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Gender awareness in student teachers at the University of Turku

Master's thesis

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Author(s): Maxime Casteleyn
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Supervisor(s): prof. Koen Veermans
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The aim of the study was to map gender awareness in student teachers in the teacher education program at the University of Turku. In 2014 the new Finnish national core curriculum added the inclusion of knowledge and understanding of gender diversity to the basic education curriculum, furthermore, according to renewed legislation, a plan to include gender equality must be in place in all educational institutions. Therefore, this study focused on the perceived knowledge and understanding of gender sensitivity, gender stereotypes and biases of students teachers, as well as what has been taught in their teacher education on gender awareness. For the mapping of gender awareness, the development of a new questionnaire was needed, in combination with semi-structured interviews with participants to explore the aforementioned topics on a deeper level. The findings of this study revealed strong subscales in the questionnaire that measured gender stereotypes towards students and teachers, gender sensitivity in the classroom and gender awareness in teacher education. The participants in this study revealed to not possess too much of a stereotypical thinking except in regards to the behaviour of boys and reported the belief of male student teachers being more appreciated in the teaching profession. Furthermore, participants presented an intention to act in a gender sensitive manner in the classroom though they reported a lack of education on gender issues that should be offered in the teacher education program. Within the teacher education program, if gender was addressed in courses, this was often done in heteronormative and gender stereotypical ways. Lastly, teachings on transgender and gender non-conforming issues were reported to be non-existent in the program. As a result, recommendations towards the education on gender issues are provided, as well as further research into the perceptions of teachers towards different genders. In general, the complexity of research into gender awareness should not be underestimated and was corroborated by the findings of the underlying patterns in answers to the survey.

Key words: gender awareness, gender in education, teacher education, interview, survey, gender sensitivity, gender non-conforming, heteronormativity

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1 Introduction

"Initial teacher education should provide the prospective teachers with readiness to promote gender equality in their profession" (Ministry of Education, 1988, as cited in Lahelma & Tainio, 2019). However, even after decades of projects focusing on gender equality, some of which even conducted within the teacher education, remarkably little has changed after these initial recommendations and few instances of teachings on gender awareness can be found within teacher education programs (Lahelma & Tainio, 2019). Therefore, this thesis set out to map gender awareness in student teachers within the University of Turku, in order to gauge if, after the latest project on gender awareness in 2008-2010, teachings have evolved to include gender awareness. More than just collecting information towards explicit teachings on gender in select courses, implicit teachings on gender awareness were of importance of further investigations. Since implicit beliefs of teachers are difficult to observe or collect, measuring gender awareness in student teachers provides a baseline of information on this difficult to measure topic.

Studies conducted on gender equality by the OECD (2017) showcase the still existing gender gap in performance on the PISA test, the wide gender gap in certain fields of study, and, consequently, in the labour force as well. This gender gap has far-reaching consequences and starts early on in schools. Even now, certain school subjects or hobbies are still regarded as 'masculine' or 'feminine' (Ceci and Williams, 2007, 2010 and Steffens and Jelenec, 2011, as cited in Kollmayer et al., 2020; Kollmayer, 2018; Lahelma, 2005; Lahelma, 2014). Furthermore, teachers have been shown to possess perceptions regarding differences between genders based on ability, behaviour, attitudes and more (Beaman et al., 2006). These differences in perceptions consequently lead to differences in educational outcomes, from the higher referral of boys to special education classes, to less girls participating in STEM-subjects, regardless of ability (Beaman et al., 2006; OECD, 2017). However, this focus on the dichotomous nature of sex or gender, leads to a minimisation of other issues regarding gender in education. Most research into gender focuses on differences between boys and girls, whereas a group of people not belonging to this category routinely report higher mental health problems and even suicide attempts (Anderssen et al., 2020). Transgender and gender non-conforming students report lower teacher positivity and school connection than their cisgender peers, which significantly affects educational outcomes (Ullman, 2017). However, this need for more education on gender issues has not yet reached teacher education programs

as they still only give cursory notice to gender awareness when connected to projects and, moreover, when gender is brought up in courses, gender issues are routinely taught from a heteronormative perspective (Brunila & Kallioniemi, 2018). Therefore, this research will map reported beliefs in gender biases or stereotypes, willingness to act in a gender sensitive manner in the classroom and teachings in regards to gender awareness in the teacher education program.

Continuing through with these preliminary probes into the topic, this thesis will explore existing research on gender in education and gender in teacher education. Firstly, an exploration of terms and definitions used in this thesis will be provided, as well as a scrutinization of the problems with studying gender in education. Next, the chapter on gender in education will analyse differences in classroom interactions between different genders and teachers, perceptions of teachers in regards to different genders, the popular 'boys discourse' and, finally, gender non-conforming students in education; These topics will be examined in regards to what is known about these differences and what the consequences could be. Lastly, within the topic on gender in (Finnish) teacher education, the analysation will include courses on gender awareness and their consequences, the issues faced when trying to include gender awareness in teacher education, and the covering of gender in other courses within the teacher education programs.

After the review of the existing literature is reported, the methodology section of this thesis will provide insight into the development of a new questionnaire on gender awareness in student teachers, as well as the methodology requirements in regards to the semi-structured interviews. Furthermore, the process of finding participants for this study was documented in the methodology section as well.

