstein *et al.*, 1993; Cabello and Terrel, 1994; Voelkl, 1995). These findings correspond to findings concerning job satisfaction among adults (Batista-Fouget *et al.*, 1990; Karasek, 1990; Dwyer and Ganster, 1991), and suggest that experiences from research on the adult work environment are useful in developing more comprehensive and theoretically based studies on school environment (Rudd and Walsh, 1993). Although the student role is different from the employee role (in the sense of lower autonomy and few possibilities of changing work site, e.g. school), it is possible to utilize theoretical and empirical knowledge about adults' job satisfaction to improve knowledge about students' satisfaction with school.

In this type of research, considerable emphasis is given to the way in which the occupants perceive or experience the characteristics of the environment (Tagiuri, 1968). Karasek and Theorell (1990) have developed a comprehensive theoretical model of the psychosocial work environment for adults, demonstrating that (1) a relatively high degree of autonomy and control, (2) reasonable level of demands, and (3) good social support from management and colleagues are positively associated with job satisfaction. Similar findings have also been reported by others (Herzberg *et al.*, 1959; Cassel, 1976; Locke, 1976; Cox, 1978; Cooper and Davidson, 1987; Sutherland and Cooper, 1988; Batista-Fouget *et al.*, 1990; Efraty and Sirgy, 1990).

The students' notion of autonomy and control is formed by regulations and framework for the activities in school, and the responsibilities they are given. Each school has a set of rules guiding

the behaviour of the students (and teachers) and school activities. The fairness and relevance of these regulations, and the extent to which the students have been allowed to participate in their development and interpretation, are likely to influence the way they adjust to the school environment and, consequently, how they feel about school. Efficient and caring classrooms have discipline and structure (Rutter, 1980). Lack of order can result in insecurity among students and harassment in the classroom. By keeping classroom management in a non-authoritarian mode, the students can experience that regulation of behaviour is also a way to care for them as individuals and the class as a group (Kottkamp and Mulhern, 1987; Lunenburg and Schmidt, 1989).

The job demands placed on students largely concern evaluating academic performance. In their managerial position teachers play a vital role in making clear what the demands are, as well as how the student is expected to fulfil these demands. If the student believes that the teacher expects more than he/she feels capable of achieving, they are likely to experience stress (Stephoe, 1991; Perry *et al.*, 1993). Increased levels of stress may in turn result in a lower degree of satisfaction with school (Mackay and Cox, 1978).

Good relations with and social support from fellow students (colleagues) and the teachers (managers) may reduce experiences of stress as a consequence of discrepancies between needs, expectations and resources (Cohen and Syme, 1985; Steptoe, 1991). This might contribute to positive satisfaction with school despite poor academic ability because the student feels valued as an individual, and thus can maintain positive self-worth and self-esteem (Covington and Beery, 1976; Calabrese, 1987a). Student's relations with the teachers might be the most influential element in this association. If the students feel that they are cared for and are allowed to participate actively in discussions and planning of the classroom program, poor academic performance may be a less important factor influencing negative perceptions of school (Calabrese, 1987b).

As with the adults, it is also important to the

students to be accepted among fellows (colleagues). Positive bonds between the members of a class where the students are caring for each other may positively influence the students' perception of feeling safe in the school environment. Alternatively, experiences of being bullied or being excluded from activities or social relations in recess may contribute to negative perceptions of school as well as have a direct impact on health and learning.

As the task demands tend to increase with the age of the student, it is likely that a higher number of older students than younger students will perceive a discrepancy between expectations and their abilities to fulfil them. Thus, more older students probably experience stress reactions and lower satisfaction with school than do younger students. The general developmental process also makes students more reflective and critical concerning what happens in school. In addition, their familiarity with the school and its demands may lead to boredom. It is thus reasonable to assume that the older students exhibit lower satisfaction with school than the younger do. Previous studies also suggest that girls experience a higher level of satisfaction with school than boys (Bulcock *et al.*, 1991; Beal, 1994).

From previous research we also know that differences in culture and political systems are important to the students' perception of the school and their satisfaction with school (Hirsch, 1994). Traditionally, the main focus of the Eastern European school system has been the acquisition of knowledge delivered in relatively authoritarian circumstances, whereas the Western European system is typically more concerned with development of the individual and accordingly utilizes student involvement in teaching approaches (Hirsch, 1994). As student involvement is reckoned to promote students' satisfaction with school (Epstein, 1981a; Calabrese, 1987a; Schultz *et al.*, 1987; Rudd and Walsh, 1993; Voelkl, 1995), lower satisfaction with school may be expected among the students in Eastern Europe than in Northern and Western Europe. In the 1990s the political situation in the east has, however, changed the focus of the school and made it more similar to that of the west.

However, when the survey described below was conducted in 1993, the changes were less likely to have had an influence on the daily life of students.

Focus

Based on the above review, two research questions were addressed using data from surveys of 11-, 13- and 15 year-old students in Finland, Latvia, Norway and Slovakia, i.e.

