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STUDY MOTIVATION AND GENDER DIFFERENCES – A PARADOXICAL SITUATION IN SWEDISH UPPER SECONDARY SCHOOL

(Research article)

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STUDY MOTIVATION AND GENDER DIFFERENCES – A PARADOXICAL SITUATION IN SWEDISH UPPER SECONDARY SCHOOL

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Abstract

The background to this study is the increasing differences in grades and throughput between males and females in Swedish upper secondary school. The study aimed to investigate the relationship between beliefs about study motivation and gender in Sweden in seven different study programs in upper secondary schools. The study adopted quantitative research design. The data were collected via a questionnaire of "Patterns of Adaptive Learning Study" (PALS) designed by Midgely (2001) and adopted to Swedish contexts by Blomgren (2016). The questionnaire consisted of 38 items that were administered to 155 female and 107 male students in upper secondary school in one region in Sweden. The data obtained were analyzed using Mann-Whitney test. Results revealed that overall males and females to 2/ 3 held similar beliefs about their motivation to study but to 1/3 differed at a significant level. Overall, the importance of schools, teachers, families and their own efforts was highly appreciated in the study. The difference was evident mainly in the value of the teacher's importance and role in the classroom, where males had higher estimate. However, females were of the opinion that the school was less safe, that the classrooms were less inviting and that there was less silence in the lessons compared to males. The study partly explained the seemingly paradoxical situation in students' different learning strategies and addresses didactic improvements to teachers.

Keywords: gender, paradoxical situation, study motivation, teachers, upper secondary school

1. Introduction

The intention of new school reform in Sweden (GY 11) to increase student throughput does not appear to have had the desired effect. As many as 25% of the students in upper secondary school interrupts their studies (Skolverket, 2019b). Another problem is that only 71.3% of students obtain their degree within three years after ending the program. In vocational programs, the number is even lower (Skolverket, 2019c). This has consequences for individuals as well as for society. Without complete upper secondary school grades, there are risks for social exclusion and unemployment. In addition, every student who fails his studies risks social problems in forms of unemployment or socio-economic vulnerability or exposure.

Many actors, for example student organizations (Sveriges Elevkårer, 2018), school agencies (Skolverket, 2019b) and politicians (Regeringskansliet, 2015), have drawn attention to the problem and demands both analyzes of the problem and presentations of possible solutions. The ongoing pandemic has made the situation more troublesome. When asking the students themselves more than half have little or no motivation at all for their studies (Sveriges Elevkårer & Lärarnas Riksförbund, 2015). A majority of the students' claim that the most important factor in increasing the students' study motivation is to have committed and knowledgeable teachers. The two organizations believe that the teaching task must be refined for teachers to be able to concentrate on their core task - to teach. Another crucial aspect is that motivation becomes something that needs to be added to the learning processes (Skolverket, 2019a). The Swedish National Agency for Education has developed strategies to counteract

dropouts: individual-based approach, good reception, follow-up, collaboration, and flexibility (Skolverket 2019b).

Factors that can potentially lead to a drop-out for a student are divided into individual and structural background factors as well as school-related factors. Individual background factors are those that the student brings with them to school, for example socio-economic background or factors that can be related to immigration and/or foreign heritage (not knowing the Swedish language, cultural differences in understanding/adjusting to the norms and standards of the school system, problems about having to move to several locations in Sweden before being able to settle down on one place and to participate in the school work with a longer time-span focus). Individual background factors also include gender. More boys than girls interrupt their studies. In the EU, 16.9% of boys and 12.7% of girls are early dropouts (Dale, 2011). The proportion of students who complete upper secondary school within four years is in Sweden is 71.3 % year 2020 (males 68.2 %, females 74.8 %). The corresponding figures for year 2020 in the municipality presented in this study is 66.4 % (males 62.9 %, females 70.1%) (Kolada, 2020).

School-related factors that can create a risk of study interruptions are, for example, shortcomings in the relational work between students and teachers, insecure school environment, and that the teaching not being adapted and varied according to the student's needs (Skaalvik, & Skaalvik, 2016). The most effective work that yields sustainable results over time is characterized by strategies that affect both the departmental and individual levels, such as supporting students to develop productive behavioral patterns that promote school work through increased attendance, homework, and to make different types of adjustments to make teaching accessible and offer different forms of support, as well as build trusting relationships between students and teachers (Skolverket, 2019b).

