Differences in problems of motivation in different special groups

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Summary

In general, children with a range of special needs have below-average motivation and perceived control. We have investigated whether differences exist between the types of problem in different special groups. Theory distinguishes between two types: low motivation and perceived control can be based either on a low perceived contingency, or on a low perceived competence. These two types of problem require different intervention strategies. The development of these types is related to several factors that might vary systematically in different special groups: specific histories of experience of success and failure, the possibilities of perceiving contingencies, and the kind of feedback and attributions from important others. We asked teachers to rate their pupils and found, in accord with our expectations, that children with social, emotional and behavioural problems, children with moderate learning difficulties and children with specific learning difficulties have more problems in perceived competence than children with physical or visual impairments. There was a non-significant tendency in the expected direction for children with physical impairments to have lower perceived contingency scores than the other groups. We conclude that caution is required in generalizing research findings from one special group to another, and in the application of intervention techniques that have been developed for one particular group.

Keywords: motivation, perceived control, special groups
Introduction

The frequency of experiences of success and positive feedback from important others are significant factors in the development of motivation and perceived control (Harter 1978; Skinner 1995). It is therefore not surprising that much attention has been paid to the development of motivation and perceived control in children who, because of a specific handicap or problem, can be expected to experience less success and to receive less positive feedback than do children on average. Indeed, there is ample evidence that in children with a range of special needs, motivation and perceived control is lower than normal. For example, the motivation and the perception of control in children with physical impairments (Kunnen 1992), children with moderate learning difficulties (Morvitz & Motta 1992; Chan 1994; Pintrich, Anderman & Klobucar 1994; Wilson & David 1994) and children with specific learning difficulties (Grolnick & Ryan 1990; Short 1992) is less than in non-handicapped children. These findings give rise to concern, and in The Netherlands, as in many other countries, intervention programmes for special groups have been developed and applied. However, little is known about the comparability of motivational problems in different special groups. This means that we do not know whether a programme that is successful in one type of special school can be applied in other types of special school as well.

In theory, two types of problem in motivation and perceived control are distinguished which relate to the type of children's previous experience of achievement and competence feedback. These two types require different types of intervention (Weisz & Stipek 1982). Because the typical characteristics of a specific disability or problem probably influence a child's experience of success and failure and the kind of feedback s/he receives, systematic differences in types of problems may exist between different kinds of special groups. For example, the kind of feedback and experience of success and failure will be quite different for a child with moderate learning difficulties compared with a child with visual impairments but no additional learning difficulties. In this paper, we will explore whether there is any evidence of such systematic differences. Firstly, we discuss which types of difference in motivational problems and their antecedents are distinguished in theory and research. We then formulate characteristics that are considered typical of each type of problem. Secondly, we consider whether and how these antecedents differ between special groups and formulate hypotheses concerning systematic differences between these groups in types of problem in
motivation and perceived control. Finally, we present the findings of a study of the prevalence of different types of problem in different special groups, and discuss their consequences.

**Two types of problems in motivation and perceived control**

Theoretically, two different types of problem with regard to motivation and perceived control have been distinguished. Weisz and Stipek (1982) distinguish between two dimensions of perceived control, the competence and the contingency dimension. For perceiving control over outcomes, children firstly have to perceive they have the competence to acquire their goal (perceived competence), and secondly, to perceive a contingency between their own actions and outcomes (perceived contingency). Bandura (1977) emphasizes a comparable distinction. This distinction resembles two patterns of attribution which are both related to low motivation and perceived control. Firstly, the tendency to attribute failure to a lack of competence and success to external factors is comparable with problems as described by Weisz and Stipek that relate the competence dimension. Secondly, Skinner (1995) found that children who are unaware of the cause of success and failure are further liable to a negative self-reinforcing cycle of low motivation, low perceived control and poor performances. This pattern of attribution fits in with the problems concerning the contingency dimension described by Weisz and Stipek. Craske (1988) distinguishes between helpless children (low contingency), and children who tend to avoid failure to protect their self-esteem (low competence). Moreover, Craske found that children classified as helpless did respond to attribution retraining, whereas children who tend to avoid failure to protect their self-esteem did not. This finding suggests that it is important to differentiate between both types of problems in any intervention. Weisz and Stipek also pointed out that both types of problems require different interventions.

