Students' Perception of the Moral Atmosphere in Secondary School and the Relationship Between Moral Competence and Moral Atmosphere

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ABSTRACT   *This study of students' perceptions of the moral atmosphere in secondary schools was mainly inspired by the Just Community theory of Power, Higgins and Kohlberg (1989). The concepts they used in their intervention studies of schools developing into a Just Community were operationalised through a paper-and-pencil instrument for the measurement of students' perception of the moral atmosphere in school. To assess the reliability, validity and the power of the instrument a study was carried out in which 1553 students from 32 Dutch secondary schools participated. The schools were selected from among four types of schools varying in educational level: (1) junior vocational secondary education, (2) intermediate secondary education, (3) university preparatory and higher secondary education and (4) schools that were a mixture of intermediate secondary education, and university preparatory and higher secondary education. Analysis of variance revealed significant differences between schools and school types. Analyses of covariance with students' moral competence (assessed with the SROM-sf) as a covariate and moral atmosphere as dependent variable, showed that the effect of school, for all the schools taken together and for each school type, remained significant. The practical significance of these results is addressed.*

Introduction

The moral atmosphere in schools refers to the norms, values and meaning systems which students of a school share and is studied here through the perception of the

students. Basing ourselves on Kohlberg's educational theory, we regard moral atmosphere as an important link between individuals' competence in moral reasoning and their moral behaviour (Higgins, Power & Kohlberg, 1984; Kohlberg, 1984, 1985). The consequence of this view is that when one wants to improve moral behaviour, one has to improve the contextual moral atmosphere in which the behaviour occurs. In this respect, secondary schools have been considered of special importance: "The problems of crime and disruption in our schools have their origin in a declining school culture or more specifically, in a low level of moral atmosphere" (Power, 1985, p. 223).

The Just Community approach describes the process that members of an institution go through when they develop the moral atmosphere within their institution. This developmental process is characterized by five constructs (Power, Higgins & Kohlberg, 1989, pp. 115–43), each of them divided into steps, phases or "soft" stages: (1) Valuing of the School as an Institution, which refers to the extent to which students value the school intrinsically; (2) Stage of Community, which refers to the shared understanding of the community as a terminal value; (3) Degree of Collectiveness, which refers to the degree in which a norm is shared by the students; (4) Phase of the Norm, which refers to students' commitment to seeing that the norms are upheld; (5) Stage of the Norm, which refers to the way the meaning of the norm is shared. Finally, the following construct is distinguished: (6) Content of the Norm, which refers to the norms within a community: caring, trust, integration, participation, publicity, collective responsibility, substantive and procedural fairness, equity and order. In the present study, Content of the Norm refers to whether the predicted action in a school-related dilemma is, for instance, to help or not to help another student.

Using these constructs, Power *et al.* (1989) present the following characterization of the moral atmosphere in large normal public high schools in the USA: the Valuing of the School as an Institution is instrumental-extrinsic, meaning that the school is valued as an institution that helps individuals to meet their own needs. The Stage of Community is concrete-reciprocal, meaning that the community consists of a collection of individuals who exchange favours and rely on each other for protection. The Degree of Collectiveness is individual, authoritarian or counter-culture. The Phase of the Norm is that no collective ideal or norm exists or has to be expected. The Stage of the Norm is concrete-reciprocal (Stage 2).

In some secondary schools with volunteer student populations from a variety of socio-economic backgrounds, the moral atmosphere was developed by means of a Just Community programme. The programme consisted of: (a) open discussions focusing on fairness, community and morality; (b) cognitive conflict stimulated by exposure to different points of view, and higher stage reasoning; (c) participation in rule making and rule enforcement and the public exercise of power and responsibility; (d) the development of community or group solidarity at a high stage. In a Just Community school, the students identify with the school and the school is intrinsically valued. The Stage of Community has developed into a commitment and loyalty to the community. Collective norms have been established. The Phase of the

Norm has developed into students feeling responsible in maintaining and defending the collective norms. The Stage of the Norm is congruent with or even higher on school-related, real-life moral dilemmas than on hypothetical moral dilemmas (which means at least Stage 3).

The researchers participating in the development of Just Community schools observed some striking changes in students' moral behaviour: stealing, fighting, cheating and truancy ceased; drug and alcohol abuse during school hours were eliminated. Other beneficial outcomes were the improvement of black students' integration, learning to participate in democratic meetings, and an enhancement of educational aspirations.

In recent years the pedagogical task of the school has become a subject of public debate in The Netherlands. We consider the realisation of a high level moral atmosphere in the school as a contribution to the fulfilment of this pedagogical task. However, at present almost nothing is known about the moral atmosphere in normal secondary schools from the Just Community perspective. The Just Community studies obtained results from a few regular schools that served as controls for the Just Community schools.

In the present study a subset of the above-mentioned constructs has been operationalised in a paper-and-pencil instrument for the description of moral atmosphere in "normal" secondary schools. In an earlier study, using open and structured interviews to measure moral atmosphere in normal secondary schools in The Netherlands, we examined and found support for the applicability of these constructs in a paper-and-pencil instrument to describe the moral atmosphere in these schools (Brugman *et al.*, 1994).

Research Questions

The main questions addressed in this research project are: (1) is it possible to construct a sufficiently reliable and valid paper-and-pencil instrument to measure students' perception of the moral atmosphere in secondary schools? (2) To what extent can between-school differences in moral atmosphere be explained by differences in students' moral competence? As the second question can only be answered meaningfully if the first question is answered positively, we will present some results pertaining to the first question, particularly concerning the instrument's power to discriminate between schools. A more detailed account of these results will be presented elsewhere (Beem *et al.*, in preparation). We also present results pertaining to the construct validity of the instrument. The observed between-school differences in moral atmosphere are related to the occurrence of undesirable behaviour at school as reported by students. The convergent and discriminant validity of the instrument at the student level were reported in Brugman *et al.* (1995). Hence, in the present study the questions to be addressed are the following:

1. Is it possible to detect differences in moral atmosphere between "normal" secondary schools?
2. What is the "practical significance" of the observed differences between schools?

3. To what extent can between-school differences in moral atmosphere be explained by differences in students' moral competence?

Method

Sample

A major goal of the present study was the estimation of scale reliabilities for the constructed instrument. The reliability estimation was based on a generalisability study in which variance components were estimated for various levels or units in the population of schools. As dependable reliability estimates require reasonably precise estimates of (some of the) variance components, our sample design was to a large extent dictated by this requirement.