Factors that affect the student's sense of belonging to the school are adaptations to the student's needs, participation and influence, study peace and security (Skaalvik, & Skaalvik, 2016). Studying these factors aims to provide a basis for making changes for students even before they begin a spiral of distancing from school. Developing an inclusive and safe climate, with positive relationships and a school culture that promotes learning will contribute to study motivation (Wallace & Kirkman, 2019). Such work contributes to security, where the student's experience of positive relationships with both adults at school and with other students.

The question is how to increase study motivation and thereby minimize the possibilities of dropouts and to maximize the possibilities to increase school achievements? We argue that one important factor for study motivation is teaching strategies and the students' perceptions of that. We also argue that more research is needed on the relationship between study motivation, didactical issues, and gender. In Sweden, boys have much lower grades than girls (Skolverket, 2020) and they drop out of school to a greater extent (Kolada, 2020).

This study focuses on seven types of upper secondary school programs to analyze study motivation in general, as well as similarities and differences among the programs about gender. The study has chosen to focus on the student's perspective on study motivation and is based on an extensive web-based questionnaire. One important reason for this study, apart from the arguments presented earlier, is that national studies are few (Lundahl et al. 2015) and that few Swedish contemporary studies build on students as informants about their study motivation (Giota, 2017). Perhaps the most important reason for the study is though that gender differences in study motivation have received little research attention, despite boys' educational underachievement (Vantieghem & Van Houtte, 2018).

Given the above problem area, the research questions are:

- Are there gender differences concerning issues related to study motivation in seven study programs in upper secondary school in one of Sweden's bigger municipalities?

Based on the above cited research and the differences in study results between female and male students in Sweden the hypothesis put forward is: *male and female students differ in their experience on issues related to and explaining study motivation*.

The results of the study can offer teachers' insights into ways for didactical planning for increased study success. For students, this relates to individual study strategies. The results can also offer other relevant schools actors (i.e., head teachers, school administrators, and politicians) indications of a need for, for example, policy statements, regulation documents, and/or different types of programs for resource allocations.

In the continuation of this article we present some previous research in the area, followed by a presentation of our methodological choices. The final part of the article consists of the results, along with a discussion of the findings. he first line of each paragraph is indented 0.5 pt. Margins are set to 2.54 on all sides. Refer to APA 6 for any other details that are not specified within this template document.

2. What about girls and boys study results in Sweden?

2.1 Some international comparisons

Ensure an inclusive and equal education of good quality and promote lifelong learning for all is goal number 4 in Agenda 20. Education systems around the world must meet people's needs throughout life - from pre-school, primary school, upper secondary school and higher education, as well as all people's equal opportunity for lifelong learning that favors participation in working and social life. Education is the key to prosperity and opens up a world of opportunities that enable each of us to contribute to a sustainable society (www.un.org).

In order to present the relevance of studying gender differences in study results we first present a short international outlook and then some Swedish data. Three major international recurring surveys provides us with international data regarding compulsory school; PISA (Program for International Student Assessment), TIMMS (Trends in International Mathematics and Science Study), and PIRLS (Progress in International Reading Literacy Study). Differences between boys and girls are different for different subjects. In reading comprehension, girls perform significantly better than boys in all countries with an average difference in the OECD of 30 points. (OECD, 2020). In no country do boys perform as well as girls in reading comprehension. The OECD warns of this trend; "*These gender disparities in achievements raise concerns, as they may have long-term consequences for boys 'and girls 'academic and professional lives*" (OECD, 2020, p.33). In mathematics, boys in grade 4 perform better than girls in all OECD-countries (Skolverket, 2020). Female are more likely than male to complete upper secondary education. According to OECD (2020), on average across countries and economies with true cohort data, 76 % of females graduated from upper secondary education within the duration of the programme, compared to only 68 % of males.

