

## Teachers' Perceptions of Gender Differences -What about Boys and Girls in the Classroom?

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**Abstract.** The aim of this study was to describe how primary school teachers perceive differences in behaviour and learning between boys and girls in relation to their teaching and methods. A quantitative approach was used in this study, and the analysis was built on descriptive statistics and bivariate correlations. The results show that the teachers had a positive view of their teaching. However, they generally had low expectations of the boys. The teachers also perceived that they made a great effort to adapt the teaching according to the students' prerequisites and needs. Individual work was a frequently used teaching method, although this was perceived as unfavorable for the boys' learning. The boys' behaviours were perceived as negative for learning, the boys were described as dependent, idle, and unmotivated. Negative characteristics might affect the teachers' expectations of high learning outcomes, and may ultimately affect the boys' school performances. The result of this study emphasizes the importance of that teachers reflect on their teaching methods in relation to boys, and girls' prerequisites in the classroom.

**Keywords:** didactic; gender differences; teachers' perceptions; teaching methods.

### **Introduction**

In most countries in the Western world, girls' school performance is superior to that of boys (Arnesen, Lahelma & Öhrn, 2008). These differences in merits have been almost constant over the last 10 years, with a slight increase in favour of the girls (Blanchenay, Burns & Koster, 2014; Löfström, 2012). Boys' lower grades give them a lesser chance of being accepted in higher education, and in the end, this may affect the boys' opportunities to achieve success in the labour market (Arnesen et al., 2008; Löfström, 2012). From 2006 onward, these differences in grades have been confirmed by international assessments of students, such as the Program for International Student Assessment (PISA). However, boys' performance slightly improved on the latest test (Gurria, 2016). Several research studies from different disciplines highlight boys' low performances in school (Björnsson, 2005; Ingvar, 2010; Wernersson, 2010). The explanations span from

biological to socially constructed causes. Some researchers believe that a culture has emerged where it is uncool for boys to work hard in school, where boys stage masculinity by distancing themselves from school, while academic advancement and hard work is considered feminine (Björnsson, 2005).

Even if most teachers try to be fair and strive to provide equitable learning opportunities for all students, studies have pointed out that teachers generally have lower expectations of boys' academic performance and behaviour in school (e.g. Epstein, Elwood, Hey & Maw 1998; Frosh, Phoenix & Pattman, 2002; Jackson, 2006; Mac an Ghail, 1994). Boys are considered underachieving and troublesome, and girls are considered independent, motivated, and high achieving (Jones & Myhill, 2004). The problem of boys' underachievement must be addressed in the classroom, based on the assumption that the teacher and teaching are central to the students' academic outcomes, and gender differences must be taken seriously; otherwise, there is a risk that gender differences will increase further (Hattie, 2009; Ingvar, 2010).

There is a reason to take the differences between boys' and girls' school performance seriously. . . . Otherwise, weak analyses may lead to incorrect and inadequate efforts for a good school where both boys and girls do not improve to their full potential". (Ingvar, 2010, p. 23)

Based on the assumption that perception affects actions (Scherp & Scherp, 2016; Weick, 1995), this study focuses on the teachers' perceptions, which may shape the prerequisites, requirements, and opportunities for learning in the classroom. Previous research made in Nordic context suggests that teachers have little awareness of their own positioning as carriers and producers of school tradition and culture, or specific educational values based on curricula and equality (Mørck, 2003). In addition, extensive research has highlighted different aspects of the situation of boys in school; however, only a few studies have focused on conditions in the learning environment in relation to boys' underachievement (Öhrn & Holm, 2014). Teachers and teaching are crucial to student learning. Therefore, an increased understanding of the relationship between teachers' expectations and perceptions and boys' performance in schools will enable an understanding of what might have significant consequences for the students' social and academic outcomes (e.g. Hattie, 2009; Scherp & Scherp, 2016)

In Sweden, the discussion about boys' lower grades has not been as intense as in other Western countries. Until recent years, the debate about boys' lower grades has come in the shadow of Sweden's decreasing results in major international comparisons, such as PISA (Wernersson, 2014). Gender differences are increasing more in Sweden than in the Organization for Economic Co-operation and Development (OECD) countries in general, and those who have lost most are low-performing boys who come from socio-economically vulnerable homes (OECD, 2015). Authorities, organizations, and different actors in the educational and social welfare system have highlighted the importance of improvements in school and teaching in order to equalize the differences and guarantee beneficial education (e.g. Barnombudsmannen, 2015; Skolinpektionen, 2016; Skolverket, 2009).