**Behavioural and antecedent characteristics of both types of problems**

It is characteristic of children with a low perceived competence that they tend to attribute failure to incompetence and success to external factors. They tend to perceive themselves as lacking in competence and consider failure as an indication of their own lack of competence and thus as a threat to their self-
esteemed (Weisz & Stipek 1982). This means that success and failure are emotionally loaded. In school, these children often show a strong fear of failure: they try to avoid failure and are characterized by a reduced performance in achievement situations, especially following failure, by emotional reactions (fear, sadness, anger) following failure, by a need for highly structured tasks, and by a high dependency on positive feedback from the teacher (Hermans et al. 1991). However, some studies describe aversion behaviour as especially typical of older children with low perceived competence. Children may hide their fear of achievement situations behind an attitude of indifference and reluctance or aggressive behaviour (Nieuwenbroek 1993; Skaalvik 1993). They rigidly attribute all their failures and frustration to external circumstances or other persons. One special school teacher described this attitude as: ‘I am OK, you are not!’ Low perceived competence is found to be related to a history in which the child has been held responsible for his or her failures, punished or humiliated following failure, and has been exposed to excessive demands (Schmalt 1975; Messer 1993). Parents of children with a fear of failure tend to ignore success in their feedback, and to stress and punish failure: the child is held responsible for his or her failures, rather than for his or her successes (Trudewind 1975; Hermans et al. 1991).

Children with the type of problem related to the contingency dimension perceive no connection between their actions and environmental reactions. They typically do not know what has caused their successes and failures. In children with physical impairments and low perceived contingency we observed (Kunnen 1992) that outcomes just seem to them to come out of the blue. They show no strong self-directed feelings (such as pride or shame) about their performances and failure does not threaten their self-esteem (Weisz & Stipek 1982). Consequently, these children are not interested in achievement and success, nor in feedback concerning achievement outcomes. The development of this type of problem appears to be related to a lack of contingent experience, especially in early childhood (Bandura 1981; Skinner 1986; Watson & Ramey 1972). Also, feedback that attributes failure to stable factors for which the child is not held responsible (like a disability), too much help, low and inconsistent demands, or inconsistent and noninformative feedback appear to be related to subsequent lack of perceived contingency (Kunnen 1992).

Summarizing, we can formulate two important differences between the two types of problem. Firstly, whereas children with a low perceived competence attribute failure to their own incompetence and success to external factors, children with a low perceived contingency simply do not know what has
caused their performances. A second difference concerns emotional involvement and the involvement of the child’s self-esteem. Children with a low perceived competence are highly motivated to avoid failures. Thus they show strong negative emotions when they fail and also in situations that could lead to failure. They show strong preferences for factors that might help them to avoid failure, such as confirmation, and information about performance strategies and outcomes. In addition, their performance decreases in situations where there is a high risk of failure (following failure or in stressful performance situations like tests). Children with a low perceived contingency are not emotionally affected by outcomes, and not very interested in factors that might change these outcomes.

Several studies stress the avoidance attitude of some children with a low perceived competence. This group of children shows characteristics that differ from those of other children with a low perceived competence: they either hide their emotions, or react aggressively in achievement situations and following failure. They also try to avoid achievement situations, but do so in an angry way, attributing everything that goes wrong to external factors.

Both a lack of perceived competence and a lack of perceived contingency will result in low perceived control and low motivation and both types of problems have many characteristics in common. In this paper we focus on differentiating between both types and thus on characteristics that are — according to theory — typical for either low perceived competence or low perceived contingency, but not for both (Table 1).