- (1) What are the age, gender and national differences in students' satisfaction with school?
- (2) How do the students' perception of school climate relate to their satisfaction with school?

It is argued that clarification of these issues will indicate ways in which the school climate and classroom practice can be modified to achieve improved health and educational outcomes.

Methods

WHO survey 'Health Behaviour among School-aged Children' (HBSC)

The data presented come from the WHO international survey HBSC (Aarö *et al.*, 1986; Smith *et al.*, 1992; Wold *et al.*, 1994; King *et al.*, 1996). The survey aims to improve understanding of young people's health behaviours, lifestyle and perceptions of health. Questionnaire surveys are conducted in participating countries every fourth year among school children aged 11, 13 and 15 years according to a standard protocol (Wold *et al.*, 1994). In addition to core questions concerning health behaviours and essential demographic information included in every study, each survey has a specific focus related to predictors of health behaviours. The first survey was conducted in 1983–84 in four countries, and the present and fourth survey was carried out in 1993–94 in 25 countries and regions. The special focus of this survey was the students' perceptions of school and classroom climate.

Sample

This paper is based on data from Finland, Latvia, Norway and Slovakia. These four countries repres-

Table I. Mean age, number of students and response rate for the samples in Finland, Latvia, Norway and Slovakia reported by age and gender (HBSC 1993/94)

Age	Finland				Latvia				Norway				Slovakia			
	11.8	13.8	15.8	Total	11.8	13.7	15.7	Total	11.5	13.5	15.5	Total	11.8	13.7	15.6	Total
Boys	869	631	576	2076	637	585	472	1694	798	868	837	2503	551	584	541	1676
Girls	845	648	618	2111	670	663	791	1454	816	833	800	2449	581	656	504	1741
Total	1714	1279	1194	4187	1307	1248	1263	3818	1614	1701	1637	4952	1132	1240	1045	3417
Response rate	81.2%				89.9%				81.5%				89.6%			

ent two different parts of Europe; Finland and Norway in the north, and Latvia and Slovakia in the east.

A standard cluster sampling procedure is followed by every country/region (Wold *et al.*, 1994). The samples are nationally representative and the sampling unit is the school class or the school when school class information is not available. Ninety percent of the students fall between half a year of the mean ages. The mean ages for the four countries, the numbers of students in each age group and the total response rates are presented in Table I. The two main sources for non-response are school/class teacher rejection and absenteeism on the day the survey was conducted. Absent students were not followed up. Cases that did not meet the age criteria or had more than 25% missing on key variables were excluded.

Data collection

The survey was carried out in Finland during March–May 1994, in Latvia and Slovakia during November–December 1993 and in Norway during December 1993. The data were collected in the classroom by using a self completion questionnaire and a procedure ensuring confidentiality and anonymity.

Questionnaire and data analysis

The questionnaire for the 1993–94 survey was developed in four international meetings. It has been extensively piloted in three phases in a total of 13 countries. The 24 participating countries/regions translated the final international version of the questionnaire into their native language(s) and piloted the national questionnaire before con-

ducting the survey. To ensure that the translation gives the correct connotations and concepts, an independent retranslation back to English has been done.

Students' satisfaction with school indicates the personal outcome dimension of the proposed model of school climate and was measured by a sum score of three variables focusing on students' evaluation of how satisfied they are with school ('I like school', 'School is a nice place to be' and 'Going to school is boring'). The first of these variables had four response keys ('like it a lot', 'like it a bit', 'not very much' and 'not at all'), whereas the two others had five keys ('strongly agree', 'agree', 'neither/nor', 'disagree' and 'strongly disagree'). The latter ones have been recoded into four response keys in accordance with the distribution and concept of the keys; the categories 'neither/nor' and 'disagree' were collapsed and the others kept in their original form. These variables were added up to produce a continuous sum score of 'satisfaction with school' ranging from 0 to 9 where 0 is the lowest satisfaction and 9 the highest. The internal consistency analyses for this sum score yielded a Cronbach's α of 0.81 for Finland, 0.58 for Latvia, 0.69 for Norway and 0.64 for Slovakia. For illustrative purposes the sum score was split into three categories: low (0–3), middle (4–6) and high (7–9) satisfaction with school.

Students' perceptions of the school climate are indicated by how they perceive characteristics of the processes involved in the organizational and relational dimensions, and was measured by 16 variables. Factor analyses of all the variables

Table II. Cronbach's α for sum scores of students' perception of their school climate in the total sample of 11, 13 and 15 year olds in Finland, Latvia, Norway and Slovakia (HBSC • 1993/94)

Factors	Finland	Latvia	Norway	Slovakia
Justice in school	0.68	0.31	0.64	0.50
Disturbances in class	0.81	0.65	0.79	0.67
Teacher support	0.50	0.61	0.62	0.73
Student support	0.68	0.63	0.68	0.69

developed to be part of conceptual scales resulted in similar factor solutions showing four factors in each country. The four factors correspond to the dimensions of school climate proposed above, two factors reflecting characteristics of the organizational processes and two factors reflecting characteristics of relationships in the organization.