This study is framed within the bounds of this background and is important for several reasons; first, it is important because there is a knowledge

gap in the understanding of gender differences in relation to different aspects of teaching strategies. Second, given the importance of gender equality, it is urgent to understand what can cause the differences in performance between boys and girls. Next, there is a presentation of previous research forming a background for our study, followed by the theoretical framework and then methodological approaches and results. The study ends with a discussion, conclusions, and pedagogical implications.

### **Previous Research**

This section presents international and Nordic research, as well as a theoretical framework and an overview of the research field. In this study, teachers' perceptions of girls and boys are placed in the context of teaching and educational conditions. Therefore, this study is framed within didactical theory. The research presented in this section is limited to studies that describe boys' and girls' school situations based on learning and the conditions in the classroom, as well as studies with an aim to explain the reasons behind boys' low achievement in school.

Studies in Sweden and Finland have shown that girls and boys have different ways of approaching work in school. Girls have an orientation towards progress and how to learn, while boys more often compete and are performance-oriented (Jakobsson, 2000; Niemivirta, 2004). Boys in secondary school start to show avoidance strategies, which entail a pursuit to cope with schoolwork with minimal effort. The differences between boys and girls were greater the younger the students were, and the highest differences in learning strategies occurred during middle the 6th grade (Niemivirta, 2004). This could imply that boys have not learned adequate learning strategies that they need further in the education system when the schoolwork becomes more difficult and abstract.

Boys often get more attention in the classroom, often concentrated to a few boys who dominate the talk space (Altermatt, Jovanovich & Perry, 1998; Eliasson, Sorensen, & Karlsson, 2016; Lundgren, 2000). Although, the boys talk more with their teachers, studies have shown that these interactions often have the aim to correct undesirable behaviour (Jones & Dindia, 2004). Girls' interactions with their teachers, however, are more often supportive of their learning (Younger, Warrington & Williams, 1999). A contemporary study on teacher-student interaction in the science classroom confirmed that boys still dominate the talk space, but the overall talk time increased for both girls and boys and decreased for the teachers (Eliasson et al., 2016).

Recent studies show that school quality affect boys and girls in different ways. For example, intensive and systematic work with reading and language development in primary schools is beneficial for boys because when they generally perform poorer in this area (Autor et al., 2016). Furthermore, there are a connection between learning and secure relationships, where security and a tolerant classroom climate create supportive conditions for the students' learning, a context that is particularly prominent when the students are younger, such as in primary school, and particularly for boys (Francis, Skelton & Read, 2010; Patrick, Kaplan, & Ryan, 2011). Competing and avoidance strategies are increasing in the group of boys under unsafe conditions, and there is a greater risk that boys will not try their best in school due to fear of failing (Hopland &

Nyhus, 2016; Jackson, 2006; Marks, 2000). The teachers' leadership, which supports boys' motivation and interest in schoolwork, creates a favourable classroom climate. Boys more than girls need to know what is expected of them (Hopland & Nyhus, 2016).

Most teachers believe that they give equal treatment to girls and boys, particularly in support of their learning, according to Younger et al. (1999). In contrast to the perception of being fair and equal, research has shown that teachers generally have lower expectations of boys' academic performance and behaviour in school (e.g. Epstein et al., 1998; Frosh et al., 2002; Jackson, 2006; Mac an Ghaill, 1994). Teachers state that their perceptions of boys and girls are shaped by the students' behaviour in the classroom (e.g. Timmermans, Boer & Werf, 2016; Younger et al., 1999). Teachers perceive girls as hard working and producing higher quality in their work than boys. Girls are also associated with higher communication skills, being organized, and being independent. The boys are perceived as ill prepared, less motivated, and childish (Younger et al., 1999). This becomes relevant when teachers' expectations affect the students' academic outcomes, and teachers have higher expectations for students they perceive as self-confident, independent, and having positive work habits (Hattie, 2009; Timmermans et al., 2015). Boys are assessed based on the competences they cannot do, or do not want to do, and girls are assessed based on what they accomplish and compliant behaviour (Jones & Myhill, 2004).