**Differences between special groups**

As stated above, low perceived competence is related to a history in which the child has received frequent negative feedback following failure and no positive feedback following success, has been punished or humiliated following failure, and/or exposed to excessive demands. One expects to find these risk factors particularly when the impairment of a child is not recognized. For a child with reduced capacities, normative demands are excessively high demands, which results in repeated failure on normative tasks. Recurrent failure to fulfil expectations may, if the child is held responsible for the failures, also result in punishment and excessive and one-sided attention for failure and little attention for success.

The development of a low perceived contingency is related to a relative lack of contingency experience, especially in early childhood. It is also related to inconsistent and noninformative feedback, feedback that stresses given,
uncontrollable factors (like a disability) as the cause of failure, too much help, and low and inconsistent demands. Thus, impairments that militate against the possibility to perceive contingencies from an early age, that result in inconsistent demands and feedback, or that are recognized early and easily lead to overprotection and the tendency of caretakers to attribute the children’s failures to the disability, can all be considered risk factors for the development of a low perceived contingency. Let us consider how the population in different kinds of special schools may differ with regard to these characteristics.

Children with physical impairments in special schools in general are disabled from birth onward, and for most of these children, problems are recognized at an early age. Their disability often limits the possibilities of perceiving contingencies (Kunnen 1992). Caretakers often have problems in adjusting their demands and feedback to the competence of the child, so that children with a physical impairment are frequently highly protected (Kunnen 1992). In these children, factors related to low perceived contingency appear to dominate, and we may expect them to be especially prone to developing a low perceived contingency.

The problems of children with specific learning difficulties are often recognized only after several years of mainstream school attendance. Most children spend at least 3 years in a regular school before they are admitted to a school for special education. Because their problems are not recognized,
they are frequently held responsible for their failures, and labelled as lazy or reluctant (Meulenkamp 1986). These are all factors that are related to the development of low perceived competence, and we expect problems with perceived competence to be frequent in this group.

Pupils in schools for children with moderate learning difficulties have already experienced by an early age that they often cannot fulfil the demands and requirements made on them (van der Ley 1981). In The Netherlands, this group often comes from disadvantaged socioeconomic environments, where attention to signs of specific impairments is lower (van der Ley). In addition these children often have a history of failure in regular education preceding their admission to a special school. We would expect these children to be liable to low perceived competence.

Pupils in schools for children with social, emotional and behavioural problems are characterized by a lack of social adjustment in and outside the school, disadvantaged home situations, and a threatened personality development. These children are often held responsible for their failures and their misbehaviour. According to several psychologists and teachers (personal communications in Kunnen 1995) these children often receive very negative feedback at home for their misbehaviour, but no praise for good behaviour. Frequently they are either withdrawn, or show an attitude of reluctance and avoidance. These children may be expected to be at risk of developing a low perceived competence.

Children with communication impairments form a very heterogeneous group (Reed 1973). They often have a combination of hearing impairments, language and speech problems and there is an enormous variation in the age at which their impairments are acknowledged. Medical, psychiatric and/or social-psychological factors may underlie their problems. Hearing impairments reduce the possibilities of experiencing contingencies in infancy. If these are not recognized, caretakers may attribute communication problems to the child’s disobedience or reluctance. Problems with speech and language will influence the child’s experience of success and failure, especially after the age at which caretakers expect the child to understand at least some language. It is therefore not possible to make any clear predictions concerning the prevailing type of motivational problems in this group of children.

Pupils placed in schools for children with visual impairments are generally recognized as visually impaired at an early age. A visual handicap limits the possibility of perceiving contingencies in infancy. Caretakers are found to have more difficulty in judging the capabilities of the child, to adjust their reactions to the child’s capabilities, and tend to protect highly (Langan 1973; Gerestein
& van Weelden 1990). We would therefore expect these children to show low perceived contingency.

