Factors associated with disruptive behaviour in the classroom

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This paper examines the relationships of pupils' on-task orientation at school and their opposition to teachers with perceived cognitive competence, perceived relevance of schoolwork, and the belief that going against school norms increases peer status. The study was conducted as a survey among a national representative sample of 3834 pupils in Years/Grades 6 and 9 who were attending Norwegian schools. The results indicate that low perceived cognitive competence, perceived low relevance of schoolwork, and the belief that norm-breaking behaviour elicits peer approval all increase the likelihood and incidence of off-task behaviour and opposition towards teachers. Results also suggest a tendency for perceived cognitive competence and perceived relevance of schoolwork to be more important predictors of on-task orientation than opposition to teachers, whereas the belief that breaking school norms increases peer status seems to be a more important risk factor for opposition to teachers than for off-task orientation.

Introduction

National studies indicate that a lack of on-task orientation and troublesome behaviour have become an increasing problem in Norwegian schools (Nordahl & Sørlie, 1998; Ogden, 1998), as in schools in other western societies (Chazan, Laing, & Davies, 1994; Winkley, 1996). It is therefore important to explore to what extent different factors influence such behaviour. The main purpose of the present study is thus to investigate how perceived cognitive competence, perceived relevance of schoolwork and the normative belief that going against school norms increases peer status (belief about peer-status enhancement), are associated with off-task orientation[1] and opposition to teachers. This investigation will be conducted within a motivational, psychological, theoretical framework, and practical pedagogical implications of findings will be discussed.

Teachers are prone to intervene when pupils show off-task behaviour. Off-task orientation can therefore become an important source of conflict between pupils and teachers, and disputes over off-task orientation might lead to opposition to teachers. Off-task orientation is therefore treated as a predictor of opposition to teachers in the present study.

Cognitive Competence

For the purposes of this paper, perceived cognitive competence is defined as a pupil's general feeling of doing well at school. Such competence often derives from prior experience of accomplishing academic tasks as well as from the expectation of future success. This anticipation of success probably promotes and enhances on-task orientation. Several theories identify the anticipation of success as an important motivational factor. In her "expectancy-value-theory", Eccles (1983) argues that anticipation of success is one of three major components contributing towards tasks being perceived as relevant and valuable. According to Atkinson (1964), motivation is highest when the task is perceived as appropriately challenging and the chance of successful accomplishment is about 50%. Bandura (1997) maintains that a personal belief in self-efficacy influences how much effort an individual will expend and how long she or he will persevere in the face of obstacles and even failures. However, according to Covington (1984), the combination of effort and failure may be a serious threat to self-worth. Pupils with fragile academic self-esteem may therefore be reluctant to invest much effort in academic tasks. Faced with the prospect of failure and the attendant damage this can have on self-esteem, some pupils may choose to dawdle instead of remaining on-task. The perception of academic competence is therefore in this conceptual model assumed to have a direct effect upon on-task orientation.

A learning climate characterised by high levels of social comparison is likely to threaten the feeling of cognitive competence among pupils (Ames & Ames, 1981). The introduction of grades into the secondary school as an evaluation system in Norway may stimulate social comparison and reduce the general feeling of cognitive competence among pupils. Cognitive competence is therefore assumed to be lower among Year 9 pupils than among Year 6 students. Moreover, Eccles and Midgley (1990) assert that young adolescents are especially vulnerable to social comparison and emphasis on competition because of heightened self-awareness in the process of finding their own identity. This characteristic among young adolescents is likely to result in stronger associations between cognitive competence and on-task orientation among Year 9 than among Year 6 pupils.

Poorly perceived cognitive competence is likely to indicate that the pupil has experienced repeated failures in school subjects. Such failures are probably associated with frustrations and, possibly, the development of antipathy towards teachers who are believed to be responsible for the experience of failure, through forcing the pupil to engage in tasks that lead to letdowns, by not giving enough

support, or even by making failures public. This may in turn lead to aggressive behaviour towards teachers. However, poor cognitive competence may also indicate reduced general self-confidence (see, e.g., Harter, 1982). Thus it is possible that pupils with low cognitive competence may lack the courage to openly oppose teachers. Conflicts between teachers and such students may therefore primarily occur as a consequence of students' coping responses to stress resulting from failure, fear of failure, or perceived teacher criticism of one's effort or ability. Such coping reactions may involve aggressive responses in addition to attempts to avoid the situation that produces stressful experiences. The association between perceived academic competence and opposition to teachers is therefore assumed to be mediated by off-task orientation.

According to Rosenberg (1968), people are likely to value most highly activities or subjects that they do well in, and less highly activities or subjects in which they tend to fail. Moreover, commitment to a task is a necessary condition for experiencing stress or frustrations (see, e.g., Lazarus, 1991), and reducing one's commitment to a difficult task can, in the short run, be an effective way of reducing stress. One way pupils may reduce the consequences of failure is to reduce the value or relevance they assign to schoolwork accordingly. Since pupils with low perceived cognitive competence are most likely to fear failure, such a devaluation of the importance of schoolwork is likely to be most common among these pupils. Perceptions of cognitive competence are therefore assumed to predict the perceived relevance of schoolwork.

Perceived relevance of schoolwork

Several theorists have emphasised the role of personal relevance for motivation. According to Atkinson (1964), whose ideas are influenced by Lewin (1935), incentive value (defined as the relative attractiveness of a goal) has a strong bearing on motivation. Eccles (1983) emphasises the intrinsic value of the task, namely, the enjoyment an individual obtains from engaging in the activity and the utility value of the task as a main contributor to motivation. The link between perceived relevance of schoolwork and on-task orientation has also been indicated by empirical research (Cennamo & Braunlich, 1996; Firestone & Rosenblum, 1988; Mortimore, Sammons, Stoll, Lewis, and Ecob, 1988; Stevenson, 1990).