### **Didactical Competence**

The Swedish steering documents emphasize individualization and the importance of meeting students based on their strengths and needs (Skolverket, 2016). Therefore, the conceptual framework of the didactic triangle is used because it emphasizes teaching, learning, and teachers' responsibilities for the students' academic outcomes. Didactic theory is a tool that could be used for reflection and critical review of teaching/learning, as an aid for researchers and teachers in structuring and interpreting classroom activities. Didactic theories and models are useful tools that can help create a reflective self-distance for the teacher (Wahlström, 2015). Didactics can also be seen as a tool to explore, describe, and articulate teachers' choices and awareness of the teaching situation (Uljens, 1997). In policy documents and curriculum texts, teachers' didactic skills are emphasized and are considered to enhance teachers' professionalism and to be important supports in teaching. A central concept within didactical theory is the didactic room (Augustsson & Boström, 2012), which is described below and will be used to operationalize the empirical data.

Based on the didactic triangle, it is possible to focus teaching, the meeting between teachers and students, and the content of the teaching. The triangle consists of three aspects and three axes (Uljens, 1997). The aspects are teaching, rhetoric, and methodology, and the axes are teacher-student, teacher-subject, and subject-student.

Subject, teacher, and students are the cornerstones of the didactic triangle. Rhetoric, methods, and interaction are the axes, which interact with each other in different ways, to various degrees, and in different contexts (Hoppman, 1997; Künzli, 2000).

In the teacher- student axis, the teaching aspect concerning classroom interactions and group processes, as well as the ability to handle them, is highlighted. The axis concerns the teacher's insight in interactions in the didactic room, including the teacher's leadership, conflict management, and ability to meet both individual and group prerequisites and needs (Wahlström, 2015). This axis represents the link between the teacher's values and intentions and the teacher's ability to achieve a constructive learning environment (Steinberg, 2012). The teacher- subject axis refers to rhetoric abilities and the teacher's ways of managing the educational content. This communication includes the teaching experience, oratory abilities, understanding of students' perspectives, and capacity to achieve a given communicative goal. This axis emphasizes knowledge of the subject and an ability to explain it (Steinberg, 2012) or, in other words, the teacher's management of the content. The axis also assumes teacher's self-awareness about his or her use of nonverbal communication (e.g. tone of voice, body language, eye contact). In the subject- student axis, the method deals with an understanding and an exposition of didactical choices and the best way of learning for the students. In other words, how the content can be made accessible to students for individualized as well as group progression (Boström, 2004). Allowing students to understand the subject, pre-understanding, and enabling teachers to lead both the individual and the group are important factors in this axis. Together, these three axes illustrate the prerequisites, requirements, and opportunities created in the didactic room. Teachers' leadership in the didactic room seems to be increasingly relevant in our time. Some issues could be linked to this leadership and perceptions about didactics (Augustsson & Boström, 2016).

In summary, previous research has shown that boys' underachievement in school is caused by many interacting factors, which together draw a complex and multi-faceted picture of what causes this phenomenon.

### **Research method**

This article presents findings from a study made in a small municipality in the middle of Sweden in 2017.

#### ***Research Aim and Main Questions***

The aim of the study is to describe how primary school teachers perceive differences in behaviour and learning between boys and girls in relation to their own expectations, teaching, and methods.

The specific research questions are as follows:

- a) How do teachers perceive boys' and girls' achievements, learning, and behaviour in the classroom?
- b) How do teachers perceive themselves as teachers, their teaching, and methods in the classroom?
- c) How do teachers' perceptions of boys and girls relate to their perceived teaching methods?

#### **Sample and Participant Selection**

Boys' lower grades and underachievement in school have high priority among leaders and politicians in the chosen municipality; therefore, the survey could be

conducted in staff meetings. Time was set aside for an introduction, during which the teachers were informed that their participation was anonymous and voluntary and that they could discontinue whenever they wanted. This resulted in almost all elementary school teachers from the municipality being directly asked to participate in the study ( $N = 115$ ). There were 104 teachers who answered the questionnaire. The participating teachers taught classes from preschool (from the age of 6) to the sixth grade. The population of this study is almost exhaustive within the group of chosen informants (primary teachers of the municipality).