Summarizing, we expect that, in schools for children with a physical impairment or with a visual impairment, low perceived contingency will be more frequent than in the other types of school, whereas in schools for children with moderate learning difficulties, for children with specific learning difficulties and social, emotional and behavioural problems, low perceived competence will be more frequent. The group of children with communication impairments is too heterogeneous to allow any clear prediction. Empirical evidence for these assumptions is scarce, however. Longitudinal research suggests that in children with a physical impairment a low perceived contingency is common, but a low perceived competence is not (Kunnen 1992). However, comparison between studies of different special groups is difficult, because of differences in ages, methods, instruments, and definitions. Most studies of perceived control or its opposite, learned helplessness, do not differentiate between the two dimensions of perceived control (Weisz & Stipek 1982).

Our investigation therefore aims to answer the question of whether children with different kinds of problem or handicaps have different types of problem with motivation and self-perception. On the basis of the differences in their early history with regard to achievement, and their specific experience, we formulated the following hypotheses:

1 Pupils in schools for children with physical impairments and with visual impairments will show lower perceived contingency than the other groups in the study.

2 Pupils in schools for children with moderate learning difficulties, for children with social, emotional and behavioural problems, and for children with specific learning difficulties, will show lower perceived competence than the other groups in the study.

Children with communication impairments will be investigated to see whether any one type of problem prevails in this group.

Methods

Overview

The subjects were 9- and 10-year-old pupils in six types of Dutch special schools: schools for children with moderate learning difficulties, for children with physical impairments, for children with visual impairments, for children
with specific learning difficulties, for children with social, emotional and
behavioural problems and for children with communication impairments. We
choose this age-group because attribution preferences and patterns are not yet
well developed at an earlier age (Nicholls 1978). For a more detailed
description of the different school types we refer to appendix A. The children
were rated by their teachers on a scale consisting of descriptions of concrete
attitudes and behaviour that can be classified as either an indication of low
perceived contingency or of low perceived competence. The rank order of the
school types is computed, based on the mean scores per school type.

**Subjects**

In total, the study included 284 pupils who were rated by their own teacher.
Thirty-five teachers in 21 schools participated in the study (see Table 2). Each
teacher rated all pupils in his or her group who fulfilled the following criteria:
age between 9.0 and 10.11 years, not multiply handicapped, and a member of
the teacher’s group for at least 7 months. Matching on factors like intelligence
and socioeconomic status was avoided. Firstly, this would result in selecting
non-typical samples of each group, because the groups do systematically differ
with regard to these factors. Secondly, intelligence and motivation are
mutually related: motivation in early childhood is found to be an important
predictor of later ability (Messer 1993).

**Instruments**

We chose teacher’s ratings as our source of data. This choice is based on the
assumption that teacher’s ratings are more reliable than self-rating scales. In
self-rating scales, systematic differences between the groups in their capacity
for self-observation, in answer tendencies and in a tendency toward socially

**Table 2** The number of schools, teachers and pupils that participated in the study

<table>
<thead>
<tr>
<th>Type of school</th>
<th>Schools</th>
<th>Teachers</th>
<th>Pupils</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific learning difficulties</td>
<td>4</td>
<td>8</td>
<td>103</td>
</tr>
<tr>
<td>Moderate learning</td>
<td>4</td>
<td>7</td>
<td>66</td>
</tr>
<tr>
<td>Social/emotional/behavioural problems</td>
<td>2</td>
<td>4</td>
<td>19</td>
</tr>
<tr>
<td>Communication impairments</td>
<td>3</td>
<td>5</td>
<td>29</td>
</tr>
<tr>
<td>Visual impairments</td>
<td>4</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td>Physical impairments</td>
<td>4</td>
<td>6</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>35</td>
<td>284</td>
</tr>
</tbody>
</table>
desirable answers might affect the outcomes. For example, children with socio-emotional and behavioural problems have been found to score very high on scales for perceived competence, possibly as a result of an attitude of aversion (Veerman & Straathof 1993). Children with moderate learning difficulties may have more problems in rating themselves, because of their limited cognitive abilities.

