Chapter 6
General Conclusion and Discussion

This chapter is divided into three parts. In the first part the conclusions of the four studies presented in this thesis will be summarized and a general conclusion will be drawn. In the second part limitations of this study will be discussed. In the final part implications for future research and practice will be presented.

General conclusion

The aim of this study was twofold: To develop a reliable and valid new instrument to assess maladaptive social behaviour of students in secondary vocational education in the Netherlands, and to examine whether or not MSB of these students could be predicted by school context variables. Our research questions were:

1. Can maladaptive social behaviour of students in secondary vocational education in the Netherlands reliably be measured with a self-report questionnaire? What are the psychometric qualities of this instrument?
2. What is the external validity of this instrument?
3. Are there differences in the frequency of reported maladaptive social behaviour of students in secondary vocational education with respect to gender, ethnicity and educational level of their parents?
4. What is the relationship between school context variables and maladaptive social behaviour of students in secondary vocational education?

What is the internal validity of the new instrument?

In the conducted review on empirical articles assessing MSB we discovered that most studies tend to treat MSB that is shown in different contexts as a single concept. In some studies moderate correlations were reported between MSB outside and inside school (e.g., Vettenburg, 1998; Lamborn, Mounts, Steinberger, & Dornbusch, 1991; Hundleby, Carpenter, Ross & Mercer, 1982), indicating that only some of the students who show MSB outside school show it in school as well. This leads to the conclusion that it is useful to distinguish between these two types of MSB. Existing instruments to measure MSB often provide general statements, ignoring the school context. We argued that it is necessary to assess a broad range of MSB at school, varying from severe violations of school rules to slight norm violating behaviour. Accordingly, we defined MSB as behaviour that a majority of the reference group within a certain context considers undesirable or inappropriate. Severe MSB, like beating up a teacher or taking someone’s personal belongings, are usually incidents. On a daily basis teachers and students are often troubled by the behaviour of students who are not
considered to be severely maladaptive, but are nevertheless disturbing. Inspection of existing instruments to measure MSB led to the conclusion that they did not suffice our requirements. The instruments did either not a) measure a wide range of MSB, b) ask for concrete behaviours situated at school, c) were not suitable for adolescents, d) were not self-report measures, or e) did not ask for the frequency of MSB.

We constructed and internally validated the Questionnaire for Maladaptive Social Behaviour (QMSB). Several items were formulated based on observations, interviews with students and staff as well as a literature review. The QMSB was developed during the first data-wave in three pilots. Items were added, rephrased or deleted to optimize the internal structure of the questionnaire. The final version consists of 49 questions, referring to five categories of MSB: 1) MSB toward Schoolwork and Rules, 15 items, (e.g., playing truant, distracting other students), 2) Delinquent Behaviour, 11 items, (e.g., beating up a student, taking someone’s belongings), 3) Unfriendly Behaviour, 9 items, (e.g., making fun of a students, provoking a teacher), 4) Withdrawn Behaviour, 9 items, (e.g., not joining conversations, avoiding contact with other students), 5) Impolite Behaviour, 5 items, (e.g., not thanking a teacher when he/she does something for you). Students are asked to report how often they showed each type of MSB at school during the past three months on a five point Likert-scale (e.g., never, not often, sometimes, pretty often, very often). Explained variance of the questionnaire was 53%. Cronbach’s alpha’s of the five scales were computed for the whole sample, and separately for boys and girls, and for each course level (low, medium, high). Values varied between .73 and .92. In the second and third data wave Cronbach’s alpha’s for the whole sample and the sub-samples based on gender and course level varied between .85 and .97. Using Confirmatory Factor Analysis with maximum likelihood we assessed whether or not the five-factor structure of the questionnaire applied to the data in the second and third data wave. Results confirmed the five factor structure for the whole sample, and the samples of boys and girls (.94 ≤ NFI ≥ .97, .95 ≤ CFI ≥ 1.00). The most frequently reported MSB was MSB toward Schoolwork and Rules. Withdrawn Behaviour, Unfriendly Behaviour and Impolite Behaviour were reported less. Delinquent Behaviour was least reported.