The items in each factor were added up to give sum scores and their Cronbach's α are presented in Table II. The first sum score indicates perceptions of the organizational processes of making and exertion of rules, and is named 'Justice in school'. It consists of the following four variables: 'Pupils participate in setting rules', 'The rules are too strict', 'The rules are fair' and 'Teachers treat pupils fairly'.

The second sum score indicating organizational processes is named 'Disturbances in class' and consists of the variables: 'Noise and disturbance in class', 'Teachers frequently ask pupils to be quiet' and 'Pupils are in general quiet'.

The two sum scores reflecting relationships may be labelled 'Teacher support' and 'Student support', respectively. The first indicates leadership support and consists of two variables: 'Teachers give pupils help when needed' and 'Teachers show interest in the pupils'. The second support factor, colleague or 'Student support', consists of the variables: 'Students enjoy being together', 'Students are kind and helpful' and 'Students accept each other'.

The students' perceptions of unreasonable job demands were measured by a single item: 'My teachers expect too much of me at school'. In addition, safety in the school environment, bullying

and loneliness during breaks were surveyed through a single item each: 'Feel safe at school', 'Have been bullied' and 'Feel alone at school'. The four single items were not included in the factor analysis as they were regarded as independent measures not part of any scale constructs.

These eight predictors of four sum scores and four single items were then used to explain the variance of students' satisfaction with school through stepwise multiple linear regression. For this purpose the continuous sum score of satisfaction with school was applied. All the analyses were undertaken using SPSS for Windows (version 6.0).

Validity and reliability

The development of the variables was based upon previous research, and should therefore capture important and valid dimensions of students' school climate. The internal consistency of the sum scores is evaluated to be satisfactory. Only 'Justice in school' in Latvia had a very low Cronbach's α . However, in order to maintain consistency in the analysis approaches for all the four countries, it was decided to keep the sum score as it was.

The general reliability of the data was also tested using two approaches. Firstly, a test-retest study of selected items was conducted on a sample of 108 Norwegian students aged 13 and 15 within a 10 day interval. Two of the sum scores in the present data were tested using intraclass correlation which compute the variance between test and retest (Shrout and Fleiss, 1979). Some variance between test and retest was to be expected, since the variables measured school climate relations which may be influenced by changes in the day to day situation. The results suggest that the intraclass correlation of the sum scores indicating 'Teacher support' and 'Student support' are 0.61 and 0.70, respectively. Because of the expected contextual variation it is reasonable to evaluate the total data as reliable.

Secondly, to control for systematic effects of the cluster sampling of classes the between-class variance was measured by an intraclass correlation between the respondents belonging to the different classes and their perception of the dependent

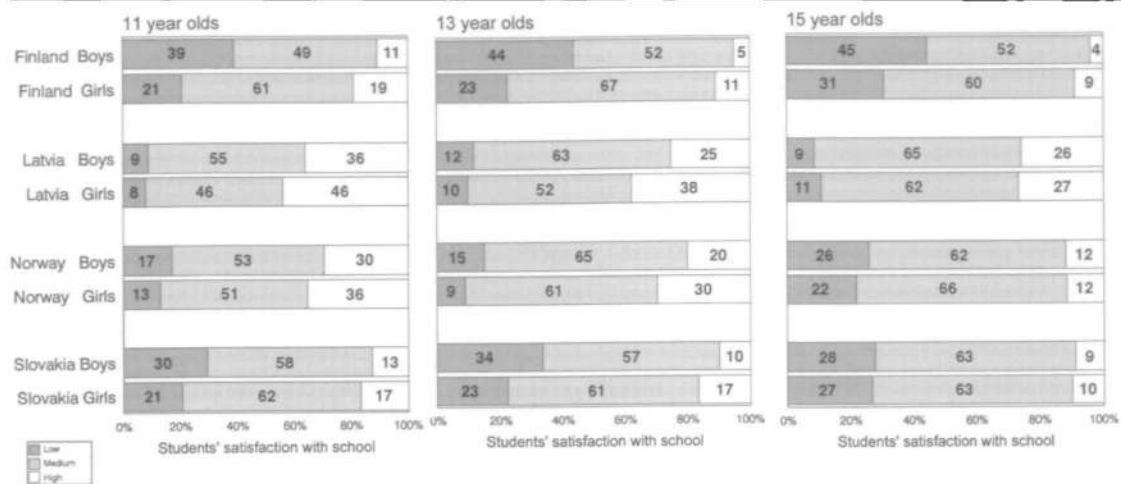


Fig. 1. Percentage of students reporting low, medium and high level of satisfaction with school among 11-, 13- and 15-year-old boys and girls in Finland, Latvia, Norway and Slovakia (HBSC 1993/94).

variable; satisfaction with school (Rowan *et al.*, 1991; Moore, 1995; Kallestad *et al.*, 1998). It was only possible to use this test on the Norwegian data as these were the only data containing class membership information. The intraclass correlation was 0.14 which means that 14% of the variance in the data may be explained by characteristics of being a student in a particular class or that 86% of the variance cannot be explained by class and school membership. The interest of the paper is not to study the impact of class and school characteristics. Some variance is naturally related to the cluster of class as some of the climate perceptions depend on the relationships in the class. The systematic variance between classes is not so high that multilevel approaches are required to do sound statistical analysis and justifies the use of ordinary multiple regression analysis.