A total of 1553 students from 32 normal Dutch secondary schools participated in the study, 768 boys and 785 girls, aged 12–18 years. Their mean age was 14.7 years. The Dutch school structure for secondary education is rather complicated. Any child leaving primary school at about 12 years of age can make a choice among 15 types of schools of varying educational levels or combinations thereof. The four types we selected for the present study represented 66% of the schools (1994 figures) and comprised 53% of the students (CBS, 1996). These four types of schools represent the four educational levels in the Dutch population of secondary schools (i.e. junior vocational, intermediate general, higher general and university preparatory secondary education). The sample contains small independent schools as well as larger comprehensive schools. During the last few years, the number of secondary schools in The Netherlands has decreased strongly. The mean size of the schools consequently increased from 588 students in 1992/93 to 1182 in 1996/97 (School, 1996). In 1994, 31% of the students were placed in broad-based combined schools (mean size 1842 students) offering education at all four levels. Mainly, these large schools are teaching different educational levels at different locations with—possibly—differing moral atmospheres; for this reason they were excluded from participation in this study.

Type 1 schools for junior vocational secondary education are small independent schools (mean size is 476 students in the population, and 431 students in the sample). They provide a 4 year programme which aims at leading the student to further vocational training or education. In the third year (Grade 3) students choose a vocational sector. This choice is often gender-bound; some vocational sectors, and some schools are chosen almost exclusively by one of the genders, for example technics and beauty care.

Type 2 schools for intermediate secondary education are small independent schools (mean size 292 students in the population, and 320 in the sample). They offer a 4-year general programme leading the student to vocational education or higher secondary education.

Type 3 schools represent the two highest educational levels: higher secondary education (5 years) and university preparatory education (6 years). This group includes schools of various kinds. Four schools teach at both educational levels (mean size 947 students in the population, and 1169 in the sample). Three schools

TABLE I. Distribution of the sample by type of school, number of schools, grades, classes and students

Type of school	N schools	N grades	N classes	N students
1. Jun. Vocat. Sec. Ed.	8	16	32	259
2. Interm. Sec. Ed.	8	16	32	257
3. Univ. Prep./High. Ed.	8	24	48	384
4. Mixed Interm. + Prep.	8	40	80	653
Total	32	96	192	1553

1 = Junior vocational secondary education; 2 = intermediate secondary education; 3 = university preparatory and higher secondary education; 4 = mixed intermediate secondary education and university preparatory and higher secondary education.

are small independent grammar schools (mean size of 552 students in the population, and 633 in the sample). One school is based on the philosophy of Rudolf Steiner (280 students).

Type 4 schools are broad-based combined schools, offering education at all levels taught at Type 2 and Type 3 schools; that is, intermediate secondary education, university preparatory and higher secondary education (with mean sizes of 1081 students in the population, and 1023 in the sample).

All participating schools were situated in the western, highly urbanised, part of The Netherlands. Fourteen schools were situated in three of the four biggest cities; five schools were situated in villages. In The Netherlands, in addition to state schools, there are various denominational schools such as Protestant, Roman Catholic, anthroposophic and private schools based upon different educational theories— such as Montessori, Dalton and Jenaplan. These latter can, of course, also be denominational in character. In our sample, five schools were state schools, 11 were Roman Catholic, six Protestant, and 10 belonged to other types of denominational and/or private education.

From each main school type, eight schools were selected (see Table 1). Grade 2 and 3 participated in all schools (with mean ages of 13.9 and 15.0 years, respectively). In the two highest educational levels (i.e. higher secondary education and university preparatory education) Grade 4 (with mean age of 15.9 years) also participated in this study. From each grade level two classes were randomly sampled. In each class eight students were chosen, if possible four girls and four boys. In general the selection was random, but students could not be forced to participate. The sample consisted of 88.4% students who were originally selected at random, 10.2% of students selected as (first) substitutes, and the remaining 1.4% of students who were not selected in advance but volunteered at request on-site. In five schools for Junior Vocational Secondary Education it was impossible to sample equal numbers of boys and girls. The percentages of boys in these schools were 63,6%, 9,1%, 18,8%, 27,3% and 100%, respectively.

Instruments

The Secondary School Moral Atmosphere Questionnaire (SMAQ) is a multiple

choice instrument. It consists of two parts: (1) two standardised school-dilemmas, and (2) a questionnaire called "Questions about you and the school". Four of the six dimensions defined by Power *et al.* (1989) were operationalised in the SMAQ, using subscales that were almost identical to those of Power *et al.*, and a few additional subscales to measure the lower range of moral atmosphere (examples of questions and one of the school dilemmas are given in Appendix 1). Students were asked to answer the questions about moral behaviour, reasoning and opinions from their own perspective as well as from the perspective of the majority of their classmates. In this paper we confine ourselves to the latter perspective (see Higgins *et al.*, 1984).

1. *Standardized school dilemmas.* In the dilemmas (one about helping an un-popular classmate, the other about stealing from—and preventing somebody from stealing from—a classmate) two constructs were operationalised:
   (a) *The content of the norms "rejection of stealing" and "helping"*
   In this study the content of the norm is limited to social behaviour in a number of situations described in the dilemmas. The question is to what extent social norms such as "helping" and "rejection of stealing" are shared by the students of a particular school. Two content scores were computed; for the norm "helping" we used a mean score based on five situations and for "rejection of stealing" a mean score based on three situations was used.
   (b) *The stage of the collective norm*
   In the dilemmas, the stage of the (collective) norm was assessed by offering five sets of four reasons corresponding to four stages. Stage 1: heteronomous morality (fear for punishment). Stage 2: instrumental exchange. Stage 3: mutual interpersonal expectations, relationships, and interpersonal conformity. Stage 4: social system and conscience. The score on this variable was computed, similarly to the computation of the score for moral reasoning competence, as the mean of five sets of reasons, two from the helping dilemma and three from the stealing dilemma.
2. *"Questions about you and the school"*. In this questionnaire we operationalised the following dimensions:
   (a) *The school as a community* (21 items)
   Initially, the school as a community was operationalised using four scales: (1) Power Assertion; (2) Concrete Reciprocity; (3) Relations and Sharing; (4) Social Contract. The first scale, Power Assertion, was added to the scales defined by Power *et al.* (1989). It consists of items such as "one has to watch what one does; otherwise other students will make fun of you".
   In order to obtain sufficiently reliable scales we combined the former two and the latter two scales into two new variables, called "Negation of community" and "Sense of community".