We used a behavioural checklist developed specifically for this study. The list consists of 16 items. Each item consists of different descriptions of how children might react in different daily recurrent and relevant classroom situations. The starting point for the development of the list was the list of characteristics, derived from the literature, presented in Table 1. At least one of the alternatives in each item describes behaviour that is characteristic for either low perceived competence or low perceived contingency. The other alternatives describe — as exhaustively as possible — other reactions that might be expected in that situation. We included a broad range of different, daily and relevant situations to make sure that the list covers most relevant and valid characteristics of low perceived competence and low perceived contingency. All aspects mentioned in Table 1 are included in the list. In choosing these formulations, we expressly stress the differences between the characteristics of children with low perceived competence and an avoidance attitude and children with low perceived contingency. At first sight, both may show a lack of interest in performance. However, children in the first group hide their concern, children in the second group really do not care.

To minimize the risk that our data reflect the teacher’s expectations, instead of characteristics of their pupils, we asked them to score concrete behaviour in specific, daily recurrent classroom situations. We have described the alternatives in concrete ways to minimize teacher’s effects and other problems with reliability. In a pilot administration, special school teachers used the checklist and indicated whether: (a) the situations described were realistic and did occur frequently in their group, (b) the described reactions were meaningful, recognizable and exhaustive, (c) they felt that they could rate their pupils in a reliable and meaningful way, and (d) they felt they could discriminate between the denial and disguising of concern, typical of children with low competence and an avoidance attitude, and the real lack of concern that is typical of children with low perceived contingency. The feedback from these teachers and intensive discussions with several teachers resulted in the reformulation of some situations and reactions (Steenbeek 1996).

For each pupil, the teacher rated the alternative for every item that was most typical for her or him. To avoid ‘forced answers’, the last alternative of each
situation was formulated as: ‘other, namely’. This answer was, however, rarely chosen. The descriptions thus appear to be reasonably exhaustive. In Fig. 1, examples of situations and alternatives are given. The complete checklist is available on request.

For each pupil, a score for problems with perceived contingency and perceived competence was computed by counting the number of rated alternatives characteristic of either low perceived competence or low perceived contingency. The lowest possible score for problems with perceived competence is 0 and the highest 15. A higher score thus indicates a lower perceived competence. For perceived contingency the lowest possible score is 0 and the highest 9. A high score here also indicates a low perceived contingency.

Statistical analyses

Because each teacher rated several pupils, the pupils’ scores are not independent. We used multilevel analysis by means of VARSL. This method analyses the variance on different levels and calculates the variance when variance at other levels is controlled for. The levels in our analyses were the pupils, the teachers and the type of school. We computed the variance explained by type of school, when between-teacher variance was controlled for. This procedure first checks whether there are significant differences
between teachers in their ratings of perceived competence and perceived contingency, by means of the equation:

\[ y = \text{teacher’s variance} + \text{measurement error} \]

The second step involves checking whether, in addition to the teacher’s variance, significant differences between types of school are found, using the equation:

\[ y = \text{teacher’s variance} + \text{school type variance} + \text{measurement error} \]

To control whether differences in sex ratio between school types could explain differences in ratings of perceived contingency or perceived competence between school types we performed an additional analysis in which we included sex as level.

**Results**

There is a significant difference between types of school in perceived competence ratings. This difference is still significant, when teachers’ variance is controlled for \( (P = 0.02) \) and after controlling for sex \( (P = 0.04) \). As expected, perceived competence is lowest in schools for children with moderate learning difficulties, for children with specific learning difficulties and for children with social, emotional and behavioural problems. Children with physical, visual or communication impairments have fewest problems with perceived competence (see Table 3).