Next, a report on the quantitative data will lead into the analysis of the quantitative and qualitative findings. The quantitative findings were analysed using SPSS, and the qualitative analysis was conducted through the development of a coding scheme in order to code the transcribed interviews. A combination of these findings are utilized to examine the results in regards to the developed survey as well as a general analysis of the findings.

The sixth chapter of this thesis will cover the discussion of the findings in combination with the previously conducted literature review. After a general discussion on the findings of this study as well as the answering of the research questions, the limits of the study are considered and possible consequences for future research will be laid out.

Lastly, the thesis will end on a conclusion of the research questions in combination with a summary of the general findings of the study.

The appendices of this thesis include the original developed survey, the revised survey, the coding scheme used during the analysis, the privacy notice shared with the participants, and the invitation for the interview

2 Theoretical background

2.1 Gender

2.1.1 Terms and definitions

Throughout this thesis, different words and concepts will be used intermittently and sometimes even interchangeably, depending on the source referenced in different sections. Even though authors sometimes use different terminology, the idea and concept behind it is oftentimes very similar. Therefore, in this section, some of the most commonly used terms and definitions, according to authors referenced in this thesis, will be outlined.

Firstly, though 'gender' and the difference with 'sex' will be described further in this theoretical background, a short definition of gender as it will be defined and used throughout this thesis appears necessary. Gender, in this context, is different than sex. Whereas sex describes the biological connection to the human body, often seen as either male or female (though it is decidedly not a binary system), gender depends on the social and cultural context one is born in (Francis & Paechter, 2015).

Consequently, a multitude of terms with a connection to gender are to be defined clearly as well. As the term is mentioned in the title of this thesis work, 'gender awareness' seems a logical place to start. In this thesis, the decades of work by the Finnish researcher of gender in education, prof. emer. Lahelma will be used intensively. Therefore, a definition offered in Lahelma (2019, p. 3) on gender awareness will be used henceforth. "[we] defined gender awareness as consciousness of social and cultural differences, inequalities and otherness, all of which are built into educational practices, as well as a belief that these practices can be changed. It also includes understanding gender as being intertwined with other categories: ethnicity, age, sexuality and health, as well as with local and cultural opportunities and differences (Lahelma and Hynninen, 2012)."

Secondly, a term sporadically used is 'gender sensitivity', which, according to (Chikunda, 2010, p. 111), "is the ability to recognize gender issues". A definition from the European Institute for Gender Equality (2016c) describes it further as "Aim of understanding and taking account of the societal and cultural factors involved in gender-based exclusion and discrimination in the most diverse spheres of public and private life."

Another term often used when describing equality work, which is, naturally, working towards equality, is 'Gender equality'. Gender equality is defined succinctly by the European Institute for Gender Equality (2016b) as such: "Equal rights, responsibilities and opportunities of women and men and girls and boys."; added as a note was the following: "Equality does not mean that women and men will become the same but that women's and men's rights, responsibilities and opportunities will not depend on whether they are born female or male. Gender equality implies that the interests, needs and priorities of both women and men are taken into consideration, thereby recognising the diversity of different groups of women and men. Gender equality is not a women's issue but should concern and fully engage men as well as women. Equality between women and men is seen both as a human rights issue and as a precondition for, and indicator of, sustainable people-centred development."

A last term important to clarify beforehand, is the concept of heteronormativity. The European Institute for Gender Equality (2016a) defines this concept as "Heteronormativity is what makes heterosexuality seem coherent, natural and privileged. It involves the assumption that everyone is 'naturally' heterosexual, and that heterosexuality is an ideal, superior to homosexuality or bisexuality." Brunila & Kallioniemi (2018) provide some further context: "Heteronormativity carries the idea of a hierarchical gender order. It means a code of behaviour that expects women to behave in a less valued 'feminine' manner, and men in a more valued 'masculine' manner (see Lehtonen, 2010)." In the context of this study, heteronormativity is interwoven with equality work in education, according to Brunila & Kallioniemi (2018), as it is often perceived as the need for women and men to work harmoniously together to advance equality, often only seeing social justice and co-operation rather than including a focus on gender inequalities and conflicts of interests. Furthermore, the persistence of heteronormativity maintains the notion of the existence of only two opposite genders, boys and girls, who are inherently different from each other, which is what drives a large amount of the existing pre-conceptions, biases and stereotypes around gender (Brunila & Kallioniemi, 2018).

Naturally, numerous other terms, whether related to gender or not, are utilized to clarify and explore gender (awareness) in this thesis, however, these terms are clarified and defined when needed in the text itself.

2.1.2 Gender equality

Gender equality is still not achieved in many aspects of society, although significant progress has been made in the field of education, thus far this has not been fully translated into the wider society (OECD, 2017). However, as Table 1 visualises, countries where women perform better at school have a smaller gender gap. Nevertheless, the gender gap is still in place in the work place, even in the top performer, Finland. Additionally, Finland can be considered a bottom performer when considering median earnings for full-time employees and in the share of employed who are employees(Table 1, OECD, 2017). Even though the gender gap in the share of managerial employment in Finland is considered moderate compared to other countries, it still presents quite a big number in percentage points (p.p.).