Additionally, we tested a model with the five categories of MSB and an extra overall latent variable of MSB and compared this model to the model with only the five categories. We wanted to know whether it was advisable to treat different types of MSB as part of a common underlying factor. We had noticed that the intercorrelations between the five subscales were moderate to strong and varied between .35 and .65, and this suggested a common factor. Structural equation modelling showed the best fit indices for the model without the common factor. Except for this statistical support, preference was given to the model with only the five categories because it provided more detailed insight into the reasons why students exhibit specific types of MSB at school. Indeed, different context variables predicted specific types of MSB. Such insight is vital for educational practice. Teachers and other staff members need to know what effect environmental conditions have on student behaviour at school.
What is the external validity of the QMSB?

We conducted three studies to assess convergent and discriminant validity and hypothesized that the criterion set by Campbell & Fiske (1959) concerning the multitrait-multimethod matrix would be met. In the first study scores of the second data-wave of students on the five scales of the QMSB were correlated with scores of the third data-wave (test-retest). In the second study scores on the QMSB were compared with scores on the Youth Self Report (Achenbach, 1991), and in the third study scores of students on the QMSB were compared with teacher reports on the QMSB for teachers. In general convergent validity was obtained. We computed overall mean scores of the used questionnaires. The overall mean score on the QMSB at Time 2 was significantly related to the overall mean score on the QMSB at time 3 ($r = .48$), the overall mean score on the YSR ($r = .42$), and the overall mean score on the teacher report on the QMSB, ($r = .50$). Evidence for convergent validity was also found for each of the five categories of MSB. Convergent validity was confirmed in every study for the scales MSB toward Schoolwork and Rules, Unfriendly Behaviour and Withdrawn Behaviour. Evidence for the convergent validity of the scales Impolite Behaviour and Delinquent Behaviour was only found in the test-retest study.

Correlations between similar constructs were moderate. This was concordant to our hypotheses. We argued that the expected correlations should not be too weak, because these similar constructs should be related. However, the correlations should not be too strong either, because the QMSB was designed to measure similar, yet different constructs. In the first study, scores on the same instrument were compared at two measurement points. Moderate correlations showed the significant relation between the same constructs, but also showed sensitivity for changes over time. The second study showed a significant correlation between similar construct of the QMSB and YSR, but it also revealed that the instruments measured behaviour from a different point of view, in accordance with their purpose. The third study showed that similar constructs of the QMSB and the QMSB for teachers were significantly correlated, but that these self-reports are not interchangeable.

Discriminant validity was partly found. In two studies we observed that similar constructs correlated higher with each other than with other constructs from the other method. This indicated that similar constructs are indeed more alike than different constructs. The high intercorrelations of the five categories of MSB on the QMSB caused violations of the criteria put forward by Campbell and Fiske (1959). However, this topic was assessed and discussed in the construction phase by testing a competitive model with an underlying factor of general MSB. We argued on statistical and practical grounds that the original model with the five categories of maladaptive social behaviour was most useful: This model provided the best fit indices. We argued that being able to relate specific types of MSB to specific context factors will allow us to formulate concrete recommendations for practice.
Are there differences in the frequency of students’ MSB with respect to several background variables?

Data from the second data-wave were used to explore differences in the frequency of MSB between boys and girls. In accordance with our expectations, boys reported higher frequencies than girls for every type of MSB, even for Withdrawn Behaviour. Girls may show less MSB, because they have learned to cope with their frustration in different ways, for example by talking to their friends about it, or using very subtle ways of MSB.