In Sweden boys and girls perform approximately the same in mathematics in compulsory school and the difference between boys and girls in Sweden is largely unchanged from year 2009. In five of the OECD countries, boys in eighth grade have significantly higher results than girls in mathematics, and in one country, Romania, girls perform higher than boys in mathematics in grade eight. In Sweden boys and girls are quite equal in mathematic in grade 8. In science, the international data shows a fragmented result. In half of the countries boys perform better than the girls and in half of the countries the conditions are the opposite. In Sweden girls perform slightly better than boys in science, (Skolverket, 2020)

Because the education systems and the level of education look so different around the world, it is impossible to give a general picture of boys' grades in an international perspective. When it comes to Sweden boys generally have lower merit values and final grades than girls

in Sweden and the differences have become greater over time. In 2018/2019, girls had an average of 27.9 credit points more than boys when they left compulsary school (Skolverket, 2019a). Going back ten years in time, the difference was 22.1 credit points to the girls' advantage (Skolverket, 2019a). Among those who graduated from compulsory school in 2018, a little more than every fifth boy has not become eligible for upper secondary school, compared with every eighth among girls. 35 % of the boys were not eligible to apply for higher education after graduating, compared with just over 20 % of the girls (Skolverket, 2019b). From the Swedish national statistics, we can thus state that the boys have lagged in both merit values in virtually all school subjects as well as goal fulfillment of the knowledge requirements. (Skolverket, 2019a, 2020). Current research shows that Sweden is the country in the Nordic region where the differences in merit values are greatest, and the most serious is the situation for low-performing boys with an immigrant background and/or poorer socio-economic background (Andersson et al., 2010; OECD, 2020; Sandell, 2007; Skolverket, 2017).

The gender differences continue in Sweden in compulsory schools. In 2020, 15.7 % of the boys went to upper secondary school without eligibility for national programs in. The corresponding figure for girls was 13.7 %. Among the graduating students in 2019, 92.8 % of the girls graduated from high school, while 89.3 % of the boys. Even greater differences exists in the proportions who graduate from upper secondary school with basic university eligibility. 80.8 % of the girls and 66.4 % of the boys (Skolverket, 2020). In the municipality where the data for this study is collected 81 % of the students who left primary school in year 2019 were eligible for vocational programs in high school (79 % males, 83 % females) (Kolada, 2020) The gender difference is obvious.

2.2. Previous research about gender differences and study motivation

The research regarding gender differences in students' perception about study motivation and gender is sparse, sprawling, and shows contradictory findings. A few studies have focused on the target group that the present study deals with. In addition, related age groups will also be referred to. The concept of study motivation is often also not conceptualized, which is why related concepts will also be involved in this overview.

Within the research of study motivation self-determination theory (SDT) is one dominant framework. Vantieghem and Houtte (2018) indicate, based on the dichotomy of autonomous and controlled motivation, that girls statistically display higher levels of autonomous motivation compared to boys. Autonomous motivated students use more metacognitive strategies while students with controlled motivation are driven by punishment or rewards.
Within the studies on learning strategies there are conflicting results in research. Learning differences between the genders are considerable because of their cognitive differences (Bonomo, 2010).

Males and females use different learning strategies in language studies (Mahmud & Nur, 2018). While females tend to use cognitive and affective strategies, males use more memory and social strategies, which has impact on their learning and grades. Bernat and Lloyd (2007) and Akram and Ghani, (2013) show that there are no major differences between the gender regarding their motivation for language studies, thereby contradicting the study conducted by Mahmud and Nur (2018). Another study on language learning with a large cohort points out that gender differences exist in different contexts more than in the case of learning strategies (Liyanage, & Bartlett, 2012).

Related to learning strategies is research on different learning styles, where some differences between the genders have emerged. The research on Dunns´ learning styles model show that boys are more tactile (hands-on- learning), more kinesthetic (learning-by doing) and more group oriented compare to girls, which prefer to learn best alone or with a teacher. Dunn

and Griggs (2007) points out that although boys and girls differ from each other in many ways individual within each group are even more unique that either group as a whole.
Reading and students' perceptions related to motivation and competency beliefs have been researched and presented in studies by Logan and Medford (2011) and Marinak and Gambell (2010). The former article describes how boys' attainment in reading is closely linked to their motivation compared to girls. One consequence might be that boys' motivations and competency beliefs is crucial in the effort they put into reading. The results in the latter article show that even though boys and girls are at the same competence level in reading, boys' value reading lower than girls. These gender differences in motivation seem to be evident early in school and increase for reading and language in students' schooling (cf. Meece et al., 2006)