Table 1.1. Countries where women do well in education have the smallest gender gaps in labour force participation and leadership positions
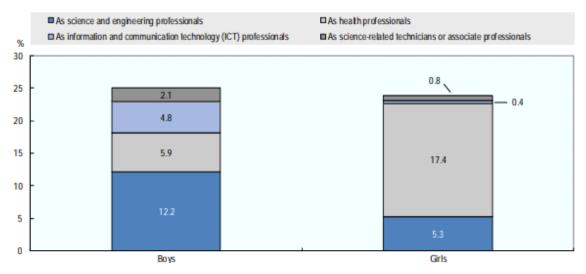
Key indicators of gender gaps in education, employment and entrepreneurship

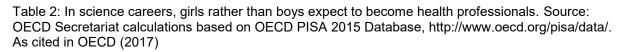|	Top performers	Moderate performers	Bottom performers				
	Education:			Employment			Entrepreneurship:
	Gender gap in mean PISA reading scores	Gender gap in mean PISA mathematics scores	Gender gap in the share that have attained tertiary education (p.p.)	Gender gap in the labour force participation rate (p.p.)	Gender gap in the share of managerial employment (p.p.)	Gender gap in median earnings for full-time employees (%)	Gender gap in the share of employed who are employers (p.p.)
Age group:	15-year-olds	15-year-olds	25-34 year-olds	15-64 year-olds	All ages	All ages	15-64 year-olds
Year:	2015	2015	2015	2015	2015	2015	2016
Note:	a	a	b	c	d	e	f
OECD average	-26.9 *	7.9 *	-11.9	12.2	37.7	14.3	3.3
OECD std. dev.	9.6	7.4	6.5	8.0	16.1	7.4	0.8
Finland	-46.5 *	-7.5 *	-16.4	3.0	33.4	18.1	3.9
Sweden	-39.2 *	-2.2	-15.6	3.6	20.9	13.4	3.6
Norway	-39.8 *	-2.3	-17.3	4.3	27.9	7.1	1.7
Iceland	-41.6 *	-1.1	-16.8	4.8	23.5	9.9	3.3
Latvia	-42.1 *	-1.9	-28.4	6.1	11.4	21.1	3.5
Denmark	-22.2 *	9.4 *	-17.8	6.3	46.3	5.8	2.9
Portugal	-16.7 *	10.0 *	-15.2	6.4	34.7	18.9	3.1
Slovenia	-43.2 *	3.8	-22.3	7.4	25.3	5.0	3.2
Estonia	-27.9 *	5.2	-20.3	7.5	38.6	28.3	3.2
Canada	-26.2 *	9.0 *	-17.7	7.6	29.0	18.6	3.3
Israel	-22.9 *	8.5	-19.4	7.8	35.5	21.8	4.6
France	-29.1 *	6.0	-8.4	7.9	36.7	9.9	3.7
Germany	-20.8 *	16.6 *	-1.9	9.1	41.4	17.1	3.5
Switzerland	-25.3 *	12.0 *	-2.9	9.2	29.6	16.9	4.4
Belgium	-16.0 *	14.3 *	-12.1	9.2	34.9	3.3	3.3
Austria	-20.2 *	27.0 *	-5.6	9.2	40.6	17.0	3.8
Netherlands	-23.6 *	2.5	-8.9	9.9	47.9	14.1	3.3
New Zealand	-32.3 *	8.5 *	-8.4	10.2	..	6.1	2.1
United Kingdom	-21.9 *	11.6 *	-6.8	10.3	29.3	17.1	1.8
Luxembourg	-21.3 *	11.3 *	-10.4	10.4	63.6	3.4	2.4
Spain	-20.2 *	16.0 *	-12.1	10.8	37.2	11.5	2.8
Australia	-31.7 *	5.8	-11.9	11.5	27.6	13.0	3.4
United States	-20.1 *	8.5 *	-8.3	11.5	13.2	18.9	2.1
Hungary	-24.8 *	8.2	-12.3	13.1	18.9	9.5	3.2
Slovak Republic	-35.6 *	5.7	-16.1	13.2	37.4	13.4	2.3
Poland	-29.4 *	11.4 *	-18.7	13.4	19.7	11.1	2.4
Ireland	-12.0 *	16.1 *	-11.8	14.8	31.5	14.4	4.0
Czech Republic	-26.1 *	7.1	-13.9	14.9	41.0	16.5	2.6
Greece	-37.3 *	0.1	-12.4	16.0	48.6	6.2	4.1
Japan	-13.3 *	13.8 *	-2.7	18.2	75.2	25.7	2.1
Italy	-16.0 *	19.9 *	-11.6	20.0	46.9	5.6	3.9
Korea	-40.5 *	-7.0	-9.0	20.8	79.0	37.2	4.4
Chile	-11.9 *	18.3 *	-1.6	21.9	49.3	21.1	2.9
Mexico	-15.7 *	7.3 *	-1.8	35.1	31.4	16.7	3.0
Turkey	-27.8 *	5.9	0.6	42.0	73.7	6.9	4.6
Brazil	-23.1 *	15.5 *	-6.1	21.3	25.3	24.8	..
China	-16.2 *	5.8	0.7	14.0	50.1	..	..
Colombia	-15.6 *	10.9 *	-7.3	22.1	14.0	11.1	..
Costa Rica	-15.0 *	16.1 *	-5.0	26.6	17.4	3.7	..
India	.. ..	..	..	52.9	71.0	56.0	..
Indonesia	-23.4 *	-2.7	-1.1	33.0	53.7	36.8	..
Lithuania	-39.1 *	-1.3	-19.9	3.3	20.8	12.5	..
Russian Fed.	-26.1 *	6.0	-13.1	10.9	22.6	..	..
South Africa	.. ..	.. ..	-2.2	13.0	37.8	40.5	4.9