When corrected for the influence of gender, no differences were found in the reported frequency of the different types of MSB between students of different ethnic origin, educational level of the students’ parents, and the course level that the students were attending. The educational level of parents is a commonly used representation of the students’ SES. Based on several studies (e.g., Bradley & Corwyn, 2002) we expected that students with a low SES would report more MSB than students with a high SES. We specifically expected that students with an immigrant background or with parents with lower educational levels would report more MSB, because these families suffer on average more often from economically deprived circumstances (Dijkman, 1996). In addition, different ethnic origins could co-occur with cultural differences, which could lead to more adaptional problems at school, and hence to more MSB. That we did not find differences with respect to these background variables can be due to the high rates of missing values on these background variables. Almost 30% of the data on ethnic background at time 2 was not available and over 40% of the educational level of parents was missing (also see the section Limitations in this chapter): Note that the number of students who reported to have a different ethnic origin was very low in our sample (Marocon/ Turkish, 3,8%; Surinam/Antillean, 2,4%). Differences between students with different ethnic origin and between the educational level of the students’ parents were therefore in this sample hard to assess reliably.

Students participating in lower course levels were expected to report more MSB, because their learning history might be less successful, a factor that is believed to increase MSB (Lotz & Lee, 1999). Evidently, these students could also have a lower IQ, which is also related to more MSB (Wentzel, 1994) but we did not assess this variable. In our sample, students of the different course levels did not differ in the frequency of the different types of MSB. It could be that MSB in vocational education is not dependent on the students’ educational background or IQ, but that it is predominantly determined by other factors, for example students’ goals and contextual features. Although it is perfectly possible that students enrolled in the lower course levels do not differ from students in the higher course levels with respect to their IQ or learning history, we cannot draw such a firm conclusion. We noticed, for example, that many of the students in the lowest course levels had been in the Netherlands shortly. They attended the low course levels mainly because of their poor Dutch communication skills, and not because of their competence level.
What is the relationship between school context variables and students’ maladaptive social behaviour?

Because previous research as well as our own research showed that gender differences in the frequency of MSB are consistent, we hypothesized that different environmental features influence MSB of boys and girls. We assessed the influence of school context variables on MSB separately for boys and girls. The models for boys and girls differed substantially. Girls’ MSB appeared hard to explain by school context factors (varying between 0 – 4% for the five different types of MSB). For boys, between 7 and 13% of the variance in MSB could be explained (7% in Delinquent Behaviour, 8% in Unfriendly Behaviour, 10% in Impolite and Withdrawn Behaviour, and 13% in MSB toward Schoolwork and Rules). Other researchers (e.g., Laufer & Harel, 2003; Garnefski & Okma, 1996) also reported that school context variables explained boys’ MSB better than girls’ MSB. Girls reported lower frequencies of MSB than boys and this could be an important reason why less variance could be explained in the girl sample.

The most important predictor for boys’ MSB was their School Alienation score (how much they wanted to change their school or study program). This variable influenced each type of MSB in boys. Remarkably, feelings of School Alienation were predicted by only one variable, namely students’ perception of Mutual Support. Boys who reported that they received support from fellow students at school felt more alienated from school. Note, that this relationship explained only 3% of the variance. We cannot but speculate about this relationship. Possibly, this result can be interpreted in line with the different student profiles that Hijzen, Boekaerts, and Vedder (submitted) and Boekaerts and Hijzen (2006) found in secondary vocational education. Based on data of the first data-wave, these researchers distinguished between four different profiles concerning students’ goal preferences, school alienation, school identification, and support from teachers and peers. They found that many immigrant students (particularly students coming from the Caribbean) belonged to the so-called ‘Weak communication/ school bonding profile’. Students in this profile scored high on School Alienation, but reported sufficient support from parents and peers.

We assessed whether or not the students in this profile reported more MSB than students of the other profiles. We found that the boys in this profile reported indeed more Delinquent Behaviour than the students of the other profiles, except for students in the ‘Frustrated Profile’. Interestingly, the students in the ‘Weak Communication/School Bonding Profile’ also reported more Unfriendly and Withdrawn Behaviour than the students in the ‘Disaffected Profile’, who were characterized by negative perceptions of instructional and emotional support from teachers and peers, who did not have clear goals, and felt slightly alienated from school.