### *The Survey*

The survey was Web-based and distributed over three months in spring 2017. The survey was created using QuestBack Easy Research (version 15.1). The survey was sent to the school's headmaster by email with a link to Easy Research on the day the survey took place. A shorter background and the purpose of the study were presented in the email and at the meetings. The survey consisted of fifty (50) questions, which concerned areas that the previous research pointed out as particularly interesting in relation to the aspects of the didactic triangle and boys' and girls' school performance. The questions mainly concerned four areas: teaching methods, interaction in relation to expectations, social relations, and perceived differences between boys and girls.

Most of the responses in the survey were designed with four options to consider: *not correct at all*, *true to some extent*, *true to a great extent*, and *I fully agree*. A middle option was not offered in order to make the respondents take a standpoint. This type of scale is suitable for measuring attitudes and behaviours by means of response options that range from one extreme to the other (Tamhane & Dunlop, 2000). The questions concerning differences between boys and girls had five options: *girls much more than boys*, *girls more than boys*, *no difference*, *boys more than girls*, and *boys much more than girls*. The reason a 5-item scale was used to offer alternatives showing differences, as well as a neutral alternative if the teacher did not experience any differences.

### *Method for Statistical Analysis*

This study used a quantitative approach and is presented with both descriptive statistics and bivariate correlation analysis. The study examined correlation coefficients using Spearman's rho (Spearman's rank correlation coefficient) to explore possible correlations and the strength of the correlations between the variables (e.g. Pallant, 2013). The variables compared are independent and connect to themes about expectations of students, perceived students' behaviours, and classroom behaviour.

### *Validity, Reliability, and Generalizability*

The survey was tested on three reference groups consisting of teachers, headmasters, and researchers. Based on their input, the survey was revised several times. The content validity is therefore considered adequate (cf. Tamhane & Dunlop, 2000). Because almost all primary school teachers in the municipality answered the survey, the reliability is regarded as strong.

The small number ( $n = 104$ ) of participants affects generalizability. The result is a description of the perceptions of primary teachers in a municipality. However,

on the basis of previous research and theory, certain claims about teachers' general perceptions can be made.

### *Ethical Considerations*

In the study, the Research Council's rules for good ethical research were considered (Vetenskapsrådet, 2017). Voluntariness, utilization, and confidentiality were carefully considered. Information was provided to the teachers about the conditions of participating in the study, both by email and verbally. The teachers were also informed that it was voluntary to participate in the survey and that they could cancel at any time or choose to skip answering some of the questions.

### **Results**

In this section, teachers' perceptions on teaching and differences between boys and girls are presented. The presentation will follow the research questions, and the displayed results were chosen based on their explanatory value in relation to these questions. The first part is therefore focused on the teachers' perceptions of boys and girls in the classroom. In the second part, there is a focus on the teachers' perceptions of themselves and their teaching methods. In the last section, correlations between ways of perceiving gender differences and perceptions of teaching are presented.

### *Teachers' Perceptions of Boys' and Girls' Achievements, Learning, and Behaviour in the Classroom*

Claims to identify the teachers' general perceptions of their students were estimated on a ranking scale of 1-4 (Appendix). Table 1 shows the statistical distribution of the answers. The results show that the teachers generally had low expectations of their students. Most of the teachers thought that their students wanted to develop and perform well in school, but they thought less about the students' motivation and their general knowledge.

**Table 1. Teachers' General Expectations of their Students**

	Not true at all(1)	True to some extent(2)	True to a great extent(3)	Fully agree(4)
My students want to improve and perform well in school.	0%	28%	47%	25%
My students have high motivation in their learning.	0%	46%	46%	8%
My students have good general knowledge	2%	67%	29%	1%

Table 2, presents how the teachers perceived the differences between boys and girls in relation to both expectation and behaviour in the classroom. First, the results show that 95% of the teachers perceived that they had equal expectations of boys and girls. When the questions were set in relation to educational results, the teachers answered differently. The results show that there is a difference between how the teachers perceived boys' and girls' ability to manage the

educational goals. Almost 30% (29.5%) of the teachers thought that the girls were more likely to be able to achieve the goals of the curriculum.

When teachers were asked if they perceived a difference between boys and girls' understanding of what the teacher expects of them, over 19% answered that girls understood the teachers' expectations better than the boys (Table 2).