Table 1: OECD (2017): Countries where women do well in education have the smallest gender gaps in labour force participation and leadership positions. Source: OECD (2017)

Since the 2000s participation rates of women in all levels of education has increased dramatically in both OECD and non-OECD countries (OECD, 2017). However, there are still numerous areas, such as sub-Saharan Africa or Yemen, where completion rates for girls in lower-secondary or upper-secondary education is still atrociously low (World Bank, 2016 as cited in OECD, 2017). Circling back to gender gaps in education, although girls in most OECD countries routinely outperform boys in reading scores on PISA test, as can be discerned in Table 1, in general, boys still outperform girls in mathematics (though not in Finland). Though this gender gap in mathematics is not immense, it is still noticeable, especially when considering the continuing underrepresentation of girls in the STEM field (OECD, 2017). Even when girls at the age of 15 expect or desire to work in the STEM field later in life, most girls expect a job in the health profession (Table 2, OECD, 2017). In Finland, according to the OECD (2017), where girls perform on average better than boys in mathematics, only 1,4% of girls expect a career as an engineer, scientist or architect, opposed to 6,2% of boys.

Figure 7.2. In science careers, girls rather than boys expect to become health professionals

Proportion (%) of 15-year-olds who expect to work in a science-related occupation by the age of 30, by type of science professional, OECD average, 2015

Table 2: In science careers, girls rather than boys expect to become health professionals. Source: OECD Secretariat calculations based on OECD PISA 2015 Database, http://www.oecd.org/pisa/data/. As cited in OECD (2017)

In general, boys are significantly more likely to be low-achieving than girls, with 10% of Finnish boys being all-round low-performing compared to around 6% of Finnish girls (OECD, 2017). However, when comparing the gender gap in performances in specific fields, boys catch up to their underachievement in literacy with almost closing the gender gap at 26-

28 years (OECD, 2017). In contrast with the decrease of the gender gap in literacy, the gender gap widens in mathematics, with girls scoring even lower than boys at the 26-28 year gap compared to the same cohort at 15 years old (OECD, 2017). In Finland, where girls generally outperform boys in the field of mathematics, boys catch up and close this gender gap as well (OECD, 2017).

Beyond the field of education, gender inequality still remains in the workforce, with women less likely to be employed in a paid function than men in practically every OECD country (OECD, 2017). Furthermore, women are overrepresented in the part-time workforce and in, generally, lower paying, female-dominated fields of employment such as retail, health services and social work (OECD, 2017). Additionally, according to an OECD study in 2016, women who are mothers are more likely than childless women to work less hours, to earn less or even to not work at all.

In conclusion, although great strides have been made to reduce the gender gap in the equal attendance of all genders in all levels of education, the gender gap still exist and disfavours girls disproportionally, especially in the labour force and in the STEM field.

2.1.3 Problems with gender research

When differences between genders are studied, whether it be in education or in different fields of study, the dichotomy and binary idea of gender is perpetuated. The notion that there are bodies identifiable as being male or female and that differences in behaviour between these two categories can be attributed to simply someone being part of one of these two categories, is problematic in its essence (Francis & Paechter, 2015). Although, initially, this issue, according to Francis and Paechter (2015), was thought to be resolved with the creation and application of the concept of *Gender*, in contrast with the earlier use of *Sex* to identify the binary categories of male and female. Whereas *Sex* was tethered to the human body, *Gender* on the other hand was captured as a social construct. Differences in behaviour between males and females where not necessarily anymore a consequence of the differences attributed to the body someone was born in, but could now be ascribed to society and the view human cultures have on the dichotomy or lack thereof. Unfortunately, in more recent years, the use of the terms gender and sex have become increasingly interchangeable and more tethered to the inherent perceived dichotomy of the sexes (Francis & Paechter, 2015). Furthermore, research

into gender differences largely focus on gender-traditional/stereotypical behaviour, in this context gender is more perceived by others as interchangeable to 'sex', which furthers the misunderstandings of gender and perpetuates the notion of a duality in behaviour that can be attributed to one gender or the other. Butler's (1990) influences on separating the ties of gender to sex or the human body caused gender to be regarded as performative and research to analyse expressions of gender instead of behaviours attributed to differences in bodies (as cited in Francis & Paechter, 2015). Although gender research shifted towards examining gender expressions, attributes of gender differences continued to be connected to the same stereotypical binaries as before. According to Francis and Paechter (2015), perceiving gender as solely a gender expression and thus a choice, minimises the effects society has as a role of a spectator and raises the question as to whom the performance of gender is aimed at. Furthermore, the field of gender research still remains largely focussed on the duality of gender as masculine or feminine, male or female.