Results

Figure 1 presents the categorized sum score of the students' satisfaction with school by age and gender for the four countries. Those who report the highest level of satisfaction with school vary from 10.2% in Finland and 12.7% in Slovakia, to 23% in Norway and up to 33.4% in Latvia. These percentages are the mean of the numbers given in Figure 1.

In all countries the proportion of students who are not very satisfied with school are highest among the oldest students. This pattern is strongly seen in all the countries ($P \leq 0.001$) except for the Slovakian 15-year-old boys who report more positively than the 13 year olds. In Norway the 13-year-old girls report more satisfaction with school than the 11 year olds. In all the countries the proportion of 11- and 13-year-old boys who seem to be satisfied with school is significantly lower than for girls ($P \leq 0.001$), whereas there are no gender differences among 15 year olds. The only exception from this pattern is Finland where the boys follow the 11- and 13-year-old boys.

There is thus a consistent pattern of age and gender differences in the students' satisfaction with school, showing an increase across ages and majority of boys in the proportion of students reporting a negative perception.

The dimensions of the students' school climate perceptions explain 33% of the students' satisfaction with school in Finland, 27% in Latvia, 41% in Norway and 26% in Slovakia. These numbers are related to the total sample as presented in Table III. Table IV shows differences between age and gender groups in each country. Finland has the lowest deviance in the explained variance. Norway has a larger difference, showing a des-

Table III. Eight dimensions in students' school climate perception influencing their satisfaction with school (correlation and stepwise multiple regression analysis using satisfaction with school as dependent variable) (HBSC 1993/94)

School climate	Finland			Latvia			Norway			Slovakia		
	Corr.	β	R^2	Corr.	β	R^2	Corr.	β	R^2	Corr.	β	R^2
Justice	0.50***	0.38***	0.25	0.42***	0.28***	0.18	0.55***	0.39***	0.30	0.43***	0.25***	0.18
Teacher support	0.30***	0.08***	0.33	0.36***	0.18***	0.26	0.41***	0.12***	0.39	0.39***	0.19***	0.23
Unreasonable expectations	-0.34***	-0.17***	0.29	-0.11***	-0.06***	0.27	-0.27***	-0.08***	0.40	-0.08***	—	—
Disturbance in class	-0.22***	-0.05***	0.33	-0.14***	—	—	-0.23***	-0.06***	0.40	-0.13***	-0.04**	0.26
Student support	0.25***	0.09***	0.32	0.29***	0.12***	0.27	0.35***	0.10***	0.38	0.23***	0.07***	0.26
Safe at school	0.25***	0.13***	0.31	0.29***	0.17***	0.23	0.36***	0.16***	0.36	0.30***	0.17***	0.22
Bullying	0.08***	—	—	-0.10***	—	—	-0.18***	-0.03*	0.41	0.07***	-0.06***	0.26
Loneliness during breaks	-0.09***	—	—	-0.11***	—	—	-0.17***	-0.05***	0.40	0.01 ^{NS}	0.05***	0.26
Total	$N = 4049$			$N = 3579$			$N = 4615$			$N = 3287$		

*** $P \leq 0.001$; ** $P \leq 0.01$; * $P \leq 0.05$; NS, not significant.

ending explained variance by increasing age. In the two Eastern European countries the difference of explained variance is at the same level as for Norway, but there are no clear tendencies for any age or gender having a higher explained variance.

As seen in Table III the most important predictor for all countries is related to perceptions of justice and student involvement when regulations are developed. Support from the teachers is the second strongest predictor in Latvia and Slovakia. In Finland the expectations on the part of the teacher come second, whereas safety at school is second in Norway. Support from the teachers is the third strongest predictor in Norway, whereas safety at school comes third in the three other countries. Support from the fellow students comes fourth in all the four countries.

In all the regression analyses the β value for each predictor decreases when adjusting for other variables in the stepwise procedure. This indicates shared variance and thus additive relations between the predictors. The significant step-by-step increase in R^2 suggests that the single predictor also has a significant contribution that affects the dependent variable.