In the survey, there were also eight questions about classroom behaviours based on gender differences displayed in previous research. Table 2 shows the percentage of the teachers that experienced differences. Almost half of the teachers perceived boys and girls differently in the classroom.

**Table 2. Teachers' Perceptions of Differences between Boys and Girls**

Perceptions of differences	Girls more than boys	No difference	Boys more than girls
I have high expectations of my students' learning	5.0%	95.0%	0.0%
My students will achieve the educational goals	29.5%	63.0%	7.5%
My students know what I expect of them	19.5%	78.5%	2.0%
Motivation for learning	42.0%	52.0%	6.0%
Independence in schoolwork	42.0%	55.0%	3.0%
Uncertain if their work is good enough	45.0%	44.0%	11.0%
Involved in classroom discussions	9.0%	77.0%	14.0%
Have difficulty sitting still	1.0%	37.0%	63.0%
Talk about things other than their work	5.0%	46.0%	48.0%
Have difficulty getting started	2.0%	47.0%	51.0%
Compete to finish first	7.0%	55.0%	38.0%
Do little or no schoolwork in class	1.0%	48.0%	51.0%

Table 2 also shows that 42% of the teachers perceived the girls as more motivated and independent in their schoolwork but also more insecure about their work (45%). Concerning talk space, the teachers thought that boys were more involved in classrooms discussions; nevertheless, they also believed that boys were more likely to talk about things other than schoolwork (48%). In addition, the teachers perceived that boys have more trouble sitting still (63%) and starting their schoolwork (51%), as well as that boys do little or no schoolwork (51%). Furthermore, boys were perceived as more competitive to finish their schoolwork first.

In order to answer the research question of teachers' perceptions of boys and girls in relation to their perceived perceptions of teaching, a bivariate correlations analysis was done, the results of which are presented in Tables 3 and 4. Table 3 shows a weak however distinct positive correlation between teachers perceiving their students as motivated in their learning and perceptions of students' independence and knowing what is expected of them. The correlations between these variables vary from .368 to .493. The strongest correlation is between independence and motivation (.500). This is a moderate but distinctive result, and may indicate that independent students are also perceived as motivated. As previously shown in Table 2, this correlation shows that the teachers perceive girls as more motivated in their learning, more independent, and knowing what is expected of them to a greater extent.



**Table 3. Correlation Matrix for Variables Showing a Correlation between Teachers' Expectations and Perceived Student Motivation, along with Independence in Schoolwork**

	Motivation for learning	My students know what I expect from them	Independence in schoolwork
Motivation for learning		.412**	.500**
My students know what I expect from them	.412**		.317**
Independence in schoolwork	.500**	.317**	

*Note.* The table shows the correlations between individual variables. \*\* Correlation is significant at the 0.01 level.

Correlations between expectations, perceived motivation, independence, and variables connected to negative behaviour in the classroom are shown in Table 4. The correlation is negative, that is to say, high values of one variable are linked with low values of the second variable, and conversely, low values of one variable are linked with high values of the second variable.

**Table 4. Correlation Matrix between Expectations, Perceived Motivation, Independence, and Negative Behaviour in the Classroom**

	Motivation for learning	My students know what I expect from them	Independence in schoolwork
Have difficulty sitting still	-.302**	-.424**	.447**
Have difficulty getting started	-.265*	-.426**	-.209*
Do little or no schoolwork in class	-.405**	-.344**	-.379**

*Note.* The table shows the correlations between individual variables. \* Correlation is significant at the 0.05 level and \*\* Correlation is significant at the 0.01 level.

As shown in Table 2, the teachers perceived that boys at a higher level do little or no schoolwork and have more difficulty sitting still and getting started. This negative perceived classroom behaviour correlates with motivation, independence, and understanding of the teachers' expectations even though this correlation is moderate.

In summary, the results show that the teachers generally had low expectations of boys' ability to achieve educational goals. In addition, boys were perceived having behaviour that is more troublesome in the classroom. Several teachers perceived girls more motivated and independent in their schoolwork and thought that girls understood their expectations better. Furthermore, the girls were perceived as more likely to manage and achieve the educational goals.