For perceived contingency, the differences between school types was not significant \( (P = 0.2) \), nor does controlling for sex differences affect the level of significance. A non-significant tendency partially corroborates our expectations: children with a physical impairment and children with communication impairments have higher scores — thus more problems —

**Table 3** Mean scores for problems with perceived competence and perceived contingency in different school types.

<table>
<thead>
<tr>
<th>Type of school</th>
<th>Mean scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Perceived competence</td>
</tr>
<tr>
<td>Specific learning difficulties</td>
<td>4.94</td>
</tr>
<tr>
<td>Social/emotional/behavioural problems</td>
<td>4.81</td>
</tr>
<tr>
<td>Moderate learning difficulties</td>
<td>4.79</td>
</tr>
<tr>
<td>Visual impairments</td>
<td>3.98</td>
</tr>
<tr>
<td>Communication impairments</td>
<td>3.48</td>
</tr>
<tr>
<td>Physical impairments</td>
<td>2.97</td>
</tr>
</tbody>
</table>
than pupils of the other school types. Contrary to our expectation, ratings of children with visual impairments are low which suggests that they do not have a very low perceived contingency (see Table 3).

**Conclusions**

Our hypothesis that teachers’ ratings for pupils in schools for children with moderate learning difficulties, for children with specific learning difficulties or socio-emotional/behavioural problems should indicate more problems with perceived competence than pupils of the other schools is supported by our data. Our second hypothesis was that low perceived contingency would be more common in schools for children with visual and with physical impairments than in the other schools. However, we did not find significant differences between the school types, although the ratings of children with physical impairments suggest more problems with perceived contingency. Children with communication impairments resembled children with physical impairments: they were rated as having relatively more problems with perceived contingency and few problems in perceived competence.

Our results thus partly confirm our expectations that there are significant differences between special groups. Problems with perceived competence are observed much more frequently in children with specific learning difficulties and with social/emotional and behavioural problems, than in children with physical impairments, whereas the latter group has more problems with perceived contingency. This suggests that intervention programmes that are successful in schools for children with physical impairments may very well be less successful in schools for children with specific learning difficulties and vice versa. Both a low perceived competence and a low perceived contingency result in low motivation and low perceived control. At first sight, the problems might appear comparable. These results thus warn practitioners to be cautious in the application of the same programme in different special schools, even if the pupils show apparently comparable problems in motivation. Investigation of the underlying types of problem is required. More specific knowledge concerning the differences in types of problem between children of different special groups, and with different histories, will increase the possibilities for successful prevention and intervention. However, more detailed research is needed before such programmes can be implemented.

Firstly, not all our expectations were confirmed. The absence of significant differences in perceived contingency may be due to the low scores for problems with perceived contingency in all groups. This might indicate that low perceived
contingency is not a serious problem, but this explanation conflicts with our earlier findings (Kunnen 1992) and with teachers’ observations. A more plausible explanation is that the scale for low perceived contingency does not contain enough items, and that the helpless alternative was presented too much in an ‘all-or-none’ fashion. For example, the alternative, that in cases of failure the child shows no emotional reactions, might be too simple. Outcomes that are perceived as non-contingent may elicit some emotional reactions because of other consequences of the outcome. Even if a failure is not perceived as related to oneself, it may have some less pleasant consequences, such as having to repeat the same task. It might have been better to focus on self-directed emotions such as pride and shame. To explore whether this explanation is correct, we would need a more extensive list that allows a more differentiated description of behaviour, and also asks for behaviour that is less frequent.

In addition, we used teachers’ ratings in this study. Teachers can provide relevant and reliable information about their pupils as long as the questions concern concrete and daily recurrent behaviour. In a pilot study of the relation between teachers’ ratings and self-ratings of such concrete behaviour in the classroom we found a correlation of 0.67 (van Driesum 1991). Nonetheless, we should keep in mind that teachers’ perceptions may differ from self reports and from the actual behaviour of the children. A combination of teachers’ ratings, self reports and observational data would provide more confirmatory information.