(b) *The valuation of the school as an institution* (20 items)

In our operationalisation of "The valuation of the school as an institution" four scales are involved: (i) Rejection of the school; (ii) instrumental extrinsic valuation of the school as an institution that helps students meet their own needs; (iii) enthusiastic identification with the school at special moments (e.g. when a team wins an important game); (iv) feelings of spontaneous community (i.e. when students feel a sense of closeness to others, the school is positively valued for its social relations).

We did not use the highest level of valuing—defined by Power *et al.* (1989) as "Normative community"—because we did not succeed in constructing items that unambiguously represented either this level or Stage 4 in "The school as a community" (Social contract). Questionnaire items used five-point scales, ranging from "absolutely not true" to "absolutely true".

Moral Reasoning Competence

For the measurement of this construct we used the Socio-moral Reflection Objective Measure—short form (SROM-sf), constructed by Basinger and Gibbs (1987). A translated version (Stams *et al.*, 1994) was tested on a sample of 198 students and improved before its use in the present study. Cronbach's alpha at the student level was 0.68.

Undesirable Behaviour at School

According to Kohlberg (1981) moral school atmosphere should be related to the occurrence of misbehaviour at school. We asked students to complete a questionnaire called "Behaviour at school", containing 41 questions about the extent to which they thought students in general misbehaved during the last half year, the extent to which they themselves had misbehaved, and how often they had been victims of misbehaviour. Examples of questions are given in Appendix 1. The questions referred to drug and alcohol use, teasing, truancy, stealing, fighting and vandalism. Questionnaire items used five-point scales. Seven scales, all with Cronbach's alpha beyond 0.80 at the school level, and nine variables consisting of one item were used in the present study.

Results

Reducing the Atmosphere Variables to One Scale

Of the original nine atmosphere variables, eight were combined into one total score for moral atmosphere. "Instrumental extrinsic valuing" was left out because this variable is not sensitive to differences in quality of moral atmosphere between

TABLE II. Description of the moral atmosphere variables, scales and total score; $N = 32$ schools

	Mean	Standard deviation	Minimum	Maximum	Item-total correlation
Negation of community*	0.57	0.04	0.51	0.67	0.64
Sense of community	0.49	0.05	0.42	0.62	0.69
Rejection of the school*	0.62	0.05	0.54	0.70	0.69
Enthusiastic identification	0.52	0.07	0.39	0.70	0.78
Social relations	0.64	0.04	0.54	0.75	0.80
Helping	0.28	0.05	0.21	0.43	0.83
Rejection of stealing	0.62	0.07	0.45	0.74	0.75
Stage of the norm	0.48	0.03	0.41	0.55	0.58
Moral atmosphere total score	0.53	0.04	0.46	0.61	Cr. alpha = 0.90

* The marked scales are reversed.

schools. In all schools the mean score on this level of valuation of the school was higher than on any other level of valuation. The included variables were: negation of community, sense of community, rejection of the school, enthusiastic identification, social relations, stage of the norm and the content of the norms helping and rejection of stealing.

A principal component analysis performed at school level showed that the eight variables combine to form a component accounting for 62.6% of the variance. Loadings varied from 0.67 for stage of the norm to 0.87 for content of the norm, helping. Cronbach's alpha for this scale was 0.90 for the school means (and 0.87 when the school type means were subtracted from the school means). After transforming the variables to the same range, from 0 to 1, and reversing the negative variables (i.e. negation of community and rejection of the school), the total score for moral atmosphere was computed as the average of school means on the eight variables. The school means on this total score vary from 0.46 to 0.61, the grand mean is 0.53, and the maximum deviation from the mean is two standard deviations (cf. Table II).

Differences in Moral Atmosphere Between Schools and School Types

The scores in Table II are not stage scores as only "stage of the norm" was originally expressed in Stage one to four, with school means varying from 2.2 to 2.7, and a grand mean of 2.4, which is half a stage lower than the grand mean on "moral reasoning competence". The latter measures the students' stage of reasoning about why you ought, for example, to save somebody's life, whereas "stage of the norm" measures what students think is their classmates' stage of reasoning about why, for example, they do help an unpopular classmate. An attempt to assign stage scores for "the stage of community" (i.e. 1. Power Assertion; 2. Concrete Reciprocity; 3. Relations and Sharing; and 4. Social Contract), was not successful because approx-

TABLE III. Frequencies, means and standard deviations of the moral atmosphere total score for all 32 schools and per school type

Moral atmosphere total score	Frequency all 32 schools	Frequency Type 1 schools	Frequency Type 2 schools	Frequency Type 3 schools	Frequency Type 4 schools
0.46	2	2			
0.47	2	2			
0.48	1		1		
0.49	1		1		
0.50	2		2		
0.51	7	1	1		5
0.52	1			1	
0.53	2	1	1		
0.54	3			2	1
0.55	2	1		1	
0.56	4	1	1		2
0.58	2		1	1	
0.59	1			1	
0.61	2			2	
Total	32	8	8	8	8
Mean	0.53	0.50	0.52	0.57	0.52
Standard deviation	0.04	0.04	0.03	0.04	0.02

imately 60% of the students did not show a distinct preference for one of these stages; that is, they did not score higher than 3.5 on any of the four stages (questionnaire items used five-point scales, ranging from "absolutely not true" to "absolutely true").

To give an indication of the meaning of the differences between high and low scoring schools, scores from the present study were compared with scores from a previous study (1991/1992, Brugman *et al.*, 1994). Some of the schools in the present study also participated in this earlier study, which made use of open and structured interviews for measuring moral atmosphere. Table III contains the frequencies of the moral atmosphere total score. One of the Type 3 schools scoring highest on moral atmosphere in the present study, a grammar school, and a school based on Rudolf Steiner's philosophy with a score of 0.59 also scored first and second highest in the earlier study. One of the Type 1 schools scoring 0.47 in the present study also belonged to the lowest scoring schools in 1991/1992. In this Type 1 school "stage of community" scores were predominated by Stage 2 statements (Concrete Reciprocity), but also many Stage 1 statements (Power Assertion) were scored. On "valuation of the school as an institution" only statements at the two lowest levels were scored (Rejection of the school, and Instrumental extrinsic valuation of the school). On "stage of the norm" only Stage 2 reasoning was scored. In this school there were no collective norms, only

individual rights, and the school was rejected and/or at most instrumentally valued. In both the high scoring Type 3 schools, Stage 3 statements (Relations and Sharing) on "stage of community" were predominant. Students from these schools also valued the school instrumentally, but at the Steiner school Level 4 statements were predominant (Feelings of Spontaneous Community). At the grammar school, statements at Level 2 (Instrumental extrinsic valuation), 3 (Enthusiastic identification), and 4 (Feelings of Spontaneous Community) were numerous, and even some statements at Level 5 (Normative community) were scored. On "stage of the norm" Stage 3 reasoning was scored in both schools, but at the grammar school we also saw examples of Stage 2 and Stage 4 reasoning. Both schools could be described as spontaneous communities with collective norms of relations between group members. In the grammar school some students even had collective norms of the community.