### Teachers' Perceptions of Themselves as Teachers, Their Teaching, and Teaching Methods in the Classroom

There were questions about how the teachers perceived themselves as teachers. The results show that over 32% of the teachers perceived that they fully adapt the teaching according to the students' prerequisites and needs, and 55% said that they do this at a high level (table 5). Merely 12% said that they only do this to some extent, and none said that they do not adapt at all.

**Table 5. Teachers' Perceptions of Themselves as Teachers**

	Not true at all(1)	True to some extent(2)	True to a great extent(3)	Fully agree (4)
I adapt my teaching to the students' prerequisites and needs.	0.0%	12.0%	55.5%	32.5%
I find alternative ways of working for students' who have different difficulties	0.0%	14.0%	42.0%	44.0%
I challenge my students' thinking	0.0%	18.0%	62.0%	20.0%
The relation between the teachers and students is good	0.0%	15.0%	65.0%	20.0%

This positive view of themselves and their teaching was confirmed by several questions; the majority stated that they find alternative ways of working, that they challenge their students' thinking, and that their relations with the students are good (table 5). In the survey, we also asked the teachers to describe their teaching methods. They were also asked to estimate how often they use different ways of teaching. The results of these questions are presented in Table 6.

**Table 6. Teaching Methods Used and to What Extent**

Teaching methods	Never	Rarely	A few times a week	Every day	Every lesson	Every day + every lesson
Class briefing	1.0%	1.0%	11.3%	50.5%	36.1%	86.6%
Individual work	0.0%	5.3%	20.0%	64.2%	10.5%	74.7%
Discussions with whole class	3.2%	5.3%	34.0%	48.9%	8.5%	57.4%
Work in pairs	0.0%	17.0%	50.0%	30.9%	2.1%	33.0%
Work in groups	4.3%	28.7%	46.8%	19.0%	3.2%	20.2%
Work with tablets/computers	3.2%	24.2%	58.9%	12.6%	1.1%	13.7%

Class briefings are the most common way of teaching and leading the classroom work (36.1%). Most use this the method in every lesson, and 50.5% of the teachers estimated using class briefings every day. In total, 86.6% of the teachers said that they use this method every day (every day + each lesson). The second most used method is individual work, which 64.2% of the teachers said they use

at least every day and 10.5% stated they use every lesson (74.7%). A method that teachers perceive as slightly favourable to the boys is discussions with the whole class (cf. Table 1), which almost half (48.9%) stated that they use every day. Besides whole class discussions, the more student-active ways of working were perceived as more uncommonly used (working in pairs, working in groups). Few of the teachers stated that they use tablets or computers often (13.7%), about 59% said they use technical devices only a few times a week, and several of the teachers said they rarely use them (25%). As shown in Table 2, 42% of the teachers thought that boys could handle individual work less well than girls could, despite it being the second most common teaching method that many boys encounter in the classroom every lesson and every day. The teachers generally had a positive view of themselves, their teaching, and their efforts to adapt the teaching to meet the prerequisites and needs of the students. The most frequently used teaching method is class briefings, followed by individual work. Work in pairs, in groups, and with computers/tablets were perceived as not being used quite so often.

In summary, the results show that the teachers generally had low expectations of their students, and the lowest expectations were of boys. Several of the teachers perceived that girls were more likely to manage the set requirements of the curriculum and that they understood the teacher's expectations better. The results also show that the teachers perceive their teaching and teaching methods as well adapted to the needs and prerequisites of the students. The teachers stated that the most commonly used teaching method is class briefings, followed by individual work and more student interactive teaching methods (working in pairs, in groups, and with computers/tablets) were perceived as more seldom used. In the results, there was a correlation between motivation, independence, and understanding of what is expected, characteristics the teachers connected with the girls. For the boys, there was a correlation between negative classroom behaviour (do little or no schoolwork and have more difficulty sitting still and getting started) and lower motivation, less independence, and not understanding the teachers' expectations. For the girls the perceptions were more positive, girls were perceived motivated and independent in their schoolwork, and also more likely to achieve the educational goals.

## **Conclusion**

It is worth reminding that the aim of this study was to describe how primary school teachers perceive differences in behaviour and learning between boys and girls in relation to their teaching and methods. Previous studies have shown that boys have more contact with their teachers than girls, but the interactions often have a negative character (Altermatt et al., 1998; Eliasson et al., 2016; Jones & Dindia, 2004; Lundgren, 2000; Younger et al., 1999). Studies have also shown that teachers generally have lower expectations of boys than of girls' academic performance and behaviour.