In late modern societies, a well-educated populace is considered crucial for economic growth and social integration. The need for a high level of competence among the population has resulted in young people spending more years at school and in the curriculum in compulsory schools becoming more theoretical. For less academic pupils and for those who prefer practical subjects, it may have become more difficult to find schoolwork appealing or understand the future relevance of schoolwork. It is therefore not surprising that previous research has found that a substantial percentage of pupils in western countries perceive their schoolwork as boring and of little interest or meaning (Goodlad, 1984; Stevenson, 1990; Thuen

& Bru, 2000). This perception is generally more pronounced among secondary school pupils than among primary school pupils (Eccles & Midgley, 1990). Certain features of schools in western countries probably help to explain why so many young people think that schoolwork is of limited relevance. Birkemo (2000), for example, claims that much of the curriculum content in Norwegian secondary schools is based on past traditions that have little or no bearing on the concerns and priorities of many young people. He also notes that a Norwegian preoccupation with theory turns many pupils off schoolwork, which they find neither interesting nor relevant. Moreover, expectancy-values theories of motivation (see Eccles, Wigfield, & Schiefele, 1998) state that effort is likely to be a result of the interplay between the value of an incentive and the expectancy of success. According to this understanding of motivation, a low perceived value of schoolwork could lead to the anticipation of success becoming a less critical factor for effort. This mechanism could counteract the effect of increased vulnerability to social comparison among young adolescents and lead to the anticipation of a weaker association between perceived cognitive competence and on-task orientation among Year 9 pupils.

The association of the perceived relevance of schoolwork with opposition to teachers is probably mainly mediated through off-task orientation reflecting disputes between pupils and teachers concerning the pupils' reluctance to accomplish school tasks. However, it is possible that the pupils who find school subjects to be of little relevance perceive the school as a worthless institution whose norms one should oppose. As the teacher is seen as representing this system, he or she may well be the target of such anti-school sentiment. Moreover, teachers who have little ability to convey their subject in a way that pupils find interesting and meaningful may earn the disrespect of pupils. In turn this may increase the likelihood of pupils displaying oppositional behaviour towards teachers. Such mechanisms could create a more direct link between perceived relevance of schoolwork and opposition to teachers.

Finally, to achieve cognitive consonance among attitudes (compare Festinger, 1957), a devaluation of the relevance of schoolwork is likely to be associated with changes in related attitudes and beliefs, such as beliefs concerning what makes one popular among friends. To buttress this devaluation of schoolwork, pupils may seek the company of pupils who place a low or negative value on schoolwork. For present purposes, it is therefore assumed that perceived relevance of schoolwork influences normative beliefs concerning what makes one popular.

Pursuit of peer approval

The pursuit of social goals is an integral aspect of classroom life. In that context, the search for peer approval is probably important for most, if not all, pupils (Birch & Ladd, 1996). Wenzel (1989) found that adolescents were more concerned with social than learning goals. It is therefore not surprising that peer attitudes towards scholarship are found to affect how much effort pupils expend on schoolwork (see, e.g., Willis, 1978). This effect need not, however, be the result of coercive pressure

and may not be clearly perceived by pupils (Berndt & Keefe, 1996). Berndt, Miller, and Park (1989), asked pupils how much influence their friends had on three aspects of school adjustment: attitudes, behaviour in class, and academic achievement. Most of the pupils said that their friends did not affect these areas. Nevertheless, Berndt and Keefe (1996) conclude that peer attitudes are important in influencing pupils' motivation for schoolwork, and that pupils may underestimate peer influence because the process tends to work through subtle mechanisms that pupils are not always aware of. For example, some pupils unwittingly identify with and internalise peer attitudes and subsequently assume that these attitudes are self-generated.

The relationship between behaviour and conforming to group norms is amply supported by research on antisocial behaviour (see, e.g., Andrews & Bonta, 1998; Aronson, 1999; Farrington, 1996). However, in relation to on-task orientation and opposition to teachers, the effects of perceived expectations of significant others have received relatively little attention. This is reflected in the fact that relatively few motivational theories take explicit account of the effect such expectations have on how we behave (Weiner, 1992). The present approach seeks to broaden the traditional motivational psychological perspective by explicitly focusing on how perceptions of peer norms influence motivation and behaviour. In this respect the concept of "normative belief" taken from "the theory of planned behaviour" (Ajzen & Fishbein, 1980) will be applied. "Normative belief" is defined as such perceptions.

More specifically, the present study focuses on how the normative belief that going against school norms increases peer status is associated with on-task orientation and opposition to teachers. It is assumed that pupils who share this normative belief may use opposition to teachers in an instrumental way to achieve favour among peers. Such instrumental actions need not be related to academic frustrations or conflicts with teachers in connection with on-task behaviour. The belief that opposing school norms enhances peer status is therefore also assumed to show associations with opposition to teachers not mediated by on-task orientation.

Aim of the study

The main aim of the present study is to test a conceptual model that depicts how pupils' on-task orientation and opposition to teachers may be influenced by pupils' perceptions of their own cognitive competence, their perceived relevance of school-work, and the normative belief that going against school norms increases peer status.

A path model based on the preceding theoretical considerations is presented in Figure 1 for analysing such associations.