The pattern for each gender by age group in Table IV deviates only to a minor extent from the overall pattern for each country as seen in Table III. For Finland, Latvia and Norway the perception of justice is seen as the strongest predictor in all age

and gender groups. The following dimension in these countries is also similar to the general pattern with only minor exceptions for one to two subgroups. In Slovakia we find more diverse results for the different subgroups. Half of them find support from the teachers to be of superior importance to justice and an equal number of subgroups find safety at school to be the second most important dimension, which is similar to the Norwegian results. In Finland unreasonably high expectations on the part of the teachers is an important predictor for the students' satisfaction with school, whereas this dimension is of almost no importance in Latvia and Slovakia.

In summary, the important predictors of students' satisfaction with school are that (1) students feel that they are treated fairly, (2) they feel safe and (3) they perceive the teachers to be supportive. In addition, support from the fellow students seems to be of some importance. The greater the number of these conditions being met, the higher the expected level of satisfaction with school. Figure 2 illustrates the relationship between a high level of satisfaction with school and a high number of positive school climate perceptions. The figure for Norway shows that 5% of the students scoring low on all positive school perceptions report that they are satisfied with school, as compared to 72% of the students scoring high on being treated fairly in school, experiencing high on teacher support, feeling safe in school and experiencing student support.

Table IV. Eight dimensions in students' school climate perception influencing their satisfaction with school presented by age and gender (correlation and stepwise multiple regression analysis using satisfaction with school as dependent variable) (HBSC 1993/94)