2.1.4 Gender spectrum

Although *sex* is generally identified as tied to the human body, *gender* has thus been defined as a social construct and, generally, perceived as an expression according to Francis & Paechter (2015), although gender encompasses more than just the expression. Understanding the differences between sex and gender aids people in creating connections between the inner experience and outer expressions. Where chromosomes, tied to sex, are thus far inaccessible for change, the outer gender expression is capable of change. Furthermore, even the biological sex is not as binary as often understood by the general population. An article by Ainsworth (2015) discusses the fluidity of the sex chromosomes and demonstrates that on a molecular level, even sex is not a dichotomy. Ainsworth (2015) gives an example of intersex individuals who are often neither male or female but rather possess a mix of female and male gonads and genitalia. Intersex individuals often undergo sex assignment surgery at a young age, without a possibility of consent, in order to be assigned as either male or female (Ainsworth, 2015). As a result, according to Ainsworth (2015), the developed gender identity often does not end up matching the assigned gender through surgery. Instances where the inner experience of gender does not match the outer expression of the gender, can lead to a change of gender expression, though the amount of desired change is dependent on the individual. However, being transgender, when the assigned sex at birth does not match the experience of gender, is often still tied to the duality assigned to gender by society where transitioning is generally

perceived as a transition from male to female or the other way around. Although that may be the case for many, gender is and never has been a pure duality.

Cultures throughout history have possessed different terms for people who do not identify as predominantly masculine or predominantly feminine. Many Native American cultures recognised greater varieties in individual's expression and identification of gender and had their own terms for this concept and for other genders (Sheppard & Mayo, 2013). Sheppard and Mayo (2013) describe the Third Annual Spiritual Gathering of Gay and Lesbian Native People in 1990, where a preference of a term was proposed for Native Americans who do not solely identify as male or female, or who were part of the LGBTQ+ community: Two-Spirit. This term was defined by Richard LaFontain (Nibley, 2010 as cited by Sheppard & Mayo, 2013) as "the masculine and feminine together are some-times reflected so completely in the body of one person it's as if they have two spirits". Other examples of a non-binary gender system can be found in Juchitán, Mexico with the *muxes,* the *hijras* in India, with the *Mino* warrior women of Dahomey/Benin, the *Mashoga* in Kenya, the *Sekrata* in Madagascar, the *Metis* in Nepal, the *Kathoey* in Thailand, the *Waria* in Indonesia, the *Xanith (Khanith)* in Oman, or the *Māhū* in Hawaii and other Pacific Islands. (Dozono, 2017, p.428)*.* Although these native cultures and traditions existed and still exist all over the world, through often violent colonization and the (forceful) spread of Christianity, many of these traditions have disappeared from general knowledge (Dozono, 2017; Sheppard & Mayo, 2013).

However, the non-binary nature of gender still exists and this concept is slowly gaining more understanding, acknowledgement and acceptance. Compared to the nature in which gender is often treated, as being binary, gender is a spectrum that can differ between people and within people at different points in time (Sheppard & Mayo, 2013). Since gender is entrenched in culture, as society evolves so do gender roles, gender expectations and gender expressions.

Therefore, in regards to the methodology of this study, gender will be treated as non-binary within the confines of studies on (gender in) education that mainly lends focus on males versus females in education. Instead of formulating questions in the survey as girls versus boys, questions will be worded as, for example, girls versus other genders. However, the term 'sex' will be used in some instances where the term 'gender' would in actuality be more correct, this usage is dependent on the term utilized by the researchers referenced in further sections, where older research oftentimes uses 'sex' instead of the use of the term 'gender' in more recent research for example.

2.2 Gender in education

2.2.1 Introduction

Throughout the history of education, genders have, in general, always been treated differently, ranging from differences in course material, to differences in admissions to educational institutions, with most discriminations and segregations geared towards disadvantaging women and girls (Nieminen, 2016). In the late 1800s, many countries in Europe were under pressure to admit women to universities as well, as mentioned by Nieminen (2016). The root cause of this pressure, together with a general feminine movement gaining momentum in Finnish society, strove to increase opportunities for girls in education and to guarantee equal rights for all genders (Nieminen, 2016). Though initially schools for girls grew in numbers and popularity in the late 19th century, Nieminen (2016) attributes the limited financial resources of the small nation of Finland and the growing interest in the pedagogy of co-education, to the greater network of co-educational schools. Furthermore, Nieminen (2016) adds, in the beginning of the 1900s, co-education became the norm rather than the exception in Finland. However, even these few, private (and later, state-owned) schools for girls were allowed to prepare girls for admission to university. As a consequence, these girls' schools attracted highly educated female teachers, some even held doctorate degrees, in return, whereas co-educational schools maintained a dominance of male teachers (Nieminen, 2016). After the intensive educational reform in the 1970s, all schools in Finland became both state-owned and co-educational, with a change of curriculum as a result (Nieminen, 2016). Before this reform, Nieminen (2016) documents, the curriculum for girls' schools was slightly different than in co-educational schools and included 'female-centred' classes such as handicrafts, home economics and gymnastics. This notion of feminine and masculine classes remains present in the subconsciousness of our modern society, and therefore, in the mind of teachers as well (Kollmayer et al., 2018).