Method

Sample

The study is based on a representative national sample of 3834 Norwegian pupils from 227 school classes who were in Year 6 (12-year-olds) and Year 9
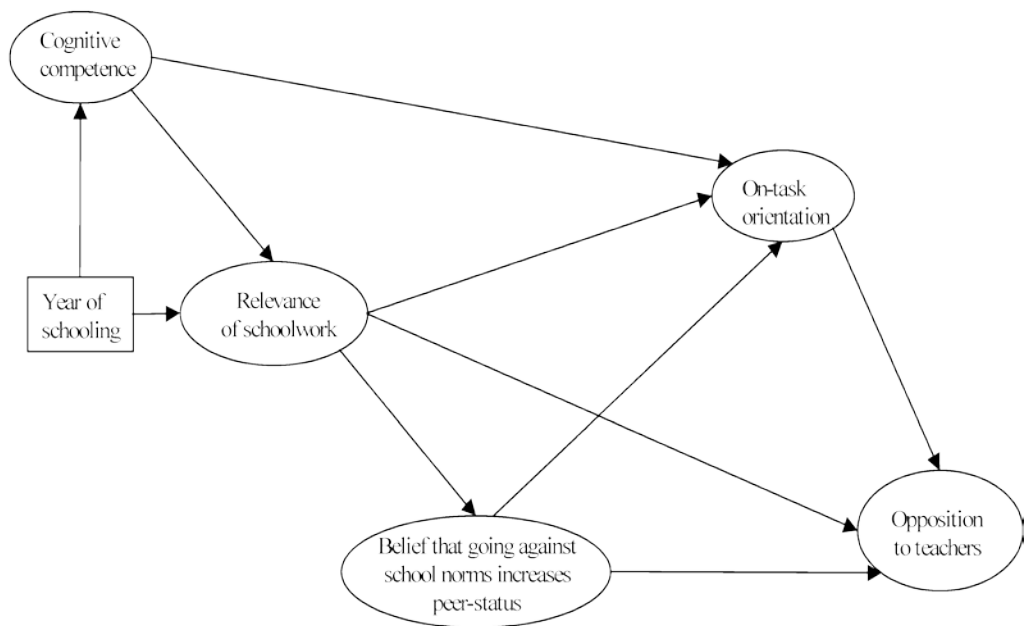
Figure 1. Proposed model of the associations between study variables

(15-year-olds). Pupils were recruited from 47 randomly selected school districts. The sample of districts is representative according to the Norwegian Central Bureau of Statistics standard for municipality classification (Statistics Norway, 1994). Within each district, two primary schools and one secondary school were selected. If the district had more than this number of schools, schools were randomly selected. The sub-sample of Year 6 pupils included 1828 respondents (879 males and 949 females), whereas the sub-sample of Year 9 pupils included 2006 respondents (984 males and 1022 females). The response rate was 87%.

Measures

Perceived *cognitive competence* was assessed using three items derived from the cognitive competence dimension of Harter's Perceived Competence Scale for Children (Harter, 1982). They were slightly modified to avoid conceptual overlap with outcome variables and to focus on perceived competence in relation to schoolwork. For Year 9 pupils the correlation coefficient between perceived cognitive competence and grades (mathematics and native language, that is, Norwegian) was 0.57. This is approximately the same association as found by Harter (1982). In Norway Year 6 pupils are not graded for academic achievement, and it is therefore not possible to provide the corresponding information for this level.

Pupils' perceptions of the *relevance of schoolwork* were assessed using a semantic differential scale that included three items on how useful, meaningful, and interesting they found schoolwork. These items had a 6-step Likert scoring format.

Pupils' belief concerning the extent to which *going against school norms increases peer status* was assessed on the basis of three items. All the items on normative belief were rated by a 4-step scoring format that ranged from "this applies very much" to "this applies very little".

Pupils' perceptions of *on-task orientation* were assessed using four positively stated items designed to measure concentration. These items were rated by pupils using a 4-step scoring format with the response options: "disagree strongly", "disagree a little", "agree a little", and "agree very much". Three negatively stated items were used to measure *opposition to teachers*. The response options were: "never", "sometimes", "almost every week", and "almost every day". (See Figures 2 and 3 for the wording of the items included in the study.)

Procedures

The pupils were asked to complete a questionnaire during an ordinary 45-minute classroom period with a teacher present. To ensure optimal completion of the questionnaire (including returns from dyslexic pupils), teachers read each question aloud. To avoid pupils influencing each other's responses, the questionnaires were administered, as far as possible, at the same time for each class in each school.

Statistical analyses included reliability testing (Cronbach's alpha) using SPSS program (Norusis, 2000). Path analyses were conducted by structural equation
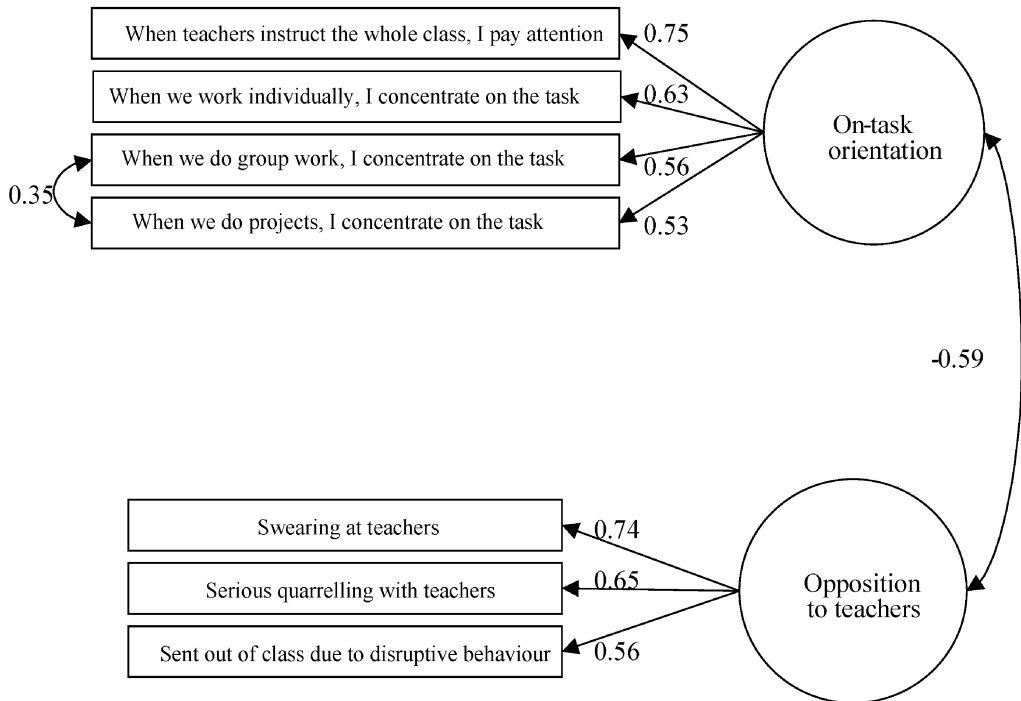