Moreover, specific knowledge about the types of problem in children with different backgrounds and histories will provide us with a better understanding of the process of development of motivation and perceived control. However, confirmation of our hypotheses does not confirm our understanding of this process. Other factors, like age of onset, environmental conditions and differences in cognitive capacity may also play a role. A more thorough investigation of the effect of these factors is needed to obtain a better picture of the underlying mechanisms. But this is not an easy task. Simply investigating the effects of socioeconomic status or tests of cognitive ability or matching on these factors is inappropriate and would not provide us with the required information. In the first place, the development of abilities and the development of motivation and perceived control are mutually related. Motivation in early childhood is found to be an important predictor of later ability (Messer 1993). With regard to intelligence, specific handicaps interfere with the development and the assessment of abilities: it is not useful to apply standard tests in different groups of special children. To learn more about the mechanisms underlying the development of different types of problem in
motivation and perceived control, and the factors that play a role in that development, long-term longitudinal studies are required.

References


Appendix A. Background information about the special groups

Special schools in The Netherlands are separate schools, not special groups in regular schools. Schools for children with specific handicaps all differentiate between children with an intelligence within the normal range, and children with an intelligence below about 80. As said, in this study we included only the first group of pupils. The only exception is the group of children with moderate learning difficulties. The groups in special schools are small (7–15 pupils). Teachers in these schools have been given additional training. In many schools, pupils have the same teacher for several years.

Pupils in schools for specific learning difficulties have problems in learning despite a normal intelligence. Their problems are often recognized only after several years of regular school attendance. Most children will have been at least 3 years in a regular school before being admitted to a school for special education. Children from disadvantaged socioeconomic backgrounds are slightly over represented.*
Pupils in schools for children with moderate learning difficulties have learning problems and their intelligence is below the normal range (IQ between about 60 and 80). The IQ score is the main factor determining whether a child will attend a school for specific learning deficits or a school for children with moderate learning difficulties (van der Wissel 1984). Also in this group, the child’s problems are often only recognized after several years of regular school attendance. Many pupils in these schools are from socioeconomically disadvantaged families.

The pupils in schools for social, emotional and behavioural problems have behavioural problems so serious that these children cannot function in regular education. Frequently, they have secondary learning problems. Most of these children have behavioural problems outside school as well, and many of them come from socioeconomically disadvantaged homes. Their intelligence is in the normal range. Most of these children have attended several years of regular education before they are admitted to a special school, and several children had been excluded from different types of schools before coming to their present school.

Pupils in schools for communication impairments have hearing, speech and/or language problems, and frequently a combination of these. Medical, psychiatric and/or social-psychological factors may underlie their problems. They form a highly heterogeneous group, and children from disadvantaged socioeconomic backgrounds are slightly over represented. These children often have secondary learning problems, but their intelligence is in the normal range.

Although some of these children (especially hearing-impaired children) attend a special school from an early age, many are admitted only after several years of regular education.**

Pupils in schools for children with visual impairments are not blind, but have visual problems that are so serious they cannot function in a regular school: they need special adjustments and care. In general, they cannot read printed text. In most children, their problems are recognized in infancy, and they attend a special school from early childhood on. Some of these children have secondary learning problems, and their intelligence is in the normal range. Their socioeconomic background is representative for the overall population.

Children with physical impairments in special schools are generally handicapped from birth, and for the majority of the children, their handicap is recognized at an early age. They have a physical handicap that is too serious to attend a regular school, because they need specific facilities and treatments. Children with physical impairments whose only special needs are an elevator,
broad entrances or an adjusted toilet do not attend this type of school. Many children have secondary learning problems, due to frequent illnesses or time-consuming treatments, and handicaps that directly affect their speed of performances. Emotional and social problems are also quite common. Their intelligence is within or slightly below the normal range, and their socioeconomic background is representative of the overall population.

*The variation in The Netherlands is much smaller than for example in USA in particular, the conditions of the most disadvantaged groups are less extreme, and the percentage of very disadvantaged families is low. Attendance at special schools is free, and thus financial problems at home constitute no impediment.

**Almost all children, regardless of socioeconomic status are screened regularly with regard to their medical condition.