Throughout in this section, perceptions on differences between genders within the educational setting will be discussed, starting from the discrepancy of classroom interactions between students and teachers, leading up to differences in perceptions from the teachers' point of view, and ending with an insight into the popular 'boy discourse'.

2.2.2 Classroom interaction

Beaman, Wheldall and Kemp (2006) outline in their article the historical background of research on differences between genders in classroom interactions. As they present research from the 1970s to more recent years, contrasting opinions and general tendencies in reported differences in classroom interactions are laid out henceforth.

Through the 1970s and up to the 1990s, researchers in this field argued and critiqued each other's findings frequently. One of the earlier works by Brophy & Good (1970, as cited by Beaman et al., 2006), observed that boys generally participated in more interactions with the teachers than the girls in their class, this observation was similarly concluded by French & French (1984, as cited by Beaman et al., 2006). Kelly (1988, as cited by Beaman et al., 2006) built on this earlier research by categorizing these interactions and confirming higher interaction levels between boys and teachers, especially in regards to behavioural and academic criticism. Although Kelly stated that girls received less criticism, they were also found to receive less instruction by teachers. These differences in interactions held up regardless of gender of the teacher (although boys did receive more attention from male teachers), age of the students, socio-economic status, subject area, ethnic origin and country. Furthermore, Kelly (1988, as cited by Beaman et al., 2006) reported that teachers were often not aware of their differences in interactions, which was supported by the findings of Spender (1982, as cited by Beaman et al., 2006). These findings were later heavily critiqued by Galton et al. (1999, as cited by Beaman et al., 2006) and Hammersley (1990, as cited by Beaman et al., 2006). Firstly, Galton et al (1999, as cited by Beaman et al., 2006) questioned the used of their earlier data (1970s) by French and French (1984, as cited by Beaman et al., 2006), where, according to Galton et al. (1999, as cited by Beaman et al., 2006), the findings, based on observation through a highly structured observation scheme, did not support the conclusion that teachers gave more attention to one sex over the other in their interactions. The second critique came from Hammersley (1990, as cited by Beaman et al., 2006), who questioned the value of the previous findings since they each stemmed from rather small-scale studies, that, in the case of French & French (1984, as cited by Beaman et al., 2006), relied on one interaction in one classroom. Hammersley (1990, as cited by Beaman et al., 2006) particularly commented on the generalizability of the study to wider populations. Furthermore, Hammersley (1990, as cited by Beaman et al., 2006) argued that equal attention to both sexes may not be desirable, as rather the type of interactions may present more significance in relation to the differences in achievement between boys and girls. This

difference between types of interactions was covered by Brophy and Good (1970, as cited by Beaman et al., 2006), Kelly (1988, as cited by Beaman et al., 2006) and Dart & Clarke (1988, as cited by Beaman et al., 2006), who all demonstrated that a large part of the differences in interactions between boys and girls could be attributed to behavioural criticism. Moreover, Brophy and Good (1970, as cited by Beaman et al., 2006) went as far as to claim that the boys brought criticism upon themselves because of their more disruptive behaviour. Kelly (1988, p. 21, as cited by Beaman et al., 2006) nuanced these statements however, by stating that, although boys did receive more criticism, they also received 'more instructional contacts, more high-level questions, more academic criticism and slightly more praise than girls'. This finding was supported by Irvine (1986, as cited by Beaman et al., 2006), who furthered this statement by finding that girls also received less academic feedback than boys. A further nuance came from Croll and Moses (1985, as cited by Beaman et al., 2006) who established that those students perceived as having behavioural and learning problems/disorders, received the most individual attention whether they were female or male. However, two-thirds of these students were boys. Lastly, Irvine (1986, as cited by Beaman et al., 2006) made an important distinction in their work, as race and grade level also played an important role in classroom interactions.

Researchers in the 1990s built on this previous research though focus shifted towards the different types of classroom interactions and the links with differences in achievement. At this moment, concerns towards the gender gap in achievement, with boys scoring lower than girls in general, rose significantly. Gorard (2002, as cited by Beaman et al., 2006) rejected the general idea of this concern through studying the achievements on the General Certificate of Secondary Education (GCSE) and A levels. Firstly, Gorard (2002, as cited by Beaman et al., 2006) noted that, at the lowest level of achievement, there was no significant gender gap. Secondly, this gender gap in achievement had existed as early as 1968, where the records started, therefore, this panic was nonsensical since boys had always underperformed compared to girls. The differential achievement on the GCSE was also a concern for Younger and Warrington (1996, as cited by Beaman et al., 2006), who, instead, focused on the differences in interactions between teachers and boys or girls. Rather than relying solely on observations, Younger and Warrington (1996, as cited by Beaman et al., 2006) interviewed the students to gauge their beliefs on differences in treatments by teachers. Where 70% of girls believed that teachers treated boys and girls equally, only 40% of boys shared this belief. This seems paradoxical, as girls are often more disadvantaged and would therefore be