School climate	11 years			13 years						15 years									
	Boys		Girls	Boys		Girls		Boys		Girls		Boys		Girls					
	Corr.	β	R^2	Corr.	β	R^2	Corr.	β	R^2	Corr.	β	R^2	Corr.	β	R^2				
<i>Finland</i>																			
Justice	0.54***	0.42***	0.29	0.49***	0.33***	0.24	0.53***	0.42***	0.28	0.44***	0.28***	0.19	0.52***	0.44***	0.27	0.39***	0.27***	0.15	
Teacher support	0.28***	—	—	0.31***	0.11***	0.31	0.29***	—	—	0.34***	0.14***	0.28	0.30***	—	—	0.31***	0.14***	0.28	
Unreasonable expectations	-0.33***	-0.17***	0.33	-0.34***	-0.15***	0.30	-0.35***	-0.16***	0.31	-0.32***	-0.16***	0.26	-0.33***	-0.18***	0.30	-0.21***	-0.09**	0.28	
Disturbance in class	-0.29***	-0.09***	0.35	-0.27***	-0.10***	0.32	-0.19***	—	—	-0.13***	—	—	-0.22***	—	—	-0.20***	—	—	
Student support	0.30***	0.11***	0.35	0.24***	—	—	0.26***	0.11***	0.32	0.18***	0.08*	0.28	0.22***	0.09**	0.30	0.28***	0.16***	0.26	
Safe at school	0.25***	0.07**	0.36	0.30***	0.15***	0.28	0.21***	0.13***	0.34	0.29***	0.16***	0.23	0.23***	—	—	0.33***	0.21***	0.23	
Bullying	-0.08*	—	—	-0.09**	—	—	0.01 ^{NS}	0.12***	0.34	-0.10**	—	—	-0.07 ^{NS}	—	—	-0.12***	—	—	
Loneliness during breaks	-0.12***	—	—	-0.11***	—	—	-0.16***	-0.08*	0.35	-0.11**	—	—	-0.05 ^{NS}	—	—	-0.15***	—	—	
Total	N = 841			N = 803			N = 612			N = 634			N = 555			N = 593			0.28
<i>Larvia</i>																			
Justice	0.38***	0.24***	0.15	0.42***	0.24***	0.17	0.39***	0.27***	0.15	0.40***	0.22***	0.16	0.44***	0.34***	0.19	0.46***	0.32***	0.21	
Teacher support	0.31***	0.16***	0.23	0.40***	0.22***	0.29	0.34***	0.16***	0.22	0.40***	0.19***	0.30	0.32***	0.13***	0.25	0.34***	0.14***	0.31	
Unreasonable expectations	-0.03 ^{NS}	—	—	-0.14***	-0.08**	0.32	-0.10**	—	—	-0.13***	-0.07*	0.30	0.15***	—	—	-0.13***	-0.07**	0.31	
Disturbance in class	-0.25***	-0.14***	0.21	-0.24***	—	—	-0.09*	—	—	-0.17***	—	—	-0.07 ^{NS}	—	—	-0.18***	—	—	
Student support	0.26***	—	—	0.31***	0.10***	0.31	0.25***	0.10**	0.23	0.36***	0.18***	0.27	0.24***	0.12***	0.22	0.34***	0.16***	0.26	
Safe at school	0.28***	0.17***	0.19	0.36***	0.20***	0.25	0.28***	0.17***	0.20	0.33***	0.20***	0.23	0.24***	0.13***	0.24	0.30***	0.18***	0.29	
Bullying	-0.16***	—	—	-0.16***	—	—	-0.13***	—	—	-0.07 ^{NS}	—	—	-0.05 ^{NS}	—	—	-0.14***	—	—	
Loneliness during breaks	-0.16***	-0.08*	0.24	-0.18***	-0.08**	0.30	-0.08*	—	—	-0.12***	—	—	-0.07 ^{NS}	—	—	-0.15***	—	—	
Total	N = 575			N = 623			N = 547			N = 622			N = 457			N = 754			0.31
<i>Norway</i>																			
Justice	0.53***	0.33***	0.28	0.59***	0.39***	0.35	0.51***	0.39***	0.26	0.49***	0.34***	0.24	0.49***	0.33***	0.24	0.49***	0.36***	0.24	
Teacher support	0.43***	0.14***	0.39	0.44***	0.11***	0.46	0.37***	0.13***	0.35	0.35***	0.11***	0.37	0.39***	0.13***	0.31	0.35***	0.13***	0.31	
Unreasonable expectations	-0.27***	-0.10***	0.41	-0.24***	—	—	-0.19***	—	—	-0.23***	—	—	-0.27***	-0.12***	0.33	-0.24***	-0.09***	0.32	
Disturbance in class	-0.24***	—	—	-0.34***	-0.10***	0.46	-0.18***	—	—	-0.20***	—	—	-0.18***	-0.06*	0.34	—	-0.10***	—	
Student support	0.38***	0.12***	0.38	0.41***	0.07***	0.48	0.34***	0.10***	0.34	0.38***	0.15***	0.36	0.35***	0.17***	0.29	0.22***	0.09***	0.33	
Safe at school	0.40***	0.17***	0.35	0.48***	0.23***	0.44	0.35***	0.16***	0.32	0.44***	0.26***	0.34	0.28***	0.09***	0.33	0.33***	0.18***	0.29	
Bullying	-0.22***	—	—	-0.31***	—	—	-0.19***	—	—	-0.19***	—	—	-0.14***	—	—	-0.12***	—	—	
Loneliness during breaks	-0.29***	-0.12***	0.40	-0.27***	-0.08**	0.47	-0.23***	0.10***	0.36	-0.22***	-0.08**	0.37	-0.15***	—	—	-0.12***	—	—	
Total	N = 713			N = 744			N = 807			N = 767			N = 811			N = 771			0.33
<i>Slovakia</i>																			
Justice	0.42***	0.24**	0.18	0.26***	0.09***	0.17	0.42***	0.21***	0.24	0.51***	0.30***	0.26	0.46***	0.41***	0.22	0.44***	0.25***	0.19	
Teacher support	0.41***	0.25***	0.22	0.32***	0.22**	0.10	0.43***	0.25***	0.19	0.45***	0.17***	0.34	0.33***	—	—	0.40***	0.17***	0.30	
Unreasonable expectations	-0.02 ^{NS}	—	—	-0.07 ^{NS}	—	—	0.02 ^{NS}	0.07*	0.29	-0.15***	—	—	-0.18***	—	—	-0.13***	—	—	
Disturbance in class	-0.13***	-0.08*	0.25	-0.08*	—	—	-0.24***	-0.14***	0.29	-0.20***	—	—	-0.17***	-0.08*	0.26	—	-0.04 ^{NS}	—	
Student support	0.16***	—	—	0.17***	—	—	0.21***	—	—	0.33***	0.13***	0.35	0.20***	0.09**	0.25	0.32***	0.17***	0.28	
Safe at school	0.23***	0.09*	0.24	0.31***	0.24***	0.16	0.32***	0.17***	0.26	0.39***	0.20***	0.31	0.23***	0.14**	0.24	0.33***	0.20***	0.24	
Bullying	-0.19***	-0.10**	0.24	-0.06 ^{NS}	—	—	-0.02 ^{NS}	—	—	-0.12***	—	—	0.05 ^{NS}	—	—	-0.01 ^{NS}	—	—	
Loneliness during breaks	-0.13***	—	—	-0.01 ^{NS}	—	—	0.05 ^{NS}	—	—	-0.00 ^{NS}	—	—	0.01 ^{NS}	—	—	-0.07 ^{NS}	—	—	
Total	N = 522			N = 549			N = 557			N = 637			N = 524			N = 492			0.30