We conclude that the rank order of these three schools on moral atmosphere was the same in both studies. Perhaps the difference between these schools has become smaller over a period of 3 years, but the small difference in total atmosphere score in the present study may also be due to the use of different measurement methods (i.e. production in interviews versus recognition in the paper-and-pencil instrument).

Although the differences between schools seem to be small, analysis of variance with school as a fixed effect revealed highly significant differences between school means. (More detailed alternative analyses with random effects will be presented elsewhere.) Differences between school within each type of school were significant (see Table IV, first column of results).

Analyses of covariance with moral competence as control variable were performed in order to examine whether between-school differences would remain when we statistically controlled for the influence of moral competence. These analyses showed (cf. Table IV, second column of results) that the effect of school, for all schools taken together as well as for each school type, remained significant. The same result was found after controlling for the effects of verbal intelligence, socio-economic status, social desirability and gender. After controlling for the effects of all five variables simultaneously (cf. Table IV, last column of results), the effect of school remained significant [1]. Within school Type 1 and 3, schools differed more strongly in moral atmosphere than schools within school Type 2 and 4, as can be inferred from the *F* values presented in Table IV. This can be explained by the greater variety of schools within school Type 1 and 3. For Type 1 schools the gender of the students was important (see the description of the sample). In general girls scored higher than boys on moral atmosphere. Because unequal numbers of boys and girls were sampled within five of the Type 1 schools we observed a stronger decrease of the *F* value after controlling for gender compared with other school types. Type 3 schools were less homogeneous in size and educational level than other school types. The four bigger schools—teaching at both educational levels—scored lowest on moral atmosphere (mean score 0.54). The three small independent grammar schools had a mean score of 0.60. Differences between the school type means shown in Table III were also significant. Analysis of variance with school

TABLE IV. F values for the effect of school *before* (ANOVA results, first column) and *after* controlling for various variables (ANCOVA results, other columns). Dependent variable: mean atmosphere score

Type of school	ANOVA	ANCOVA covariates					
	1. Moral competence	2. Verbal intelligence	3 SES	4. Social desirability	5. Gender	1 + 4	All five
1. Jun. Vocat. Sec.	9.24	9.08	8.45	9.74	7.37	8.89	5.51
2. Interm. Sec.	4.39	4.23	4.59	4.00	4.41	4.09	3.87
3. Univ. Prep./High.	9.19	8.97	7.51	10.14	9.18	8.82	7.57
4. Mixed Int. + Prep.	5.51	5.37	4.99	5.33	5.34	5.54	4.65
Split up:							
Interm. Sec.	4.07	4.05	3.73	4.28	4.07	4.18	3.65
Univ. Prep./High.	4.19	4.20	3.81	4.20	4.12	4.23	3.83
All 32 schools	9.71	8.30	8.56	10.07	9.56	8.63	7.10

All F values are significant, $P \leq 0.001$. For abbreviations, see Table I.

TABLE V. Generalisability study: percentage of variance accounted for by various research factors (Grade 2 and 3, $N = 1280$)

	Moral atmosphere (%)	Moral competence (%)
Type of school	6	10
School within type of school	10	2
Grade	3	1
Class	3	1
Type of school × grade	0	0
Grade × school	2	2
Student and error	77	84

means revealed that Type 3 schools score higher on moral atmosphere than Type 1 and Type 2 schools ($P \leq .05$).

Variance components for a generalisability study were estimated for type of school, school-within-type of school, grade, class, type of school × grade interaction, and grade × school interaction and student combined with error. In that study, to be described in detail elsewhere (Beem *et al.*, forthcoming) "grade" was defined as a main effect and "class" as an effect nested within the grade × school interaction. Only Grade 2 and 3 were included in the analysis since a balanced design is very convenient for this type of analysis. In our study, the most important component is "school within type of school", as the existence of differences between types of schools in our opinion is evident. Table V shows that for moral atmosphere this component is even greater than the type of school-component (10% vs. 6%). The reverse holds for moral competence. In this case the type of school-component is the greatest, as would be expected. Moral competence is more strongly related to intelligence and educational level than is moral atmosphere.

Practical Significance of Differences Between Schools

Although we did find statistically significant differences between schools, the "practical significance" of these differences is another matter. In seeking an answer to this question we related the moral atmosphere score to our measurements of undesirable behaviour at school. How much would we expect undesirable behaviour to decrease in an imaginary school that improved from the lowest to the highest atmosphere score? Regression analyses with the various scales and items as dependent variables predicted the decrease shown in Fig. 1. "School" refers to the extent to which students thought that "students in general" misbehaved during the last half year. "Self" refers to the extent to which students themselves had misbehaved in the same period. "Victimisation" refers to how often they had been victims of misbehaviour. For truancy and fighting there are no victimisation scores, as doer and victim are the same. Only significant regression models are reported in Fig. 1 (results with victimisation of vandalism as dependent variable were not significant) [2]. The
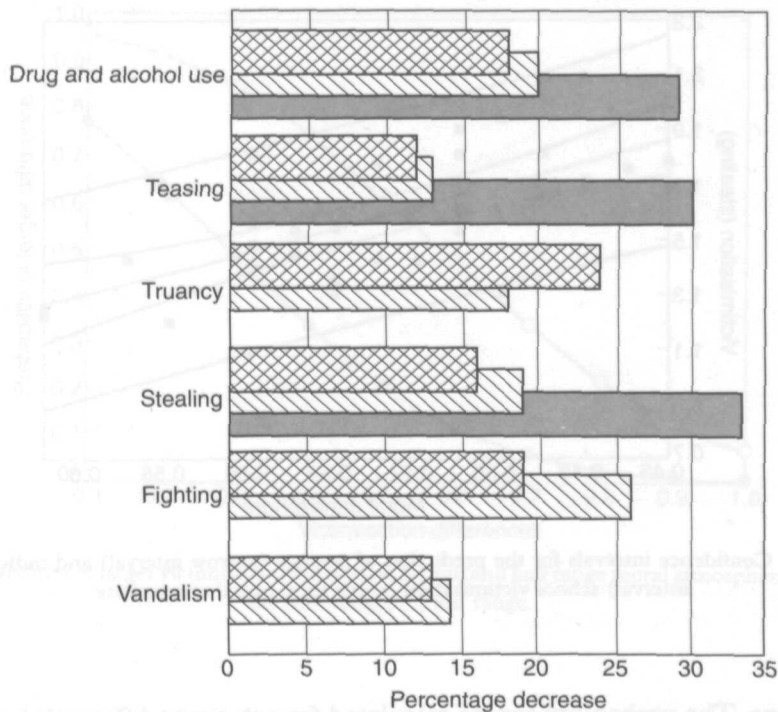
FIG. 1. Predicted decrease in undesirable behaviour; from lowest to highest moral atmosphere score. ▨, Self; ▧, School; ▥, victimisation. "Victimisation" of drug use means being offered soft drugs.

smallest average decrease is predicted for teasing ("school"), which would drop by 12%, the largest average decrease with victimisation (stealing), dropping by 33%.