Our post hoc analyses suggest that vocational students in the weak communication and school bonding profile are at risk, not only because they feel alienated from school but also because they show increased levels of maladaptive social behavior despite their reports that they experience enough support from peers. More research is needed to explore why these students display maladaptive social behavior. It should be noted that feelings of school alienation (e.g., wanting to change one’s study program) might be so
overpowering that they cannot be influenced easily by the school context. Future research should investigate how students’ feelings about school (school identification and alienation) can be influenced. School climate features that were relatively important in predicting boys’ MSB were their perception of Personal Respect (i.e., ‘at our school you can be yourself’) and some teacher related variables (i.e., Teacher Involvement, Teacher Humour, Teacher Learning Support). Boys who perceived that they could be themselves at school reported less Withdrawn and less Impolite Behaviour. Teacher Involvement and Teacher Learning Support were associated with, respectively, less Delinquent and less Unfriendly Behaviour. Surprisingly, boys’ perception of ‘funny teachers’ (Teacher Humour) was associated with more Withdrawn Behaviour. We can only speculate about this finding. Possibly some boys feel provoked, or do not know how to react to teacher humour and withdraw themselves more. Interestingly, Teacher Humour was associated with less MSB toward Schoolwork and Rules in the sample of girls. In their sample, perception of a competitive school climate was the most important predictor of MSB. It had a direct effect on the amount of MSB toward Schoolwork and Rules, and Unfriendly Behaviour.

The influence of Competitiveness on Delinquent and Impolite Behaviour was moderated by the girls’ feelings of School Alienation. Girls are apparently not encouraged by a competitive school climate. On the contrary it makes them want to change their study program more, and results in more MSB. Research by Hijzen, Boekaerts and Vedder (2006) showed that girls pursued social goals more than boys, and boys pursued competitive goals more than girls. Girls may get frustrated when they experience they need to be ‘the best’ at school. This could explain why girls report more MSB when they perceive a competitive climate whereas this does not matter for boys’ MSB. These results indicate that it may be useful to design separate types of tasks on occasion for boys and girls, or to let students choose between types of tasks. Some students, especially girls, seem to be more motivated in settings were no competitiveness is experienced, for example in cooperation tasks. Other students, especially boys, may be motivated by situations where they can prove themselves.

Limitations

Limitations of this study mainly concern generalizability of the results. This study was suffering from relatively high rates of missing data due to unanswered items and decline of participation of students over the data waves. Furthermore attention should be paid to the sample composition.

Sample Composition and Missing Data

During the first data-wave 1800 students completed the questionnaire for maladaptive social behaviour, at the second data-wave 931, and at the third wave 642. Boys are underrepresented in all data-waves. This is due to the fact that relatively many departments of health and welfare participated, which is traditionally chosen by many girls. Furthermore, students at the lower level in secondary vocational education are underrepresented, while students at the
higher level are overrepresented. Usually students at level one continue their education at level two. Because of the longitudinal character of the present study we chose to combine the data from students in level 1 and 2, and thus create samples from course levels ‘high’ (level 4), ‘medium’ (level 3) and ‘low’ (level 1 and 2). In the population 33% of the students attend courses at the low level, and 38 % at the high level (CBS; 05-01-2005). Most students had a Dutch ethno-cultural background and only a small percentage of the sample had a different ethno-cultural background. Furthermore, Table 1 shows that the majority of the parents on whom information was available, reported a low educational level (e.g., no education, primary school, preparatory vocational education). Fewer parents had completed their education at a medium level (e.g., secondary vocational education, general secondary education), and only a small number of parents were categorized as having a high educational level (e.g., higher professional education, academic education). Unfortunately, several students did not provide information on all of these background characteristics. This percentage of missing values increased in the second and third data-waves, because we were sometimes unable (due to missing codes) to link the background information to students’ responses of the second and third data-wave.

Table 1: Sample description; absolute number, percentage is shown between brackets.