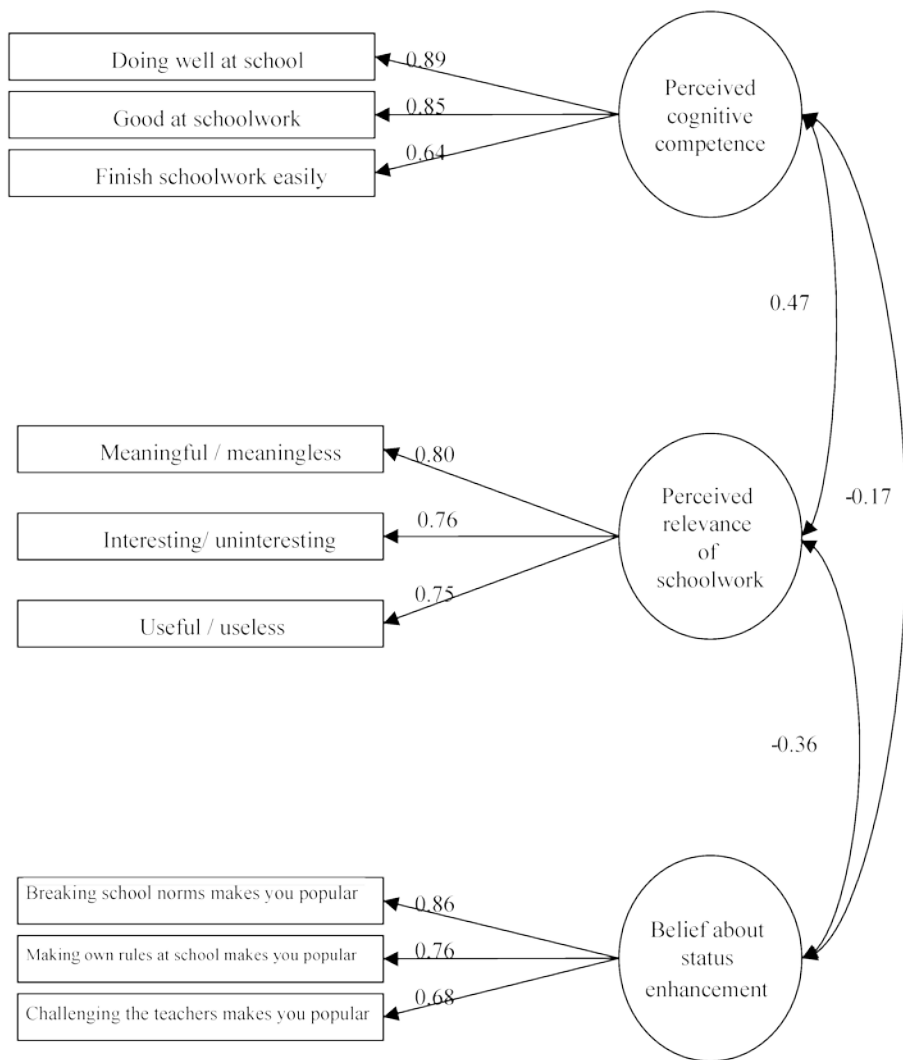Figure 2. Measurement model for the assessment of pupil behaviour (N=3834)

Figure 3. Measurement model for variables predicting pupil behaviour (N=3834)

modelling using the AMOS software package (Arbuckle & Wothke, 1999). Variables included in the study are of a categorical nature. The asymptotical distribution-free approach to estimation is best suited for handling such variables. This approach requires (1) that the sample size is greater than 1.5K (K-1), where K is the number of observed variables (Jöreskog & Sörbom, 1996b); (2) the assumption that underlying each observed categorical variable is a continuously distributed latent counterpart; and (3) that the co-variances between these latent counterparts are multivariate and normally distributed (Arbuckle & Wothke, 1999). In the present study, the sample size is far beyond the number needed to satisfy the first criterion. Moreover, none of the latent counterparts is likely to be non-continuous. Finally, the

distributions of co-variances were tested by the PRELIS-program (Jöreskog & Sörbom, 1996a). The tests indicated that the third criterion had also been met.

Following the procedures of Jöreskog (1993), the present application of structural equation models (SEM) is not strictly confimatory, but what is called "model generating", "a situation by far the most common" (Jöreskog, 1993, p. 295). Following this procedure, a tentative solution is tested in the first place. Second, the model may be modified based on suggestions from the statistical output if it is regarded as conceptually meaningful.

Goodness of fit of the model is evaluated in the present study according to criteria set by Hu and Bentler (1999). They recommend using the root mean square error of approximation (RMSEA) with a cutoff value of about .06 or less indicating acceptable fit. The RMSEA is supported by a 90% confidence interval (90% CI). The RMSEA should be supplemented with indices like the Tucker-Lewis Index (TLI), the Comparative Fit Index (CFI), with values above .95 indicating acceptable fit, and the standardised root mean squared residual (SRMR) with low values (below 0.08) suggesting a well-fitted model. However, since the AMOS program does not give the SRMR, the root mean square (RMR) will be reported instead.