***P < 0.001; **P < 0.01; *P < 0.05; NS, not significant.

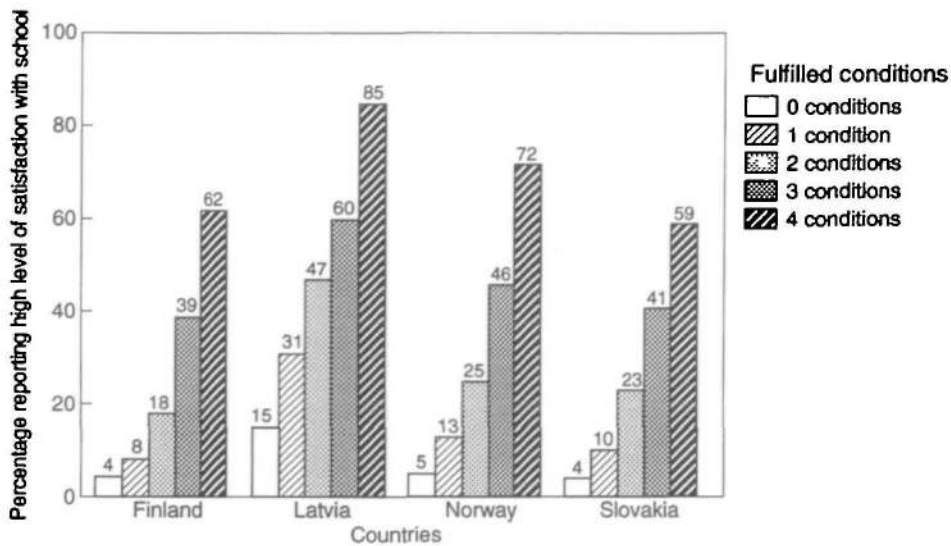


Fig. 2. The relationship between reported high level of students' satisfaction with school and their perceptions of four conditions of the school climate: treated fairly, experiencing teacher support, feeling safe in school and experiencing student support (11, 13 and 15 year olds).

Discussion

Although the questionnaire has drawn substantially on past research and has been extensively piloted, there are inevitably limitations to the presented data. The variables by no means represent all important aspects of the students' perception of school or the outcomes of their school experience. A more comprehensive picture would include greater examination of external influences on the student's school perceptions and experiences such as family, peers and spare time activities, and an opportunity to control for these influences.

International surveys also place limitations on data collection. Each variable has to make sense over borders of cultures and school systems. Because of this, questions have to be generally applicable to fit different situations. This is very evident when school climate is selected as a research topic. Despite substantially different schooling systems in Europe, the present findings show only a minor gap in the explained variance between the two northern and eastern countries.

The internal consistency of the measures of sum scores suggest that the questionnaire items seem to be slightly better fitted to the perceptions of the Nordic students' than of the eastern European. However, the minor variances between countries indicate that the extensive effort which has been put into developing a common basis for concept interpretation and translation in the different countries (King *et al.*, 1996) has been successful.

This underlines the value of the international data set in examining the strength and consistency of the students' perception of school across national boundaries in order to see what common approaches can be developed to improve the students' satisfaction with school. This is particularly important in supporting international collaboration in existing networks such as the 'European Network of Health Promoting Schools' (Young, 1992; Williams and Jones, 1993; Hurrelmann *et al.*, 1995; Rowling, 1996).

The majority of students in all four countries seem to be quite satisfied with school. As was expected, more younger students are satisfied with school than the older ones. The same decrease in

the students' satisfaction with school by grade level has been found by others (Okun *et al.*, 1990). In the two youngest age groups the proportion of boys who are satisfied with school is significantly lower than among girls. Similar results have been found by other researchers (Epstein, 1981a; Darom and Rich, 1988; Okun *et al.*, 1990; Bulcock *et al.*, 1991). One explanation of this finding may be the match between expectations related to the student roles as compared to gender roles. The student role is characterized by expectations of being quiet, attentive and adult-oriented, and to be confident in using verbal skills to express knowledge and reasoning. Such characteristics are similar to the female gender role (Richardson *et al.*, 1986; Beal, 1994). Thus, the boys may find it harder to adapt to the demands of the school than the girls, implying that the girls may develop a more positive attitude towards school than the boys.

In Latvia and Norway the students' reported satisfaction with school is very high for both genders, although it decreases with age. This might reflect the fact that the school system in these two countries has teaching approaches which do not favour any gender. Latvia was among the most recent (1993) Eastern European countries to include perestrojka and exclude communism as a subject on the curriculum. Obedience and collectivism were among the strongest ideals to follow. For Latvia the situation with no traditions for the students to question regulations or teacher behaviour could be a plausible explanation for the students being less critical towards school (Hirsch, 1994).

The general pattern for all the countries is that the perception of justice seems to be most strongly related to the students' satisfaction with school, followed by feeling safe at school and support from the teachers. This suggests that the students have an overall impression of the school atmosphere which is based on their interactions both inside and outside the classroom. These findings contradict arguments saying that the students do not have a perception of the general school atmosphere and that such perceptions should not be included in school climate research (Fisher and Fraser, 1991).

Furthermore, the findings suggest that organizational processes within the school, e.g. the ways in which rules and regulations are made and interpreted, are important in developing a sense of well-being among the students at school. The students' perception of justice is based on whether the students feel that they can influence rules and regulations in school, and whether they experience that the teachers treat them fairly. It is important for each student to experience that nobody else is treated in a different way, especially if this is a better way. The students' contribution to the development of rules and regulations is also an important means of accepting and perceiving ownership of the regulations which are needed in a school society.