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>632 (35.11)</td>
<td>285 (30.6)</td>
<td>120 (18.7)</td>
</tr>
<tr>
<td>Female</td>
<td>988 (54.89)</td>
<td>501 (53.8)</td>
<td>372 (57.9)</td>
</tr>
<tr>
<td>Missing</td>
<td>180 (10.00)</td>
<td>145 (15.6)</td>
<td>150 (23.4)</td>
</tr>
<tr>
<td>Course level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>249 (13.83)</td>
<td>65 (7.0)</td>
<td>67 (10.4)</td>
</tr>
<tr>
<td>Medium</td>
<td>529 (29.39)</td>
<td>217 (23.3)</td>
<td>139 (21.7)</td>
</tr>
<tr>
<td>High</td>
<td>1007 (55.94)</td>
<td>527 (56.6)</td>
<td>255 (39.7)</td>
</tr>
<tr>
<td>missing</td>
<td>14 (0.78)</td>
<td>122 (13.1)</td>
<td>181 (28.2)</td>
</tr>
<tr>
<td>Ethnocultural background</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dutch</td>
<td>1312 (72.9)</td>
<td>545 (58.5)</td>
<td>384 (59.8)</td>
</tr>
<tr>
<td>Marrocon &amp; Turksih</td>
<td>95 (5.3)</td>
<td>35 (3.8)</td>
<td>31 (4.8)</td>
</tr>
<tr>
<td>Surrinam &amp; Antillean</td>
<td>74 (4.1)</td>
<td>22 (2.4)</td>
<td>19 (3.0)</td>
</tr>
<tr>
<td>Other</td>
<td>157 (8.7)</td>
<td>52 (5.6)</td>
<td>36 (5.6)</td>
</tr>
<tr>
<td>missing</td>
<td>162 (9.0)</td>
<td>277 (29.7)</td>
<td>172 (26.8)</td>
</tr>
<tr>
<td>Educational level parents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>639 (35.5)</td>
<td>272 (29.2)</td>
<td>178 (27.7)</td>
</tr>
<tr>
<td>Medium</td>
<td>365 (20.3)</td>
<td>153 (16.4)</td>
<td>116 (18.4)</td>
</tr>
<tr>
<td>High</td>
<td>335 (18.6)</td>
<td>114 (12.2)</td>
<td>92 (14.3)</td>
</tr>
<tr>
<td>Miss</td>
<td>461 (25.6)</td>
<td>393 (42.2)</td>
<td>254 (39.6)</td>
</tr>
<tr>
<td>Total</td>
<td>1800</td>
<td>931</td>
<td>642</td>
</tr>
</tbody>
</table>

Although we were able to assess a large sample we have to keep in mind that the sample is not an accurate representation of the population in secondary vocational education in the Netherlands.
Decline of Participating Students

Another notable fact is the large decline of participating students. Except for this decline, it should be noted that the overlap between the measurement points is not complete. This means that some students participated only at the second and/or third data wave, or that their responses could not be linked (due to missing codes; see Procedure). The number of students that completed the questionnaire at both the first and second data-wave was 582. Overlap between the first and third data-wave is 438, and overlap between the second and third data-wave is 373 students. The number of students that filled in the questionnaires at all three measurement points is only 260.

Of the 1800 students that participated during the first data wave, 1218 students did not participate at the second data wave for several reasons (e.g., quit school, went to another course level, study program or class within the school, not present at the time of data gathering, graduated, organizational reasons). Available background data revealed that 39 % was male and 57 % was female, 17% followed a course at a low level, 30 % at a medium level and 52% at a high level. These percentages are approximately equal to the percentages in the original sample. Therefore, we have no reason to think that the decline between the first and second data wave caused serious interpretation problems.

Of the participating students at the first data-wave, 1362 students did not participate at the third measurement point. Available background data of this group showed that 39 % was male, 52% was female, and 16% attended a course at a low level, 29 % at a medium level and 55% at a high level. Again, this decline in the number of students does not indicate a seriously changed composition of our sample. However, we must take into account, that it is possible that the students, who did not participate at all data waves, were involved in more MSB. To test this hypothesis we compared MSB at time 2 of students who participated at time 2 and time 3 (N = 461), with students who only participated at time 2 (N = 467). Independent t-tests showed that only on Unfriendly Behaviour a difference was found (t (907,145) = 2.33, p = .02). The group that participated at Time 2 only (M = 1.68, SD = .78) reported more Unfriendly Behaviour, than the group who participated at Time 3 as well (M = 1.56, SD = .69). This result does not indicate major differences in reported MSB between participating and non-participating students. Unfortunately, we could not involve students who reported their MSB at the first data wave in this analysis, because the QMSB was still under construction at this point in time. Therefore these data are not completely comparable to the data gathered with the QMSB at the second and third data wave.