Indexes including observed variables reflecting the different latent variables were computed for descriptive analyses. They were additionally computed as weighted sum-scores divided by the sum of the weights which themselves were in accordance with regression weights employed in the measurement models. Cronbach's alphas for these scales were: "Perceived cognitive competence", 0.83; "Perceived relevance of schoolwork", 0.80; "Going against school norms increases peer status", 0.80.

In addition, MlwiN (Rasbash et al., 2000) was implemented to assess the need for a multi-level approach to path analyses. These analyses showed that the variance components at class level were moderate when the year of schooling was controlled for. Class level variance components ranged from about 4% for perceived cognitive competence to about 9% for perceived relevance of schoolwork. A uni-level approach to analysis with class level added as a predictor variable was therefore considered appropriate.


Results

A central feature of structural equation modelling is the possibility of estimating how well the hypothesised models are able to regenerate the complete covariance matrix between study variables. The correspondence between the covariance matrix produced by the hypothesised model and the complete covariance matrix is regarded as the "fit" for the model. Assessment of the fit for measurement models is important for the assessment of the construct validity of latent variables. Moreover, the fit index for the whole path model is an indication of how the theoretical model matches the data.

The measurement model for on-task orientation and opposition towards teachers (see Figure 2) indicated a fair fit when error terms were not allowed to correlate

(RMSEA 0.064; 90% CI 0.055–0.070; p for close fit 0.003; CFI=0.92; TLI=0.91; RMR=0.027). Modification indices suggested that the fit would improve significantly if error terms for observed variables assessing concentration during group work and project work were allowed to correlate. Since some of the variance in on-task orientation is likely to be context-specific, the error terms were allowed to co-vary. When the error terms were allowed to correlate, a close fit was indicated for the measurement model (RMSEA 0.026; 90% CI 0.018–0.034; p for close fit 0.999; CFI=0.97; TLI=0.95; RMR=0.008; $\Delta\chi^2$ (1) =165,3 p<.01).

The measurement model for variables predicting on-task orientation and opposition towards teachers (see Figure 3) allowing latent variables to correlate indicated a close fit for this model (RMSEA 0.022; 90% CI 0.016–0.028; p for close fit 1.000; CFI=0.97; TLI=0.95; RMR=0.018). An inspection of regression weights suggested that the latent variable for perceived cognitive competence reflected the perception of being successful at school. As far as perceived relevance of schoolwork regression weights were concerned, it would appear that the observed variables reflected the latent variable for this construct in a rather balanced way. Finally, the magnitude and similarity of the regression weights of the latent variable ''Normative belief that going against school norms increases peer status'' (abbreviated to ''Belief about peer-status enhancement'') support the factorial validity of this variable.

The results of the estimates made according to the theoretical model presented in Figure 4 indicated a close fit for this model (RMSEA 0.029; 90% CI 0.026–0.032; p for close fit 1.000; CFI=0.97; TLI=0.96; RMR=0.027). However, they also indicated that allowing years of schooling to predict ''Belief about peer-status enhancement'' would improve the fit moderately, though statistically significantly ($\Delta\chi^2$ (1)=42.6 p<.01).
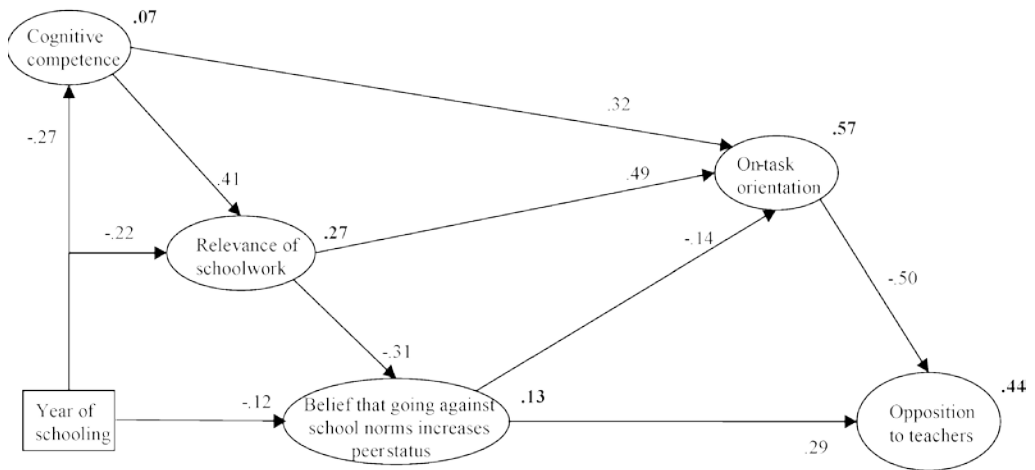
Note that all coefficients given are significant at the .01 level or better.

Figure 4. Structural model with standardised estimates (plain font) and squared multiple correlations (bold font) for the whole subject sample (N=3834)

Moreover, the results indicated that the direct effect between ''Perceived relevance of schoolwork'' and ''Opposition towards teachers'' could be removed without causing a reduced fit for the model. When these adjustments were made, fit improved slightly, though significantly (RMSEA 0.028; 90% CI 0.025– 0.030; p for close fit 1.000; CFI=0.98; TLI=0.97; RMR=0.021).

This model was also estimated simultaneously for Year 6 and Year 9 pupils. In order to ensure factorial invariance, the regression weights for the measurement models were set to be equal in the sub-samples. A close fit was also indicated for this approach (RMSEA 0.017; 90% CI 0.015–0.019; p for close fit 1.000; CFI=0.98; TLI=0.97; RMR=0.0019). The results presented in the Figures and Tables are in accordance with these models.