Social interaction with the teachers seems to make a significant contribution to the students' satisfaction with school as indicated by the findings concerning perceived social support from the teachers. Teacher support is measured both in terms of practical and emotional support, and both seem important influences on the students' satisfaction with school. The teachers as persons and their way of caring for the individual students (as well as the total class) all appear to be important in determining a high satisfaction with school. There seems to be a difference between the two Nordic countries and the two Eastern European countries when it comes to the strength of the importance of teacher support. This dimension of the school environment seems to be a stronger predictor of the students' satisfaction with school in the Eastern European countries than in the Nordic ones. This might reflect effects of a school system in Eastern Europe, which has a much more authoritarian approach than the Nordic countries (Hirsch, 1994). The individual teachers' way of behaving and caring for the students may thus become more important in Eastern Europe than in the Nordic countries where all teachers are expected to focus on the social welfare of the individual student.

Another important finding is that satisfaction with school seems to be strongly related to perceptions of 'safety'. Safety has not been studied in the school climate research, but the present findings

suggest that bullying, loneliness and peer support are likely to be related to this concept. Further research is needed to better understand the concept of safety and its relation to the students' satisfaction with school.

Surprisingly, peer support seems to be only of minor importance in influencing the students' satisfaction with school. Similarly, bullying and feeling lonely in recess appear to be of almost no direct influence. By contrast, the perception of safety at school seems very important. As either safety at school or, less frequently, student support comes out as a strong predictor, it is likely that safety at school includes a large part of the variance in student support. The results suggest, however, that support from fellow students in class is of much more influence than direct physical bullying or being left out or alone (indirect bullying). This finding may be explained by the fact that bullying is not very frequent, and although a very important issue to those individuals directly affected, it does not emerge as a major issue in this type of study and analysis.

Inappropriate work requirements, indicated by unreasonable expectations on the part of the teacher, did not seem to be among the main predictors of the students' satisfaction with school, except for Finnish students. Measurement problems may be one of the reasons for this finding, as it is possible that 'job demands' may not have been measured in an appropriate way in this study.

Previous research has indicated the relationships between liking school and more frequent smoking and use of alcohol (Nutbeam *et al.*, 1989, 1993; Nutbeam and Aarö, 1991), and urged a general strategy of improving the students' liking of school to counter-act this influence and to improve the students' receptiveness to health education and health supportive school environments. This study indicates which part of the students' total school experiences are most important for their school adjustment and in so doing may provide a better basis for interventions to develop a health promoting school. In this regard special attention should be given to the oldest students to counter-act their tendency of alienation from school (Calabrese,

1987a; Ekstrom *et al.*, 1986). As they are more mature it may also be easier to let them influence regulations and activities in class and at school level. In addition, the caring attitude frequently seen among teachers in primary school needs also to be present in secondary school. The fact that boys seem to be less satisfied with school than girls should also be addressed. It is important to find ways to let the boys succeed with their often more practical activity oriented and competitive skills and attitudes (Beal, 1994).

Moreover, the study reveals that there is a common pattern in both Eastern and Northern Europe in which aspects of the students' perception of school climate seem most influential on their satisfaction with school. This supports further development of cross-national networks focusing on interventions.

Currently, comprehensive school health initiatives, such as the health promoting schools network in Europe, tend to emphasize school policies and environments, and links to the wider community, alongside the attention given to curriculum programs (Nutbeam, 1992; Young, 1992; Williams and Jones, 1993; Rowling, 1996). This research suggests that much greater attention needs to be given to the *quality* of a student's school experience when it comes to regulations and safety, and the *quality* of the relationship with the teachers than may have been the case previously.

The present study has indicated the importance of creating a school environment which the students perceive to be safe and justly organized, and which fosters supportive relationships between the students and the teachers. Creating such an environment may have the effect both of improving the educational experience of the students, and enhancing their well-being and health. One approach to improving the students' satisfaction with their school experience which is indicated by both the educational literature and by the research on job satisfaction among adults, is to increase the students' participation in decision making at school (Calabrese, 1987b; Karasek and Theorell, 1990). Including the students in this way would make it easier for them to express their needs and also

helps to create a social environment for improved student-teacher interaction as well as a sense of justice in decision making. Programmes such as the 'European Network of Health Promoting School' are more likely to be effective by giving due attention to these important issues in the development of an holistic approach to school health.

Concluding remarks

Whereas previous studies have shed light on the relationship between health behaviours and the students' satisfaction with school, the present study has contributed to a more meaningful explanation of this relationship. It would be naive to believe that these associations are causal and linear, but information from this study highlights the importance of the school organization and the relationship between the students and their teachers. The important predictors of the students' satisfaction with school are that the students feel that they are treated fairly, that they feel safe, and that they experience that teachers are supportive. This emphasizes the common need for health promoters, school teachers and educators to develop strategies to improve the quality of the students' school and classroom experiences, alongside attention given to content of curriculum and effectiveness of teaching method.

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