In Fig. 2 the 95% confidence intervals of this last prediction are depicted. The narrow interval is for the predicted mean on victimisation corresponding to a given atmosphere score. For individual schools the confidence interval is much broader: 97.5% of the schools with an atmosphere score of 0.46 will score higher than 1.48. In this case a score of 1.48 means that the school mean is between 1 (i.e. not a victim of stealing) and 2 (i.e. once a victim of stealing); in other words, approximately 50% of the students were once victims of stealing during the last half-year.

The confidence intervals in Fig. 2 are useful because they give an indication of the precision of predictions of victimisation (of stealing) based on moral atmosphere. We also present an interpretation of the estimated regression which expresses the prediction uncertainty directly in terms of probabilities. The uncertainty is expressed as $P(Y_{ij} - Y_{i'j'} > c)$, which signifies the probability that the difference between the victimisation scores Y_{ij} and $Y_{i'j'}$ of two randomly selected schools j and j' with two given moral atmosphere scores x_i and $x_{i'}$, respectively, exceeds c. This probability can be calculated as $1 - P\{T < [c - b(x_i - x_{i'})] / s\sqrt{[2 + (x_i - x_{i'}) / \Sigma_i (x_i - m_x)^2]}\}$, where b is the estimated regression weight, s is the estimated standard deviation of the regression residuals, m_x is the sample's average moral atmosphere score, and T has a Student's t-distribution on $N - 2$ degrees of freedom for N the number of
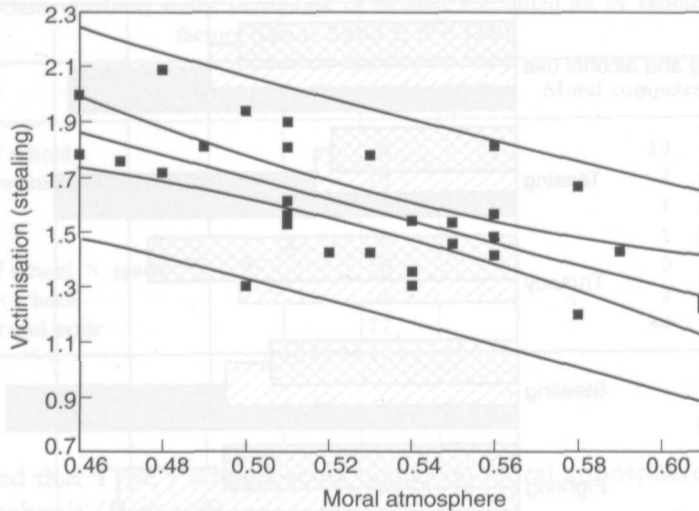
FIG. 2. 95% Confidence intervals for the prediction of average (narrow interval) and individual (broad interval) school victimisation scores from moral atmosphere.

observations. The probability can be calculated for any given difference between two moral atmosphere scores. Figure 3 presents the calculations for two such differences. *Full Range* refers to schools whose scores on moral atmosphere differ by 0.15, which is the range of moral atmosphere scores in the sample (i.e. the difference between the sample's minimum and maximum score). *Half Range* refers to schools whose scores on moral atmosphere differ by 0.075. Half the range compares, for example, schools with the minimum score in the sample and those with a score exactly between the minimum and the maximum score, or it compares the latter with schools with the maximum score.

In Fig. 3, the numbers on the *x*-axis are differences between victimisation scores of two (randomly selected) schools. The differences 0.1, 0.2, …, 1 span approximately the sample's score range on victimisation. The numbers on the *y*-axis are the probabilities that the difference between the victimisation scores of two randomly selected schools with given moral atmosphere scores is the same or larger than the number on the *x*-axis. The two curves in Fig. 3 are for *Full Range* and *Half Range* differences. As a concrete example, suppose we repeatedly select at random one school with the minimum moral atmosphere score and one school with the maximum moral atmosphere score and compute their difference on victimisation. Then Fig. 3 shows that among all those differences between victimisation scores, 50% will be at least as large as (approximately) 0.6, and approximately 8% will be at least as large as 1. Note that a small percentage of the computed differences will be negative (i.e. some schools with a maximum moral atmosphere will have a higher victimisation score than some schools with a minimum moral atmosphere score). Thus, improvement of the moral atmosphere may sometimes lead to a considerable decrease in undesirable behaviour at school.
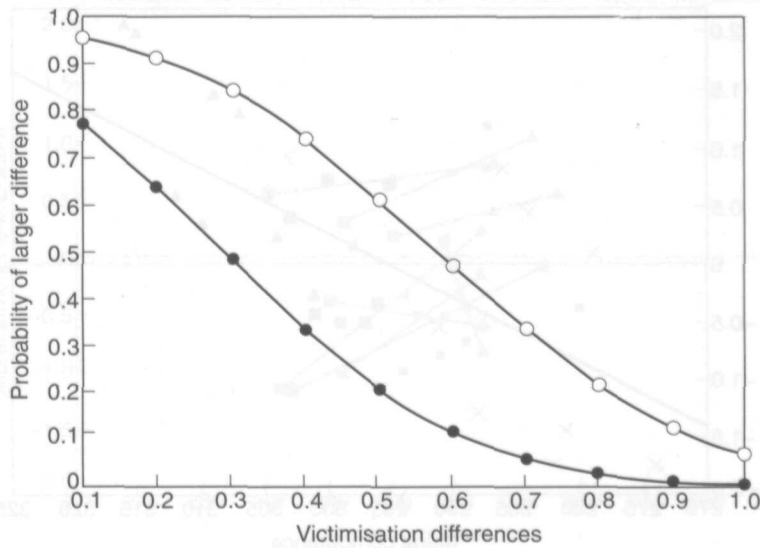
FIG. 3. Probabilities of larger victimisation differences for full and half range moral atmosphere differences. ●, Half range; ○, full range.