assumed to perceive more differences in treatment, however, as will be explored further in this section, boys often receive more negative attention from teachers, such as reprimands. Furthermore, low-achieving students reported that the level, tone and quality of teacher-student interactions were a major concern that was reflected on their performance as well (Younger and Warrington, 1996, as cited by Beaman et al., 2006, p. 350). In contrast to the previous study method, Merrett & Wheldall (1992) again observed differences in interaction in teachers towards boys and girls, with a focus on praise and reprimands on academic and social behaviour. Though no significant differences were found in primary school classes, similar to studies by Dart and Clarke (1988), Galton et al. (1996) and Croll (1985) (all cited by Beaman et al., 2006), significantly more boys received attention (both positive and negative) from secondary school teachers. Furthermore, differences were found between female and male teachers' interactions with boys, with, respectively, more negative responses to social behaviour and more positive responses to academic behaviour ((Merrett & Wheldall, 1992). However, Younger et al. (1999, p.329, as cited by Beaman et al., 2006, p. 351) nuanced all findings by stating that teachers' attention was more in demand by boys, because 'the noise level of the boys, their off-task activities, their poor behaviour pattern and apparent limited attention span, inevitably attracted more attention', categorizing this more as a classroom management problem than anything else. Furthermore, Younger et al. (1999, as cited by Beaman et al., 2006) proposed that most of the negative attention could be attributed to a small group of boys who were repeatedly admonished for negative behaviour, this statement was supported by earlier research from Brophy, 1985; Brophy & Good, 1974; Croll, 1985;French & French, 1984; Swann & Graddoll, 1988 (as cited by Beaman et al., 2006).

Lastly, Myhill (2002, as cited by Beaman et al., 2006) argued that the differences in interactions had less to do with gender and more with differences in achievement. This author found that underachievers were less likely to interact positively within the classroom environment, which could explain the differences in interactions between boys and girls as well since boys are more likely to underachieve. However, Myhill (2002, as cited by Beaman et al., 2006) did find that even high-achieving boys participated less and less in the classroom as they grew up, which lessened the positive interactions as well. As children grow up and become more concerned with the view peers have on them, boys are more likely to stop interacting in classroom due to the negative perception of high academic achievement within boys' culture (Beaman et al., 2006).

2.2.3 Teacher's perceptions towards students of different genders

The differences in classroom interactions are a result of a multitude of factors, some of which will be discussed below. Evidently, there are multiple factors involved that may not be covered or widely known yet, however these are a few influences from and perceptions on different genders from a teacher's perspective.

As mentioned previously, differences in classroom interaction were often attributed to the behaviour of boys versus girls, or the achievement of both. According to Jones & Myhill (2004), boys are often perceived as more disruptive and in need of more (negative) attention from the teacher, which has, especially due to the more recent focus on the underachievement of boys, led to more focus and resources being directed towards this gender. Osler et al. (2002, as cited in Jones & Myhill, 2004) note that oftentimes girls are only the focus of concern when teenage pregnancy becomes a factor. However, the authors note, girls might simply be less overtly disruptive than boys, and, furthermore, are more likely to suffer mental health issues such as eating disorders, depression, self-harm and more. To continue with differences in perceptions regarding genders, the research by Jones & Myhill (2004) studied the perceptions of teachers over four groups of students, namely, the underachieving boy, the underachieving girl, the high-achieving boy and the high-achieving girl. The authors collected field notes, observations and interviews with teachers regarding who and what they perceive as the typical underachiever or high-achiever. Interestingly, the study found that teachers have a clear idea of what underachieving looks like, which is, in their mind, the boy who is bright but bored. Additionally, the underachieving boy and the high-achieving girl conform to the expected gender norms and are the typical 'boy' or 'girl'. In contrast, the behaviour of underachieving girls was rarely reported as an issue even though the researchers observed similar behaviour as in underachieving boys. Both groups had disruptive and non-disruptive underachievers. To conclude, Jones and Myhill (2004) note that the teachers perception of the gender identity of their students was highly influenced by expected, as in the norm, behaviour and vice versa. Finally, the, subconscious, perceptions of teachers on these gender stereotypes may thus lead to differences in interaction and expectations.

Continuing on the train of teachers' perceptions of students through gender, a study from Mullola et al. (2012) researched the gender differences of teachers regarding temperament, educational competence and teachability. A first finding of the research described how teachers perceived boys as possessing a higher level of activity, negative emotionality,

inhibition and distractibility, however, persistence, mood and educational competence was rated lower than within girls (Mullola et al., 2012, p.199). As a result of these perceptions, the researchers linked these traits to an indication of problems in boys' compliancy with teacher demands and placed boys at more risk of negative teacher-student relationships, which, in turn, can result in lower achievement. A further finding concluded that male teachers rated boys' and girls' persistence, educational competence, distractibility and inhibition closer together than their female counterparts. Although previous research mentioned by Mullola et al. (2012) noted that male teachers practised a more gentle and understanding pedagogy, this was not the case towards girls. Furthermore, male teachers were more strict and critical in their perceptions of girls' traits and perceived girls as having a lower persistence and educational competence which was a contrast to their hypothesis.