Boys' perceptions about the subject of mathematics is reported in an extensive study by Samuelsson and Samuelsson (2016). The gender differences the study presents are about classroom settings, relationship to achievement in the subject, and aspects of self-regulated learning. Significant results were that boys use group work more, they feel they have influence over the subject and are more involved during the lesson than girls. The researchers call for research that focuses on "*how different aspects of a perceived learning environment affect students', boys' and girls', achievement in mathematics (p.18).*"

Several studies use different types of rating scales and motivation theories to find out gender differences. Rusillo and Arias (2004) argues, based om empirical data, that reasons why girls succeed better in academic studies depend on that girls have a more adaptive approach to learning tasks. Ruffing et al. (2015) presents factors that are beneficial in academic studies and where girls more than boys use specific learning strategies such as meta-cognitive strategies, critical evaluations, rehearsal, and effort. They conclude that

> …there are differences in preferred learning strategies between males and females which teachers should acknowledge, for example in order to reach students through specific instructions and presentation styles. However, students should also be aware of their most suitable and promising strategies and might benefit from each other, for instance through mixed learning groups (p.10).

Students' attitudes and goal orientation in school work with regard to gender have been described by Niemivirta (2004). He describes the students' attitudes as performance-oriented or learning-oriented and claims that boys as a group place more emphasis on competence and ability compared to girls who focus more on the ability to develop their own knowledge. Boys strive to appear competent (performance-oriented) but also to avoid failures and to appear incompetent. They can resort to avoidant strategies, which can be expressed as avoiding comparisons and manage with the least possible effort. Avoidant strategies can thus be an expression of a fear of failure both academically and socially. Boys´ avoidant strategies can be linked to an anti-study culture (Zimmerman, 2018). An anti-study culture can be a variant of boys´ learning strategies dependent on a masculine ideal where being ambitious in school can entail a social cost (lower status) for boys.

As shown above, the research is both scattered and fragmentary. We want to underline that the differences in findings between these studies may be due to different theoretical starting points, questionnaires, analytical methods employed and content focus. Thus, further studies are necessary to get a better understanding of gender differences and motivation and this study is a contribution to fill a gap in current research.

3. The theoretical understanding of study motivation

The theoretical standpoint of the study is that of social-cognitive theory; i.e. both internal and external factors are important for understanding and explaining motivation. By internal factors, the references are the students' driving forces and by external factors the influence of social and material environment, teachers, home and working methods for teaching in school.

The teachers' approach, choice of didactic working methods, leadership, etc., is an important interactive motivating factor. To analyze a lack of study motivation as a cause of low throughput in upper secondary school in Sweden, as well as gender differences in perspectives on issues of importance for study motivation, a perspective is thus required that not only focuses on the individual student but takes into account the entire school and classroom situation.

In accordance with Perry et al. (2006) we also argue that study motivation is more about transaction than interaction, i.e. that motivation is about negotiations of meaning in the social interaction. Motivation is then seen as a process integrated into a larger whole, impossible to separate from learning, individual differences, the nature of tasks, or societal context. For this reason, field studies are important. According to Perry et al. (2006) there are strong links between motivation and a) communicated expectations b) clear feedback on results, c) interaction between teacher and student and between students, d) positive climate and e) teacher leadership. This implies that teachers' choice of didactical approach is of great importance in order to boost study motivation among students.

4. Method

4.1. Research Design

The purpose of the study was to find out upper secondary students' opinions concerning issues related to study motivation. To examine their thoughts and attitudes, materials were gathered through a questionnaire with open and closed questions and via interviews. The study adopted quantitative research design and presents the quantitative findings obtained from the student survey. The details about the study are as follows:

4.2. Participants

A total of 374 randomly selected volunteer students, 188 (50,3%) male and 186 (49,7%) female participated in this study. The participants were students in upper secondary school in seven different study programs: Social Sciences Program (SSP), the Health and Social care Program (HSP), the Individual Program (IP) the Vehicles and Transport Program (VTP), the Technical Program (TP), the Construction and civil engineering program (CCEP) and the Children and Leisure Program (CLP). The selection principles thus include both academic and practical programs, as well as a representation of student groups with various past successes or challenges in their learning processes. The criteria for selection were being enrolled in one of the programs and studying in the first or second year of the program.