Moral Atmosphere and Moral Competence

We already saw that the effect of school remained significant after statistically controlling for the influence of moral competence at the student level. The Pearson correlation at this level is 0.16. Therefore, students' moral competence "explains" only 2.6% of the between-person variance in moral atmosphere.

The school means on moral competence vary from 274 to 316, the grand mean is 295: that is, all school means are closer to Stage 3 reasoning than to Stage 2 reasoning (cf. Table VI). The school type means are all significantly different.

Now we will be examine the third question: to what extent can between-school differences in moral atmosphere be explained by differences in students' moral competence? In Fig. 4 the school means for moral competence are shown on the *x*-axis, and the school means for moral atmosphere on the *y*-axis. It is clear that the

TABLE VI. Description of the mean moral competence score for all 32 schools and per school type

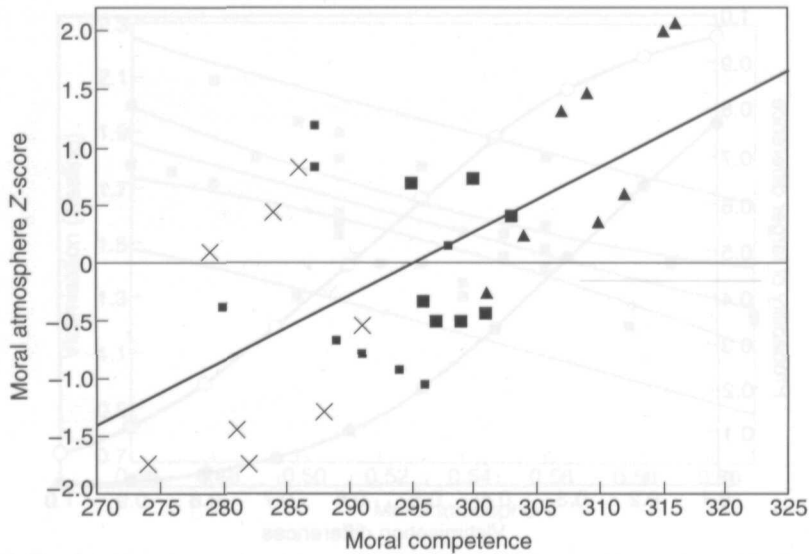|	Mean	Standard deviation	Minimum	Maximum
All 32 schools	295	10.9	274	316
Type 1 schools	283	5.4	274	291
Type 2 schools	290	5.9	280	298
Type 3 schools	309	5.2	301	316
Type 4 schools	299	2.6	295	303

FIG. 4. Regression of school moral atmosphere Z-scores on moral competence. School type: ■, intermediate; ■, mixed; ×, vocational; ▲, high level.

relationship between the two is strong. The Pearson correlation is 0.61. We do not find a positive correlation within all types of school; only for Type 3 schools it is strong and significant ($r = 0.79$, $P \leq 0.05$). The partial correlation—controlling for the effect of type of school—is 0.27, which is non-significant ($n = 32$ schools). In other words, moral competence "explains" 37% of the between-school variance in moral atmosphere, but only 7% seems to remain after correcting for the influence of school type. Although the plot in Fig. 4 suggests that the regression may not be the same across school types, we consider the samples too small to draw any firm conclusion concerning this matter.

It is obvious that the differences between the schools of Type 4 are small. If we divide these mixed-type schools by educational level, i.e. in "schools of Type 2" (intermediate level, represented by large squares), and "schools of Type 3" (high level, represented by triangles), the variance between schools increases (see Fig. 5). The lack of variance in moral competence between the departments at the higher educational level compared to the real Type 3 schools is striking (cf. Fig. 4). One school is deviating from the general pattern of lower means on competence as well as atmosphere at the lower educational level.

Discussion

A paper-and-pencil instrument was constructed to measure students' perception of the moral atmosphere in secondary schools varying in educational level. Questions concerning the reliability and validity of the instrument and its further improvement are addressed in Beem *et al.* (forthcoming). Here we have focused on questions with regard to the possible differences in moral atmosphere between secondary schools.
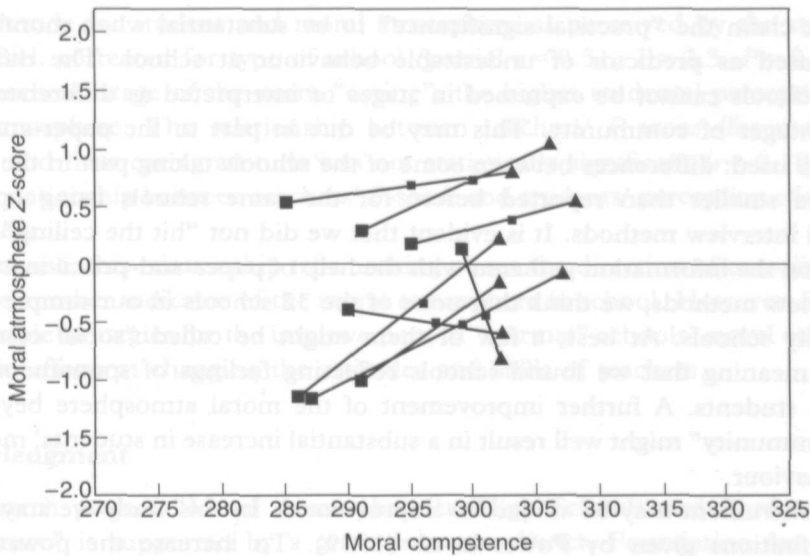
FIG. 5. Scatterplot of moral atmosphere *Z*-scores and moral competence. Overall school means and means of educational levels for eight mixed (Type 4) secondary schools. ■, Intermediate; ▲, high/University preparatory; ■, school mean.

Analysis of variance revealed significant differences between schools on the mean score. The differences between schools within type of educational level were also significant.

Analyses of covariance with students' moral competence measured with the SROM-sf as a covariate, and mean atmosphere score as dependent variable, showed that the effect of school, for all the schools taken together as well as for each school type, remained significant.

These findings raise the following questions: what is the significance of these differences between schools in moral atmosphere? More specifically, which effects on students' moral socialisation can be expected because of these differences? How can we explain these differences? These questions will be discussed with a view to ongoing and future research.