Results showed that "Cognitive competence" was relatively strongly positively associated with "On-task orientation''. Moreover, there was a significant tendency for this association to be particularly strong among Year 6 pupils (standardised regression weights for direct effects, Year 6 vs. Year 9 pupils: 0.42 vs. 0.27; testing for differences in regression weights yielded t=2.82, p<0.01). Associations with "Opposition to teachers'' were somewhat weaker. This association was mediated via "On-task orientation''.

Table 1. Standardised total effects for the prediction of pupil behaviour (N: Year 6 pupils: 1828; Year 9 pupils: 2006)

	On-task orientation			Opposition to teachers		
	Whole sample	Year 6	Year 9	Whole sample	Year 6	Year 9
Class level	20.28			0.20		
Cognitive competence	0.54	0.64	0.47	20.31	20.35	20.26
Relevance of schoolwork	0.53	0.42	0.54	20.36	20.28	20.34
Belief that going against school norms increases peer status	20.14	20.16	20.11	0.36	0.37	0.31
On-task orientation				0.50	0.47	0.49
R-squared	0.57	0.55	0.49	0.44	0.40	0.40

Note: All coefficients are significant at the .01 level or better.

Table 2. Means and standard deviations for indexes computed on the basis of observed variables reflecting the different latent variables

	Whole sample		Year 6		Year 9		
	Mean	SD	Mean	SD	Mean	SD	Scoring range
Perceived cognitive competence	2.02	0.65	2.17	0.56	1.88	0.70	0–3
Perceived relevance of schoolwork	3.39	1.09	3.71	1.05	3.10	1.04	0–5
Belief that going against school norms increases peer status	0.86	0.77	0.71	0.74	1.00	0.78	0–3
On-task orientation	0.70	0.51	0.57	0.45	0.82	0.52	0–3
Opposition to teachers	0.32	0.51	0.21	0.41	0.42	0.58	0–3

"Perceived relevance of schoolwork" showed a relatively strong association with "On-task orientation". In contrast to the results for "Perceived cognitive competence", this association was stronger among Year 9 than Year 6 pupils (standardised regression weights for direct effects, Year 6 vs. Year 9 pupils, 0.34 vs. 0.51; testing for differences in regression weights yielded t=5.10, p<0.01).

As for "Perceived cognitive competence", "Perceived relevance of schoolwork" yielded weaker associations with "Opposition to teachers" than with "On-task orientation", and the relationship with "Opposition to teachers" was mediated via off-task orientation. Descriptive analyses showed that 19.1% of the pupils had mean scores in the lower half of the scoring range for "perceived relevance of schoolwork", suggesting that nearly a fifth of pupils had marked difficulties finding schoolwork relevant. Scores for "Perceived relevance of schoolwork" were significantly higher among Year 6 pupils. Among this sub-sample, 12.0% scored in the lower half of the scoring range, compared to 25.6% for Year 9 pupils.

Scores for "Belief about peer-status enhancement" showed a somewhat different pattern of associations with variables assessing pupil behaviour. For this variable associations were stronger with "Opposition towards teachers" than "On-task orientation". Moreover, descriptive analyses showed that 19.7% of the sample had mean scores in the upper half of the scoring range for this particular normative belief, indicating that approximately a fifth of the pupil sample clearly believed that going against school norms would increase peer status. Such a belief was significantly more common among Year 9 pupils. In this sub-sample 24.0% scored in the upper half of the scoring range, compared to 14.9% for Year 6 pupils.

In a follow-up analysis, gender was entered as a control variable. Modification indices suggested that "Gender" should be allowed to predict "Belief about peer-status enhancement" and "Opposition to teachers". In the follow-up analysis, "Gender" was therefore allowed to predict these two variables. RMSEA for this model was 0.030 (90% CI 0.027–0.032; p for close fit 1.000). Including "Gender" as a control variable only marginally affected the estimates commented upon earlier.

Discussion

The main aim of the present study was to investigate how pupils' on-task-orientation and opposition to teachers could be influenced by pupils' perceptions of their own cognitive competence, their perceived relevance of schoolwork, and the normative belief that going against school norms increases peer status (belief about peer-status enhancement). The empirical approach included a path analysis which was based on a theoretical model that implied a causal relationship between the study variables as indicated in Figure 1. The results showed a close fit for the path model employed with the adjustments indicated by Figure 2, namely (1) removal of the direct link between perceived relevance of school work and opposition to teachers, and (2) allowing the year of schooling to also predict belief about peer status.

Cognitive competence

Perceived cognitive competence presented relatively strong associations with on-task orientation. Results are thus, not surprisingly, in line with those theories that underscore the anticipation of success as being important for motivation (e.g. Bandura, 1997; Eccles, 1983).

Perceived cognitive competence was also significantly associated with opposition to teachers. As assumed, this association was mainly mediated via off-task orientation. The association of perceived cognitive competence with opposition to teachers was, however, more moderate. The more moderate association between perceived cognitive competence and opposition to teachers may suggest that these pupils do not possess the confidence to oppose teachers. Perhaps these pupils also attribute failures more to their own lack of ability than to blaming teachers for their failures. Therefore they might not feel the need for aggressive or oppositional behaviour towards teachers. It is also possible that teachers, who are trained to understand readiness for learning, respond more adequately to off-task orientation that is linked to poorly perceived cognitive competence than to off-task orientation originating elsewhere.

Relevance of Schoolwork

Results suggest that among Year 9 pupils, quite a large percentage find schoolwork only moderately relevant. In this way results from the present study lend support to previous studies in western societies indicating that a substantial percentage of pupils in higher year levels find schoolwork only moderately interesting or meaningful (compare Eccles & Roeser, 1999). Moreover, perceived relevance of schoolwork showed relatively strong significant associations with disruptive behaviour (especially for off-task-orientation among Year 9 pupils). The link between perceived relevance of schoolwork and cognitive competence and the indirect effect via the belief about peer-status enhancement all suggest that reducing the relevance of schoolwork may be a coping strategy that pupils use to protect their self-worth against the negative effects of academic failures (compare Rosenberg, 1968). However, results also indicate that pupils with relatively high scholastic attainments may have difficulties finding schoolwork relevant and that this could also lead to off-task orientation among these pupils. Consequently, the results suggest that a lack of perceived relevance of schoolwork may be an important contributor to off-task-orientation among Norwegian pupils, especially those in secondary schools.