Table 1. Information on participating upper secondary school programs and students with regard to gender.

Program		SSP	HSP	VTP	IP	TP	CCEP	CLP	Total
Gender	Girls	48	48	21	30	16	2	21	186 (49,7)
	Boy	20	3	55	33	25	32	20	188 (50,3)
Total		68	51	76	63	42	34	41	374

4.3. Data collection tools

The data of the study were collected via the questionnaire of "Patterns of Adaptive Learning Study" (PALS) designed by Midgely (2001) and translated, validated, and used in Swedish contexts by Blomgren (2016). The questionnaire consisted of 38 items, and all items were rated on a 4-point rating scale, ranging from *strongly agree* (1), to *strongly disagree* (4). The questionnaire consisted, besides background facts such as age, gender, study program, language spoken at home, parents educational background etc., of questions in five main areas; school environment, participation in lessons, values of studies, family backup, interaction with teachers and students. Before the questionnaire was sent out, it was tested by three teachers and 12 students and examined in an academic forum.

The responses were collected using a Web-based questionnaire that was administered by a link survey in the survey tool Netigate (www.netigate.se) in spring 2019. The survey was followed by a message explaining the study's purpose and that participation was voluntary and anonymous. The query structures for the Web-based survey were an operationalization of results of previous research, and aspects of study motivation based on social cognition theory, i.e. how people interact with each other and with the environment.

4.4. Analysis of the data

The data were analyzed using the SPSS Statistics. The data items consisted of ordinal variables. Frequencies, means and median were used to analyze single items together with the Mann-Whitney U-test. The Mann-Whitney U-test is a non-parametric test and is comparable to the parametric two-sample t-test. It is used to test the null hypothesis that two samples are drawn from the same population. It determines whether the difference between the average rank of the two groups (in this case males and females) is significant. This test is used when the normality assumption is questionable and/or when data is ordinal.

5. Results

Results of the items are presented in groups according to the six areas of study motivation outlined in the method section. In appendix 1 we present an overview of the statistical data, which clarifies the distinctively statistically significant factor of importance between genders.

5.1 Gender differences and perception of school

Items about the school consisted of five statements (table 2). An overwhelming majority of both gender agreed with that they like to meet their classmates and that they learn a lot in school. About three-quarters of the students answered that they like being in school. When asked if they feel safe at school, almost all the boys (96,7 %) answered that this was the case, while 85,4 % of the girls agreed with this statement. This is a significant difference (Mann-Whitney U = 19493,500, $p < 0{,}001$) showing a lower mean ranking of female (1,69) to male (1,40). (Note that the scales went from one to four, where one represented that they fully agreed with the statement. Therefore, a low average becomes an indication that the students largely agree). The conclusion in this case is therefore that females are less likely than males to feel safe in school. There were also a significant difference between the genders when asked if the classrooms and the school are pleasant environments. Among male students, it was 79,5 % who agreed and among women 67,2 % (Mann- Whitney U = 18775,000, $p < 0{,}002$).

Table 2. Me and my school

Mean and number in percent as marked fully agree / partly agree	Male Md (%)	Female	Asymptotic Sig
I like to be in school.	2,04 (75,0%)	2,14 (71,2%)	0,222
I feel safe in school	1,40 (96,7%)	1,69 (85,4%)	0,000***
I like to meet my class mates in school.	1,48 (92,9%)	1,60 (92,1%)	0,056
My school is a place where I lean a lot.	1,83 (82,0%)	1,89 (82,0%)	0,428
The class-rooms and the school are pleasant.	1,91 (79,5%)	2,19 (67,2%)	0,002***

5.2 Gender differences and perception about study experience and family support

When it comes to showing oneself and others their study skills both male and female agreed on three statements to a very large extent and about the same, namely the importance of learning as much as possible (92%, male, 91% female), the importance of improving the skills (92% male, 92,6% female) and importance of showing the teachers that school-work is easy (94% male, 99% female). However, when it came to showing other students that schoolwork is easy, there is a significant difference between the gender; female tends to pay more attention to that statement compare to male (Mann-Whitney U = 13525,100, p<0,048). It is notable, even though there is no significant genders differences on the question, that the statement "Tt is important to me to show other students that school work is easy for me" rendered a distinctive lower percentage of agree answers than the other statements in the question (31,6 % male, 38,6 % female). Another significant difference is find between the genders concerning the question whether it is important to show the teachers that schoolwork is easy. Female agreed this was more important compared to male (Mann-Whitney U 14400,000, p<0,048). Overall, both males and females seem to value their school work participation.