Power *et al.* (1989) did not find differences in moral atmosphere between the normal secondary schools they studied—for whatever reason:

(...) even though the schools differ dramatically in terms of demographic characteristics of the student, their social and geographical locations, their academic reputations, and the number of students who aspire to and go on to higher education. (...) these three (...) schools share common characteristics that press on students and teachers and create the same (...) instrumental norms and institutional valuing (Higgins, 1991, pp. 131–2).

However, we found differences in moral atmosphere between schools in The Netherlands. Although these differences proved to be highly significant statistically,

we cannot claim the "practical significance" to be substantial when moral atmosphere is used as predictor of undesirable behaviour at school. The differences between schools cannot be expressed in stages or interpreted as differences in for example, stages of community. This may be due in part to the paper-and-pencil method we used: differences between some of the schools taking part in the present study were smaller than reported before for the same schools using open and structured interview methods. It is evident that we did not "hit the ceiling". Basing ourselves on the information gathered with the help of paper-and-pencil instruments and interview methods, we think that none of the 32 schools in our sample are Just Community schools. At best, a few of them might be called "social community schools", meaning that we found schools reflecting feelings of spontaneous community in students. A further improvement of the moral atmosphere beyond the "social community" might well result in a substantial increase in students' moral and social behaviour.

The instrument may be subject to improvement. In this study we stayed close to the definitions given by Power *et al.* (1989). To increase the power of the instrument to discriminate between schools a more empirical approach might be more successful.

A study that we have just started will investigate whether differences in moral socialisation can be found to be due to differences in moral atmosphere between schools. The Just Community studies suggest that the difference in moral atmosphere between Just Community schools and "normal" schools results in long-term effects on students' moral behaviour and educational career. The smaller differences in moral atmosphere between normal secondary schools that we found may be also of importance in this respect.

At this moment we do not know which institutional variables cause these differences in moral atmosphere between schools. Hence, causal explanations of differences in students' perception of moral atmosphere can only be speculative. An overview of possibly relevant variables is given by Anderson (1982). In a preliminary study, two of our students, Scholten & Schuler (1996), selected one of the teacher variables that might contribute to students' perception of moral atmosphere: teachers' caring attitude towards their students (Nias, 1989), that is their commitment towards students' well-being. In the study 44 mentors of 18 schools mentioned in Table 1 completed a questionnaire on their caring attitude and the short three-dilemma version of the DIT to measure their moral competence. Students' well-being referred to students' feelings of being valued because of their achievements, feeling safe, and feeling respected because of being capable of fulfilling expectations. The norm "commitment to students' well-being" was measured on the moral atmosphere construct "stage of collective norm": live and let live (Stage 2), relationships within the group (Stage 3), and the group as an institution (Stage 4). Stage typed considerations on this norm were constructed for four situations in which the mentor can question his or her own responsibility: one student is bullied by other students, one student does not conform in his/her haircut to the norms of the other students, one student stands alone on different occasions, one student is nearly trampled on by the other students. They found a relationship between mentor's

caring attitude for student and moral atmosphere as perceived by the students at school level, corrected for type of school (partial $r = 0.51$, $T = 2.3$, $P = 0.03$). The higher teachers' stage of the norm "caring", the higher students' perception of the moral atmosphere. The relationship between teachers' P score (for moral competence) and their caring attitude was not statistically significant ($r = 0.18$), neither was the relationship between teachers' P-score and students' perception of the moral atmosphere.

Of course, this relationship tells nothing about the direction of causality; it may simply be another indicator of the moral atmosphere in school. However, one of the most feasible strategies for the improvement of "normal" schools' moral atmosphere may lie in efforts at changing the attitudes and skills of teachers.

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NOTES

[1] The covariates moral competence and social desirability were significant. After controlling for both covariates the adjusted school means for moral atmosphere differed, after rounding, in eight of the 32 cases only 1/100 from the observed means. We decided to maintain the observed means.
[2] All regression analyses were first computed with social desirability as independent variable together with moral atmosphere. In two analyses—both with teasing, in general at school and victimisation—social desirability contributed significantly to the solution and was maintained.

Appendix 1. Examples of Questions

This appendix only gives examples of questions and answer categories, not of the layout of the questionnaires. Comments for the reader, which are not included in the questionnaires, are given within parentheses.

The Secondary School Moral Atmosphere Questionnaire (SMAQ)

1. Standardised school dilemmas.

Helping dilemma.

(Only a part of the dilemma is translated here. The complete dilemma consists of 99 questions)

In some classes there are students that do not belong to the group, that are unpopular or not very well liked. John is such a student, you don't really like him either. He does not do well in a particular subject and therefore he might not be promoted to the next grade. Most of his classmates are achieving well on this subject. After the common part of the lesson, students are allowed to do something for themselves. John asks if someone will help him with his homework.

Imagine John is a classmate of yours.

1. What happens?

A. Do you recognize a situation like this?
   Yes
   No

B. What would you do if this situation occurred?
   Help
   Maybe help
   Not help

C. How many of your classmates will help a student like John?
   None
   Some of them
   About half of them
   All or most of them

D. What do you think your classmates should do if this situation occurred?
   They must help
   It is up to my classmates to decide if they will help

You may have various reasons for helping or not helping John. Below you will find a number of such reasons. Indicate for each reason if it is close to a reason you would give yourself. We also want you to indicate if you think most of your classmates would give this reason.

2. Reasons *for* helping John

A. If classmates do not help each other, there is no class left. (Stage 4)

Is this reason close to one you would give yourself?
   Yes, very much
   Yes, a little
   No
   I don't understand this reason

Is this reason close to one most of your classmates would give?
   Yes, very much
   Yes, a little
   No, I don't think so
   I don't understand this reason

B. If you need some help and nobody helps you, you would not like that either. (Stage 2)

(By B, C and D the same answer possibilities were used as by A)
   C. John is a student in your class, he is part of the class even if he is unpopular. (Stage 3)
   D. If you do not help John, the teacher might get angry. (Stage 1)

Which of these four reasons A to D is closest to the reason you would give? Mark one letter.
   A   B   C   D

Which of these four reasons is closest to the reason most of your classmates would give? Mark one letter.
   A   B   C   D

(Reasons for not helping John were also given. The questions concerning action choices are repeated for different circumstances)

What if you will be teased if you help John.

What if John asks you personally to help him. You are busy with an assignment that has to be finished the same day. If you help John, you will have to spend more time at home finishing your assignment. You will then not be able to watch your favourite television programme.

What if the teacher asks you to help John.

(Reasons for helping and not helping John were also presented)

The following questions are about a student who is not a classmate of yours but just a student from this school who you know only by appearance. You see him (or her) standing in the bike shed with a flat tire. Now he asks you if you will help him. He has to get to the dentist quickly. Would you bring him there on your bike? For you this would mean an irritating detour, but you do have time for it that day.