The results of this study will be discussed, beginning with the research questions. The results are discussed in relation to different aspects of the didactic triangle, which frames this study. The aspects of the didactic triangle illustrate the complexity of the teachers' obligations; however, the aspects also provide a

tool for analysing the prerequisites, requirements, and opportunities created in the classroom.

### **How Do Teachers Perceive Boys' and Girls' Achievements, Learning, and Behaviour in the Classroom?**

The teachers stated that they perceived that their students want to improve and perform well in school. When asked if the teachers perceived that the students are motivated and have good general knowledge, their responses were more restrained. Although their perceptions of their students were somewhat low, almost 95% of the teachers perceived that they had equal expectations of girls and boys in the classroom. However, it is noteworthy that when the question of expectations was presented from the students' perspective, almost 20% of the teachers thought that the girls comprehended the expectations better (Table 2). In addition, when the question of expectations was asked in relation to the achievement of educational goals/results, almost 30% of the teachers perceived that girls were more likely to manage the set requirements of the curriculum.

Teachers have higher expectations of students; they perceive as self-confident, independent, and with positive work habits (Jones & Myhill, 2004; Timmermans et al., 2016; Younger et al., 1999). In this study, the teachers connected these qualities with girls to a great extent (Table 2). Girls were perceived as more motivated and independent. Boys, on the other hand, were perceived as more troublesome (trouble sitting still and starting their work or doing little or no schoolwork; cf. Jones & Myhill, 2004). In addition, boys were perceived as more competitive to finish their schoolwork first, which could mean that they are missing the goals of the lesson in order to complete the tasks as quickly as possible. The teachers in this study also perceived boys as more verbally active in the classroom, both in a positive and negative way. They stated that the boys are more involved in classroom discussions but also that boys more often talk about things other than schoolwork.

In the didactic triangle, this relates to the teacher-student axis, the aspect in teaching that highlights a link between the teacher's values and intentions and the teacher's ability to achieve a constructive learning environment (Steinberg, 2012; Wahlström, 2015). A constructive learning environment is important due to the fact that boys' academic performance is dependent on the teacher's positive leadership and on the social climate in the classroom (Hopland, & Nyhus, 2016; Francis et al., 2010; Jackson, 2006; Marks, 2000; Patrick et al., 2011). Under insecure conditions, the social climate between the boys toughens and the competition increases, which could lead to more boys exhibiting avoidance strategies (cf. Hopland & Nyhus, 2016; Jackson, 2006).

Several of the teachers in this study stated that the boys display restlessness, idleness, and lower motivation; behaviours that the teachers perceive as negative. Negative behaviour possibly affects and lowers the teachers' expectations of the boys' academic outcomes and ultimately affects the boys' grades. This could also be interpreted as the responsibility for the students' learning is placed on the individual and on the ability to utilize the opportunities in the classroom, not as the teacher's responsibility to adjust the teaching so all students have the opportunity to succeed in their studies. Previous research has shown that boys and girls manage opportunities and conditions differently (Ingvar, 2010; Jackson, 2006; Jakobsson, 2000; Marks, 2000;

Niemivirta, 2004). The findings show that there is a moderate, however distinguishable, correlation between the perception of, girls' understanding of what is expected of them, being perceived as independent and motivated, or the other way around, the boys are perceived at a higher level as not knowing what is expected of them, having more trouble doing independent/individual work, and as less motivated. Research states that teachers' perceptions of the students are affected by the students' behaviour in the classroom (e.g. Timmermanns et al., 2016; Younger et al., 1999). In addition, the results from this study can indicate that the teachers perceived students more motivated if the students also have high ability to work on their own. The teachers perceived the girls to have these abilities to a greater extent (Table 3). Girls were also perceived as more likely to attain the knowledge requirements. The results indicates, although this correlation is moderate; the opposite for the boys, who are not perceived to have compliant behaviour in the classroom (cf. Jones & Myhill, 2004; Table 4).