Table 3. Me and my study

Mean and number in percent as marked fully agree / partly agree	Male	Female	Asymptotic Sig
It is important to learn as much as possible.	1,57 (92,0%)	1,56 (91,0%)	0,814
It is important for me to improve my skills this year.	1,57 92,0%	1,57 (92,6%)	0,973
It is important for me to show other students that schoolwork is easy for me.	2,91 (31,6%)	2,71 (38,6%)	0,048*
It is important for me to show the teachers that schoolwork is easy for me.	2,44 (94,0%)	2,38 (99,0%)	0,048*

Concerning supports from family or relatives, there were no significant differences between the genders. Both genders agreed (table 4) that family/relatives believe that school is important for them (95,9 % male, 94,5 % female) and that they are interested in their school work (86,4% male, 89,1% female). It is interesting though to notice the big differences in students' experience about their families' general value on the importance of school and school results compared to their perceived support for schoolwork from their family. Only a little more than half of the students stated that they received help in school work from their families/relatives.

Table 4. Gender differences on perception about family support.

Mean and number in percent as marked fully agree / partly agree	Male	Female	Asymptotic Sig
My family and my loved ones think school is important.	1,25 (95,9%)	1,32 (94,5%)	0,153
My family and loved ones are interested in my school-results.	1,44 (86,4%)	1,61 (89,1%)	0,153
In my family / loved ones, I get a lot of help with my school work	2,23 (58,6%)	2,35 (59,5%)	0,254

5.3 Gender differences and study efforts

Questions that estimated how they viewed themselves as individuals in a classroom situation are reported in the table 5. There are no significant differences between the sexes when it comes to importance to understand, make study efforts, get good grades, give the right answers and participate in lessons. It is noteworthy that both males and females value the importance of the issues quite highly, from 77, 3% to 92%. In other words, both males and female seem to value lessons, learning and do the best they can during lessons.

Table 5. Me and my study efforts

Mean and number in percent as marked fully agree / partly agree	Male	Female	Asymptotic Sig
It is important that I understand what I learn, just not memorize.	1,70 (90,4%)	1,74 (84,0%)	0,852
It is important that I make study efforts.	1,66 (89,8%)	1,71 (87,2%)	0,496
It is important that I get good grades.	1,96 (77,3%)	1,85 (78,2%)	0,178
It is important that I give the right answers.	1,81 (88,0%)	1,81 (82,8%)	0,862
It is important to participate in the lessons.	1,57 (92,0%)	1,71 (86,1%)	0,091

5.4 Gender differences and perception about teachers

In the survey, seven of the items focused on students' relations to the teachers and 14 items focused on the students' overall perspectives of the teachers. In the question on the students' perceptions on themselves and their teacher (table 7), there was a statistically significant difference in relation to if the teachers are fair to the individual student (the one who answered). Female students perceives to a lesser extent that teachers are fair to them

compared to male students (Mann- Whitney U = 16914,000, p<0,009). In the other six claims there were no gender differences. Notable is though that the statement "For me, it is important not to perform worse than other students" gets a noticeably lower percentage of agreement, from both genders, than the others.

Table 7. My perceptions of myself and my teachers

Mean and number in percent as marked fully agree / partly agree	Male	Female	Asymptotic Sig
I know what my teachers expect of me.	1,79 (85,75)	1,71 (92,5%)	0,529
It's easy to understand my teachers	1,86 (83,1%)	2,04 (79,4%)	0,006**
I'm interested in what my teachers tell.	1,85 (82,6%)	2,06 (73,5%)	0,009**
My teachers give me interesting tasks.	2,06 (74,6%)	2,34 (58,3%)	0,001***
My teachers give me clear answers to my questions.	1,85 (82,7%)	2,08 (75,2%)	0,005**
My teachers are good at explaining.	1,83 (84,0%)	1,91 (84,0%)	0,151
My teachers let me show what I have learned.	1,80 (82,7%)	1,86 (80,9%)	0,346
My teachers do different things to help us understand	1,74 (87,1%)	1,86 (83,3%)	0,064
My teachers tell me how to improve when I make mistakes.	1,77 (47,5%)	1,87 (79,7%)	0,123
My teachers listen to what I say.	1,67 (88,4%)	1,80 (83,9%)	0,056
There is peace of mind in the lessons.	2,02 (73,3%)	2,42 (57,8%)	0,000***
I get feedback on my tasks from the teachers.	1,66 (92,1%)	1,78 (88,6%)	0,045*
The teachers see and help both me and my peers.	1,64 (88,3%)	1,75 (86,8%)	0,053*
The teachers have the same teaching method for all students.	2,03 (76,9%)	2,04 (73,5%)	0,531