II. *"Questions about you and the school"*

1. *The school as a community* (21 items)

(a) Power Assertion

   "You have to watch what you do; otherwise other students will make fun of you."

(b) Concrete Reciprocity

   "I only help a teacher if I get some sort of reward."

(c) Relations and Sharing

   "At this school you can trust other students."

(d) Social Contract

   "Students and teachers are both responsible for what happens at school."

2. *The valuation of the school as an institution* (20 items)

(a) Rejection of the school

   "You go to school chiefly because you will be punished if you do not go."

(b) Instrumental extrinsic valuation of the school

> "It is important for my future to go to school."

(c) Enthusiastic identification with the school

> "I am proud of being a student at this school when a school team wins an important game."

(d) Feelings of Spontaneous Community

> "At this school you feel you belong to the school community."

Undesirable Behaviour at School

Questionnaire items used five-point scales, ranging from
(a) "nobody" to "all" or
(b) "never" to "very often" or
(c) "never", "once", "2–3 times", "4–5 times", "6 times at least".

* The nine variables consisting of one item are marked with a star.

The seven scales consist of three to five item.

1. Drug and alcohol use

"School"

> "How many students at this school, do you think, sometimes use weed (or another soft drug) during the break?"

"Self"

> "How often have you used weed (or another soft drug) during the break in the last half year?"

"Victimisation"*

> "How often in the last half year did another student offer to sell you weed (or another soft drug)?"

2. Teasing

"School"*

> "How many students at this school, do you think, are often bullied by other students?"

"Self"*

> "How often did you bully another student in the last half year?"

"Victimisation"*

> "How often were you bullied by other students in the last half year?"

3. Truancy

"School"*

> "How many students at this school, do you think, sometimes skip school for one or more days?"

"Self"*

> "How often did you skip school for one or more days in the last half year?"

4. Stealing

"School"

> "How often, do you think, students at this school stole things from other students during the last half year? (for example money, coats, bikes, pens)."

"Self"

> "How often did you steal things from other students during the last half year? (for example money, coats, bikes, pens)."

"Victimisation"*

> "How often was something stolen from you at school during the last half year?"

5. Fighting

"School"

> "How often, do you think, did scuffles between groups of students occur at this school during the last half year?"

"Self"*

> "How often did you fight at school during the last half year?"

6. Vandalism

"School"

> "How often, do you think, students at this school wrecked other students' belongings during the last half year? (for example books, bags, bikes)."

"Self"

> "How often did you wreck other students' belongings during the last half year? (for example books, bags, bikes)."

"Victimisation"*

> "How often were your belongings spoiled at school in the last half year?"

REFERENCES

ANDERSON, C.S. (1982) The search for schoolclimate: a review of the research, *Review of Educational Research*, 52, pp. 368–420.

BASINGER, K.S. & GIBBS, J.C. (1987) Validation of the Sociomoral Reflection Objective Measure—Short Form, *Psychological Reports*, 61, pp. 139–146.

BEEM, A.L., BRUGMAN, D., HØST, K. & TAVECCHIO, L.W.C. (in preparation) *A Generalizability Study of Moral Atmosphere in High Schools*.

BRUGMAN, D., HØST, K., VAN ROOSMALEN, M. & TAVECCHIO, L.W.C. (1994) Moreel klimaat van scholen voor voortgezet onderwijs: de perceptie van de leerlingen [Moral atmosphere in secondary schools: students' perceptions], *Comenius*, 14, pp. 64–82.

BRUGMAN, D., TAVECCHIO, L.W.C., VAN OS, B.J. & HØST, K. (1995) *Students' Perception of Moral Atmosphere in Secondary Schools, their Moral Reasoning Competence, and their Practical Moral Judgement in School*, Paper presented at the 21st Conference of the Association for Moral Education, New York, November 1995.

HIGGINS, A. (1991) The just community approach to moral education: evolution of the idea and recent findings, in: W. L. KURTINES & J. L. GEWIRTZ (Eds) *Handbook of Moral Behavior and Development*, vol. 3. *Application*, pp. 111–141 (Hillsdale, NJ, Lawrence Erlbaum).

HIGGINS, A., POWER, C. & KOHLBERG, L. (1984) The relationship of moral atmosphere to judgments of responsibility, in: W. L. KURTINES & J. L. GEWIRTZ (Eds) *Morality, Moral Behavior and Moral Development*, pp. 74–106 (New York, Wiley).

KOHLBERG, L. (1981) Exploring the moral atmosphere of institutions: a bridge between moral judgment and moral action, in: L. KOHLBERG (Ed.) *The Meaning and Measurement of Moral Development*, pp. 35–53 (Worcester, MA, Clark University Press).

KOHLBERG, L. (1984) *Essays in Moral Development,* vol 2. *The psychology of moral development* (San Francisco, Harper & Row).

KOHLBERG, L. (1985) The just community approach to moral education in theory and practice, in: M. W. BERKOWITZ & F. OSER (Eds) *Moral Education: theory and application,* pp. 27–87 (Hillsdale, NJ, Lawrence Erlbaum).

NIAS, J. (1989) *A Study of Teaching as Work* (London, Routledge).

POWER, C. (1985) Democratic moral education in the large public high school, in: M. W. BERKOWITZ & F. OSER (Eds) *Moral Education: Theory and Application,* pp. 219–238 (Hillsdale, NJ, Lawrence Erlbaum).

POWER, C., HIGGINS, A. & KOHLBERG, L. (1989) *Lawrence Kohlberg's Approach to Moral Education* (New York, Columbia University Press).

SCHOLTEN, I. & SCHULER, C. (1996) *Zorg voor het psychisch welzijn als uitgangspunt voor een positief moreel klimaat [Care for Students' Psychological Well-being as a Starting-point for a Positive Moral Atmosphere]* (Leiden University, Centre for the Study of Education and Instruction).

STAMS, G.J., ROOSMALEN, M. VAN, HØST. K., BRUGMAN, D. & TAVECCHIO, L.W.C. (1994) *Vragenlijst Sociale Relaties [Sociomoral Reflection Objective Measure—Short Form, Dutch translation]* (Leiden University, Centre for Child and Family Studies, Centre for the Study of Education and Instruction).

STATISTICS NETHERLANDS (1996) *Zakboek onderwijsstatistieken 1996, onderwijs cijfergewijs [Pocket-book Educational Statistics 1996, Education in Figures]* (The Hague, Sdu uitgevers/CBS).