As mentioned before, the teacher-student axis focuses on the link between the teacher's values and the ability to achieve a constructive learning environment (Steinberg, 2012; Wahlström, 2015). When the teachers in this study responded that, they perceived the girls as more motivated in their learning than the boys. One possible interpretation could be that teachers interpret a high ability to work independently as being motivated and understanding the expectations. High expectations of students' performance from teachers affect the students' results, and different standards for boys and girls can give rise to different expectations of their performance in school (cf. Hattie, 2009). The lower expectations of boys can thus affect assessments and grades; for example, if the teachers assume that boys perform more poorly than girls do, this may lead the boys to believe that there is no use making an effort in school. This can give rise to a vicious cycle, where the low expectations lead to or enhance the boys' underachievement. The underlying values of the teacher affect which teaching methods are used and end up creating a less supportive learning environment for the boys. Due to the didactic triangle and the axis that emphasis the values in relation to the ability to achieve a constructive learning environment a conclusion could be that the values and perceptions of boys found in this study place high demands on the learning environment and the conditions created for the boys in the classroom.

### **How Do the Teachers Perceive Themselves as Teachers, Their Teaching, and Methods in the Classroom?**

The overall interpretation that can be made from this study is that the teachers (95%), at high levels experience the same high expectations for boys and girls (Table 2). What appears like a pattern, however, is that the teachers have a positive image of the girls and that the boys are perceived as troublesome and less interested. However, many of the teachers do not perceive any gender differences.

The teachers who responded to this survey generally had a high opinion of themselves, their teaching, and how much effort they make to adjust the classroom work to meet the students' different needs (Table 5). A majority (about 88%, Table 5) stated that they adapt their teaching to establish good conditions for their students. In spite of these efforts, the teachers perceived boys as having troublesome behaviour in the classroom (Table 2). This could be

interpreted as them not reaching their students or not finding the right teaching methods (related to the teacher–student axis in the didactic triangle). This applies, above all, to the boys. The survey paints a picture of the boys, at a group level, as idle and noisy in the classroom.

When asked about teaching methods, the teachers stated that class briefings are the most common way of leading the classroom work (Table 6). The use of class briefings could be beneficial to students, especially for the boys, if they are used to define the structure in the classroom (cf. Hopland & Nyhus, 2016). Contemporary research suggests that the talk time in the classroom has increased for the students and decreased for the teachers (Eliasson et al., 2016). This could be an indication that the leadership in the classroom is declining, which could affect the boys?

The second most used method is individual work (74.2%). In the survey, the teachers stated that they use individual work every day and often every lesson (Table 6). Despite this, several teachers thought that boys could handle individual work less well than girls (Table 2). The subject–student axis deals with an understanding and exposition of the subject matter so that the students can learn in the best way, in other words, how the subject content can be made accessible to the students (Boström, 2004). A method that is often used is discussions with the whole class (Table 6), a method the teachers perceived as slightly favourable to the boys (Table 2). Besides whole class discussions, the methods that could be regarded as more student interactive were perceived as more uncommon, such as working in pairs, working in groups, or working with tablets or computers. Methods that could be regarded as more student interactive are less often used, with the exception of discussions with the whole class, a method that, based on the answers in this study, could benefit the boys because the boys are perceived as more verbally active in the classroom (Table 2).

In summary, the question this study raises, is to what degree the teachers' perceptions mirror actual differences in classroom/learning behaviour or to what degree the teachers' stereotypes about gender are part of their perceptions? Studies of gender attribution show that gender stereotypes lead to different interpretation of the same behaviour in boys and girls, were girls are seen as independent and higher skilled in communication and organization and boys as ill-prepared, less motivated, and childish. The research design in this study cannot say anything about which teaching methods *would* be more advantageous for boys. However, on the base of the assumption that perception affects actions, and a biased perception on part of the teacher may have consequences for the teaching and the opportunities for boys?

### **Practical implications**

In the study, a number of implications for the professional practice of school and for educators are identified; the school must be aware of boys' and girls' different learning strategies and how these are enacted in the classroom. Poorly adapted teaching can cause boys to be perceived as restless, idle, and less motivated. Given the idea that equal conditions should be created in the classroom, boys' lower outcomes and gender differences need to be discussed without prejudice. Teachers must be prepared to critically discuss and

problematize their teaching instead of their students' performance and behaviour. It is also important based on the school's compensating assignments that the approach and methods are adapted to meet the requirements of an equal school in order to build inclusive environments for all students, both boys and girls.

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