Concerning the students overall perspectives of the teachers (table 8), five statements showed statistically significant difference between genders, namely a) if it was easy to understand the teachers (Mann-Whitney U = 16338,000, , p<0,006), if the student is interested in what the teacher says (Mann-Whitney U = 16286,000, , p<0,009), c) if the teachers give them interesting tasks (Mann-Whitney U = 26677,000, , p<0,001), d) if the teachers give clear answers to students questions (Mann-Whitney U = 15947,000, , p<0,00) and, finally, the is a peace of mind in the lessons (Mann-Whitney U = 16688,000, , p<0,001). All of these five statements valued men higher than women at a statistically significant level. The other nine claims were estimated quite equal between the sexes. Overall, both males and females seem to value their teachers to a high extent. The only exception to this is the statement "My teachers tell me how to improve when I make mistakes". Especially males have a lower percentage who agrees to that statement (47,5 %) than other statements in the question.

Table 8. The teachers.

Mean and number in percent as marked fully agree / partly agree	Male	Female	Asymptotic Sig
For me, it is important to appear as if I can handle the school work.	2,13 (70,2%)	1,99 (76,3%)	0,181
For me, it is important not to perform worse than other students	2,56 (44,2%)	2,48 (50,6%)	0,420
I'm sure I can handle even the most difficult school work if I try.	1,84 (81,1%)	1,88 (78,6%)	0,738
My teacher not only allows me to do light schoolwork, but makes me think.	1,91 (81,3%)	1,90 (80,2%)	0,911
My teacher accepts nothing less than that I make a full effort in school work.	2,15 (70,6%)	2,07 (71,0%)	0,911
My teacher asks me to explain how I conclude my answers.	1,84 (87,1%)	1,82 (84,0%)	0,861
The teachers at my school are fair to me.	1,68 (86,0%)	1,87 (80,0%)	0,009**

The questions in tables 7 and 8 commented above, together with the question if the students feel safe at school (table 2), turned out to be the most decisive questions in our survey in relation to gender. They represent interesting results for analysis and discussion.

6. Discussion and Conclusions

An important starting point is the increasing differences in grades and throughput in Swedish upper secondary schools (Skolverket 2020). Male have lower grades in most school subjects and find it harder to get through the school system compared to females. One way to delve deeper into the problem is to review study motivation for the two sexes. The research question in this study was therefore if it exists gender differences concerning study motivation in sevens study programs in upper secondary school in one of Sweden's bigger municipalities. We hypothesized that male and female students differ in their experiences on reasons explaining study motivation. The results show that our hypothesis mostly was false, i.e in 26 out of 38 statements. 12 out of 38 claims differed at statistically significant level between the genders. There are some differences between male and female students in their views on school, school work, family support, and the teachers. This is in line with conclusions in other studies (Bernat & Lloyd, 2007 and Akram, & Ghani, 2013). The gender differences found are though puzzling and interesting to analyze and discuss.

In general, girls feel more insecure at school than boys, perceive to a greater extent than boys that they are treated incorrectly by teachers, have greater difficulties than boys to understand the teachers, are less interested than boys in what the teachers say, perceive less than boys that they get interesting school assignments and perceive to a lesser extent than boys school as a calm working place. Still, they get higher grades and have higher throughput than boys. How can this be analyzed and understood?