Perceived low relevance of schoolwork also produced a significant association with opposition to teachers. This association was primarily mediated via off-task orientation, suggesting that opposition to teachers based on perceived low relevance of schoolwork might be connected mainly to disputes over off-task orientation. However, the indirect link via the belief that going against school norms enhances status may indicate that little perceived relevance of school may lead pupils to seek inclusion in subcultures that espouse anti-school norms and, for example, reward

oppositional behaviour to teachers. For pupils included in such subcultures or trying to be included, opposition to teachers may then be a means of achieving inclusion in the subculture or attaining a higher standing in the group.

The belief that going against school norms increases peer status

The fact that relatively little of the association between the belief about peer-status enhancement and opposition to teachers was mediated via off-task orientation may further underscore that opposition to teachers could be solely linked to social processes among peers that actually have little to do with schoolwork. Moreover, about 20% of the pupils clearly stated their belief that going against school norms increased popularity among peers. The results seem to reflect the fact that, for many pupils, a conflict exists between school norms and goals they perceive their peers want them to pursue, and that striving for approval among peers may lead them to behave disruptively.

On the other hand, the scores for the belief that going against school norms increases status accounted only for a relatively small amount of the variance in on-task orientation. This may indicate that such belief is only moderately linked to motivation for schoolwork. The modest associations between perceived cognitive competence and the assessed normative belief might further underline this interpretation. This finding suggests that the belief that going against school norms increases peer status is almost as prevalent among pupils who are high achievers as among those who are low achievers. It seems that even some bright pupils might be tempted to oppose their teachers when this is perceived to enhance peer status.

The belief that going against school norms contributes to social approval was negatively correlated with perceptions of schoolwork being relevant. This result accords with the assumption that a perceived low relevance of schoolwork tends to be in consonance with other related attitudes or beliefs, such as the belief about peer-status enhancement. Thus results may reflect the fact that perceived low relevance of schoolwork might facilitate a counter-school pupil culture.

Differences between year levels

Results indicate that Year 9 pupils have more negative perceptions of negative attitudes towards school than Year 6 pupils. Adolescent yearning for independence might underlie such a shift in sentiments towards school. The direct effects of the scores for each year level on the scores for normative beliefs could reflect such non-school-related mechanisms. However, the associations of year level with perceived cognitive competence and relevance of schoolwork indicate that the negative shift in sentiment towards school among Year 9 pupils could also be due to secondary schools not being adequately adapted to the needs of adolescents. This interpretation is supported by previous Norwegian and American research (compare Eccles & Roeser, 1999; Grepperud, 2000). Moreover, the relatively poor cognitive competence

among Year 9 pupils could have resulted from the introduction of grades as an evaluation system at the secondary school level in Norway. Grades may stimulate social comparison, which in turn may have a negative impact on the perceived competence of pupils (compare Ames & Ames, 1981).

Results indicate that the more marked difficulties in finding schoolwork relevant are twice as prevalent among Year 9 pupils as Year 6 pupils. Moreover, a perceived lack of relevance showed the stronger associations with off-task orientation among Year 9 pupils. In line with previous research (compare, e.g., Birkemo, 2000), these results suggest that low perceived relevance of schoolwork is especially critical for a commitment to scholastic effort among secondary school pupils.

Eccles and Midgley (1990) assert that young adolescents are especially vulnerable to social comparison because of heightened self-awareness in a process of finding their own identity. This assertion ought to imply stronger associations between perceived cognitive competence and on-task orientation and opposition towards teachers among Year 9 than among Year 6 pupils. In the present study an opposite tendency was detected for on-task orientation. The weaker association between cognitive competence and on-task orientation among Year 9 pupils is likely to indicate that the effects of increased vulnerability to social comparisons are outweighed by the decline in perceived relevance of school work from the 6th to the 9th grade.

Conclusions and practical implications

Results imply that on-task orientation and opposition to teachers are influenced by perceived cognitive competence as well as perceived relevance of schoolwork and the belief that going against school norms increases peer status. The pattern of results seems to suggest that the former two factors are the prime predictors of on-task orientation, whereas the three factors contribute more equally to any opposition to teachers. The results appear to indicate that in order to increase on-task orientation as well as to reduce opposition to teachers, combinations of different measures should be implemented in order to influence all three factors. Suggested measures likely to be important elements in interventions to improve student behaviour and learning are indicated below. Research that tests the effectiveness of such interventions is required. Ideally this should be designed to test the effects of single intervention components as well as the different combinations of the proposed measures.

Measures for improving perceived cognitive competence

To create a cooperative learning climate that reduces both social comparison and competition will probably be an important means of improving perceived cognitive competence and self-efficacy among pupils. Studies (Ames & Ames, 1981) indicate that a learning climate characterised by competition increases the risk of pupils

attributing failure to a lack of personal ability. Among pupils experiencing failure, this will probably reduce the belief in their own competence and motivation for schoolwork.

Another approach is "contract learning" (Covington, 1984). This involves pupils setting their own learning goals, establishing work agreements between pupils and teachers, developing plans to overcome learning obstacles, and then evaluating pupils according to these self-set learning goals. According to Covington (1984), such learning strategies are likely to allow for a more constructive interpretation of experiencing failure, strengthening the belief in one's own effort, which will then lead to the achievement of learning goals and consequently to an enhanced perception of cognitive competence and on-task orientation. This approach will also facilitate the adaptation of working tasks to the pupil's ability level and thereby increase the possibility of experiencing success which, in turn, may improve the pupil's perceived cognitive competence.