Directions for Future Research and Practice

Future Research

Although results of the external validation studies are promising, more research is necessary to gather additional information on the convergent and discriminant validity of the QMSB. It would also be interesting to explore its
possibilities in other types of secondary education and to assess whether or not the structure of the QMSB applies to its population. It is possible that not all statements of the QMSB are suitable for the population in general secondary education and that we need to formulate context specific statements to enhance the validity of the QMSB for these populations.

In this thesis we found that boys’ feelings of School Alienation (e.g., wanting to change their study program) was a very important predictor for all types of MSB. It would therefore be useful to assess how these feelings can be predicted, and more importantly, how they can be changed.

Important variables from a motivational, self-regulation perspective were not involved in this thesis. Students’ goal choice and the coping strategies they used, which are expected to influence the amount of MSB that is shown at school, were measured in the project simultaneously with the MSB. It would therefore be interesting to examine the relationship with these variables, MSB and School Alienation.

It is important to notice that the participating students were quite positive about their school. It would be interesting to analyze the data in a more person-oriented way. Analyses could be done to investigate whether certain classes or schools had to cope with high rates of specific types of MSB. Furthermore, cluster analyses could be conducted to investigate whether it is possible to identify different clusters of students based on their scores on the MSB and other relevant variables. Currently, we are carrying out analyses on the MSB variables, students’ perception of the organizational and social school climate, and students’ feelings concerning the importance they attach to their education, and their feelings of School Alienation. Preliminary results show that four profiles can be distinguished, namely the Adjusted Profile, the Bored Compliers, the In Danger Profile, and the Maladjusted Profile.

Students in The Adjusted Profile are characterized by low scores on MSB, positive perception of both the organizational and social school context, they felt that their education is important for their future (School Identification) and reported little School Alienation. These students seem to be motivated and happy at school. Students in the second profile, namely ‘The Bored Compliers’ reported low frequencies of MSB as well. However, this cluster is characterized by negative perception of the organizational and social school climate, and negative feelings of School Identification. Even though these students do not seem to like school and do not report a lot of MSB they conform themselves to the situation and do not report a high desire to change their study program. The ‘In Danger’ profile was not characterized by extreme highlights. They reported medium levels of MSB, medium perception of organizational and social school climate, medium level of School Identification and medium feelings of School Alienation. This group of students causes some trouble at school and might be in danger for worse. However, more research is needed to identify specific characteristics of this group, for example personal characteristics, learning difficulties, or coping strategies. Finally, the ‘Maladjusted’ profile is characterized by extremely high levels of MSB. Although their perceptions of the organizational and social school climate, and feelings of School Identification are not extremely negative, their feelings of School Alienation are very high. This group causes a lot of
problems at school, and seems to have motivation problems. They try to make school a fun place to be by trespassing school regulations.

We need to examine whether these profiles differ in their goal preferences, the coping strategies they use as well as in personal characteristics. We also need to investigate whether these different clusters can be found in other samples as well, and whether or not these clusters have psychological reality for teachers and students.

*Future Practice*

In educational practice, it seems crucial to pay attention to feelings from students about the study program and how these feelings may develop during the course of the study. By providing schools and teachers information on how to monitor students’ feelings about the study program and paying close attention to the students’ developing interests, teachers have a lever to make goal frustration a topic of discussion and reflection in school. With respect to preventing MSB, this seems especially important for boys. During the study program it may be important to check the boys’ feelings about school by asking them what they would like to do, and trying to link school tasks to their interests.

Because we found different models for boys and girls in this study, an important implication for schools is to consider the suitability of several school features (e.g., tasks composition, task rewards, and sanctions) separately for boys and girls. For girls it seems especially important to make the atmosphere and the tasks not competitive. It would be interesting to investigate whether offering different tasks (competitive vs. non-competitive) to boys and girls can help prevent MSB.
References