Vantieghem and Houtte (2018) study suggest that girls display higher levels of autonomous motivation compared to boys. Autonomous motivated students use more metacognitive strategies while students with controlled motivation are driven by punishment or rewards. This is in line with our results and might be one explanation why girls have more academic success than boys in Sweden over-all as well as in the studied municipality. With more meta-cognitive strategies girls might rely less on teachers' support than boys and do not

develop the same inter-active relationship with the teachers (having more difficulties to understand the teachers, being less interested in what the teachers say, experiences less interesting school assignments given by the teachers). This is also in accordance with Samuelsson & Samuelsson (2016) findings in a classroom setting, i.e. that boys use group work, feel they have influence over the subject and are more involved during the lesson than girls, and Mahmoud and Nur (2018) results that male and female students use different learning strategies. Rusillo and Arias (2004) argue that the reasons why girls succeed better in academic studies depend on that girls have a more adaptive approach to learning tasks. Ruffing et al (2015) adds that girls use more than boys specific learning strategies such as metacognitive strategies, critical evaluations, rehearsal and effort.

On the other hand, Liyanage and Bartlett (2012) argue that gender differences exist in different contexts more than in the case of learning strategies. Applied to our results it implies that the higher number of girls perceiving being insecure and lacks calm working situation in school can be an explanation to the different learning strategies. If so, it is important to recognize Ruffing et al. (2015) conclusion that differences in preferred learning strategies between males and females have to be acknowledged by teachers and students to boost study motivation in schools through specific instructions, presentation styles, mixed methods for teaching and learning, mixed learning groups etc. The results of the study can also be analyzed in the light of different learning styles. Because girls seems learn better with the traditional teaching methods while boys learn better with hands-on-learning and learning by doing (Dunn & Griggs, 2007), it is not so strange that they have better grades than the boys. Given that boys prefer to work in groups, the characteristics of the teacher may not be as important as for girls. Thus, they possibly value the teacher's behaviors differently than the girls do.

As Perry et al. (2006) has concluded there are strong links between motivation and a) communicated expectations b) clear feedback on results, c) interaction between teacher and student and between students, d) positive climate and e) teacher leadership. It put a searchlight on how education and teaching are organized and conducted. If school results for boys are lower than girls, and at the same time boys rely more than girls on teacher skills, then it represent a troublesome situation where teachers' didactical skills in Swedish schools today have to be questioned and/or developed (Åhslund & Boström, 2018). It also supports the theoretical standpoint that study motivation is dependent on both intrinsic and extrinsic motivational factors.

It is difficult to understand the paradoxical situation regarding boys' study motivation that this study demonstrates. Boys perform worse in almost all school subjects and have higher dropouts compared to girls. There may be a connection to it boys´ avoidant strategies (Niermenvierta, 2004; Zimmerman, 2018) in order not to show an academic failure they emphasize and exhibit social behavior. A relevant question to ask is: how can boys' motivation to study, appreciation to be in school as well as their appreciation of the teachers be transformed to an instrument for better results in terms of grades and less dropouts. Girls perform better than boys, but feel more insecure at school, thrive less in the classroom and value the teacher's contribution lower than the boys. A relevant question to ask is where girls get their motivation from as they feel more insecure in school situations? How can their sense of insecurity be addressed so that they fully focus on their school work when they are at school?

Like all the similar studies, the results presented in this study should be viewed as snapshots. Study motivation and could change over time and depend on context and subjects (Anderman, & Anderman, 2009, Hattie, 2009; Liyanage, & Bartlett, 2012). To go deeper, repeated measurements, larger populations and longitudinal studies are required. The study is limited to seven programs, and the results are valid for those included in the study. Given the number of female and male students, this is adequate for the chosen design (Hassmén & Koivula, 1996). One strength of the chosen statistical methods is that the test is not affected by

outliers (extreme scores), which may occur in parametric tests. One weakness is that it requires more interpretation of its results. i.e. it is not as powerful as parametric tests (Siegel & Castellan, 1988).

7. Recommendations

We want to underline that it is likely that differences in findings between our and the mentioned studies may be due to different theoretical starting points, questionnaires, analytical methods employed and content focus. Thus, we argue that further studies are necessary to get a better understanding of occurring gender differences and motivation. Our study contributes with an understanding that male and female students differ to some extent in their experiences on reasons that explains study motivation. This indicates that measures to strengthen students study motivation to a large extent can apply to both genders. But, areas where there are gender differences are also important to further analyze. It may represent important grounds for school development. In that sense, this study fills an important gap in current area research.

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