Previous studies have shown that low perceived cognitive competence is associated with too little emphasis on problem-focused coping strategies and too much on seeking relief from painful emotions (Dumont & Provost, 1999; Ficková, 1998). Learning strategies are important problem-focused coping strategies in the school context, and a lack of adequate learning strategies may lead to confusion about what to do and, in turn, to an absence of concentration and focus. Such findings are in concert with the theory of self-regulated learning which claims that pupils are more likely to be motivated to learn when they are capable of planning and accomplishing tasks in an independent/self-reliant way (Corno & Mandinach, 1983). Another way of improving cognitive competence may therefore be to explicitly prioritise training pupils in problem-solving skills and strategies for learning as well as routines for tackling schoolwork.

Measures for improving perceived relevance

The results suggest that improvements in pupils' perceived cognitive competence might also improve their perception of the relevance of schoolwork. However, perceived relevance could also be related to the content of the curriculum. To improve their perception of the relevance of schoolwork it is probably necessary to place more emphasis on the practical subjects in the secondary school curriculum. In a time when competence is becoming more and more obsolete, and cultural changes may be more apparent than previously, the curriculum also requires renewing in order to become more valid for today's young adolescents (compare Birkemo, 2000).

The perceived relevance of schoolwork is probably also related to the working methods employed. Previous research (Cooper & McIntyre, 1993; Hughes, 1997) has indicated that pupils think learning processes involving interactions with other pupils facilitate learning. In a national hearing, pupils voiced the opinion that they exercised too little influence on their schools' working methods (Grepperud, 2000), while another study (Thuen & Bru, 2000) found that perceived influence on

schoolwork is related to perceived relevance of schoolwork and on-task orientation. Greater pupil involvement in decision-making on working methods at school could lead to them being better adapted to pupils' preferred styles of learning, thereby increasing on-task orientation. McCombs (1994) asserts that the strategies that maximise individual motivation and performance are the ones that respect an individual's needs for autonomy, self-determination, and personal control. Giving pupils more influence over the choice of working methods would, however, require that pupils be given the opportunity to gain more insight into learning strategies and how to regulate their own learning processes.

Measures for counteracting negative peer influence

According to results of this study, measures that improve perceived cognitive competence and relevance of schoolwork may to some degree reduce the belief that going against school norms increases peer status. However, additional means seem to be needed to prevent or change such beliefs. Maintaining a continuous dialogue about which standards of behaviour facilitate a good learning climate represents one such measure. This dialogue could also help to throw light on pupils' genuine attitudes towards school, and consequently possibly correct negatively biased misperceptions of peers' attitudes and behaviours. Research on alcohol and drug abuse has shown that adolescents tend to overestimate their peers' use of such substances (Cook, Anson, and Walhli, 1993). Similarly, it is not unlikely that they will tend to overestimate their peers' negative attitudes towards school. To counteract the effects of anti-school norms among pupils, teachers should also highlight and act upon regulations that promote on-task orientation. This enforcement of regulations is likely to be facilitated by common attitudes among teachers and by cooperation with parents (compare, e.g., Chrispeels, 1992).

Another way of counteracting negative peer influences is to separate pupils who have a bad influence on each other. However, previous research indicates that disruptive pupils are often unpopular with peers and may also have difficulties making new friends (Coie & Koeppl, 1990; Wenzel, 1991). One should be aware that separating such pupils from their friends at school could make them socially isolated. Without friends to give them praise and encouragement they may be likely to drop out of school (Parker & Asher, 1987).

An alternative or supplementary approach would be to attempt to improve the quality of friendship among pupils. Teachers could employ cooperative-learning techniques to achieve this. Such techniques not only enhance pro-social behaviour and tolerance of other people but also promote academic learning (Furman & Gavin, 1989). Social skills training might also affect friendship quality (Coie & Koeppl, 1990; Mize & Ladd, 1990). Such initiatives could seek to foster empathy, social altruism, and conflict resolution skills. One of the limitations of many social skills programmes is the lack of emphasis on motivating pupils to use their acquired social skills in socially relevant ways. Some pupils are more motivated by getting what they

want than in developing positive relationships with their peers (Putallaz & Sheppard, 1990). Integrating social skills training as part of social life at school and in the classroom, and creating a learning environment that encourages pro-social behaviour, are probably important for enhancing pupils' motivation for implementing their pro-social skills.

Many of the above suggested measures for improving on-task orientation require the teacher to have an influential position in the classroom, both socially and academically. Building good relationships with pupils is probably necessary if teachers wish to be able to achieve such a position in the classroom (compare Bru, Murberg, & Stephens, 2001). According to Hirschi (1969), attachment to a person or a social system renders the individual receptive to the norms of that person or social system and willing to live up to such norms. Positive teacher–pupil relationships are, moreover, likely to assist teachers in discovering their pupils' abilities and interests, so making it easier to adapt learning tasks to the cognitive and motivational characteristics of individual pupils.

Methodological considerations

After minor modifications the results showed a close fit for the path model employed. This, however, does not imply that other models would not fit the data just as well or even better than the current theoretical model.

Several other methodological limitations must be acknowledged. It is pertinent to note that our data are based on self-reports and may therefore be prone to reporting bias. The cross-sectional nature of the present study represents another of its limitations which implies that any proposed explanation for causal relations must be understood as tentative. Due to the study's cross-sectional nature the practical implications indicated are tentative suggestions that could instigate further research involving experimental or longitudinal designs to assess the effect of the different suggested measures.

Note

1. When referring to a lack of or little on-task orientation, the term off-task orientation will be used.

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