Another study regarding the perceptions of teachers, though towards gender stereotypes in this case, was conducted by Gray & Leith (2004). These authors described some potential consequences stemming from different perceptions teachers have of students of different genders. As mentioned previously, in the classroom girls are perceived as more compliant, better behaved and less demanding when compared to boys. Although this is often seen as an advantage towards higher achievement, the authors collected research to demonstrate this might not be the case. From despising the conformity of girls (Stanworth, 1981 and Walkerdine, 1990, as cited by Gray & Leith, 2004) and considering the lack of conformity of boys as more interesting (Barber, 1994 and Pickering, 1997, as cited by Gray & Leith, 2004), teachers' perceptions are not always unfavourable towards boys. Furthermore, Marshall and Smith (1987, as cited by Gray & Leith, 2004) discovered that although teachers may mark girls' work as correct or incorrect, boys were provided more in-depth explanations. Additionally, achievement and failure of boys and girls is regarded differently by teachers (Kollmayer et al. 2020). A study documented by Kollmayer et al. (2020) and Gray & Letith (2004) from Tiedemann (2000) described teachers' perceptions in primary school to differ between average achieving boys or girls in mathematics, teachers perceived this group of girls to be less talented than the equally achieving group of boys. Additionally, Fennema et al. (1990, as cited in Kollmayer et al., 2020), failure of boys was perceived by teachers to be a consequence of lack of effort, whereas the failure of girls was more likely to be attributed to low ability.

These perceptions may have significant impact, especially when parents assign lower expectations or abilities to their daughters than their sons which can affect girls' self-worth

and sense of self-competence, this was also reported by Wigfield et al. (1997) and Wigfield (1994) (as cited by Gray & Leith, 2004). Furthermore, perceptions towards abilities or expectations towards achievements of students depending on the gender are related to gender stereotypes held by parents and teachers (Jussim et al., 1996; Wang and Degol, 2013, as cited in Kollmayer et al., 2020). Assumptions towards differences in achievements, social abilities and personalities correspond heavily with the traditional gender roles and, as a consequence, have a large impact on educational domains being regarded as 'masculine' (STEM) or 'feminine' (languages) (Ceci and Williams, 2007, 2010; Steffens and Jelenec, 2011, as cited in Kollmayer et al., 2020). Even now, men are underrepresented in health, education and other socially oriented sectors, whereas women are underrepresented in science, technology, engineering and mathematics (STEM) (Boniol et al., 2019; European Commission, 2019, as cited in Kollmayer et al., 2020, p. 2).

One such result stemming from classroom interactions and teachers' perceptions of students of differing genders, is the construction of the 'ideal student' as female (Beaman et al., 2006). This phenomenon, coined previously by Younger et al. (1999, as cited in Beaman et al., 2006, p. 354), developed through the characterisation of high-achieving girls as possessing a high level of focus, willingness to engage with the teacher and ability to stay on task, which was summarized by Myhill (2002, p. 350, as cited in Beaman et al., 2006, p. 354) as girls being 'compliant, conformist and willing to please'. These traits were perceived by teachers as a preferred characteristic when compared to boys' (stereo)typical behaviour which is often viewed or described as disruptive in the classroom (Beaman et al., 2006). A first response on these perceptions was donned by Myhill (2002, as cited by Beaman et al., 2006), who argued that these characteristics may be preferred in the classroom, however, they are not advantageous in the workplace. In fact, Myhill (2002, p. 350, as cited by Beaman et al., 2006, p. 354) went as far as to state: 'Few company executives, politicians, lawyers, and so on would be described as compliant and conformist, though their PAs may well be!' Secondly, researchers such as Backe-Hansen & Ogden (1996) and Trent & Slade (2001) (as cited by Beaman et al., 2006) note that the 'traditional' boys' behaviour was seen as less desirable and would be at risk of pathologizing by the teachers. However, research gathered in the article from Beaman et al. (2006) from authors such as Connell (1995), Francis (2000), Skeggs (1997), Skelton (2001) and Skelton & Francis (2003), criticise this notion as it is stemming from sex role theories, where gender is fixed and children simply absorb society's messages on gender norms and appropriate behaviour. Moreover, in the opinion of sex role theorist,

Skelton and Francis (2003, as cited by Beaman et al., 2006) argue, masculinity and femininity are inherently tied to respectively, the male and female body, whereas gender role theorists such as Skelton and Francis (2003, p. 196, as cited by Beaman et al., 2006, p. 357) see gender as fluid and shaped by context such as social class, ethnicity, religion, age, sexuality and more. Another gender role theorist, Francis (2000, as cited by Beaman et al., 2006) discusses that, where the girls' perception of the female gender role has transformed over the last decades, boys' perceptions have remained fairly the same. Moreover, this last author notes, whereas girls' behaviour in the classroom may be interpreted as the 'ideal student', the 'typical' boys' behaviour may be resulting in more popularity and remained reinforced through attention given by fellow classmates and teachers alike. Although the boys' inappropriate behaviour could be pathologized, it has been fortified at the same time.

The pathologisation of boys' 'typical' behaviour has had far-reaching consequences, apart from the effects on classroom interaction and potential underachievement. Backe-Hansen & Ogden (1996) and Skårbrevik (2002), as cited in Beaman et al.(2006), discovered that the population of children eligible for special education provision was for 65-70% represented by boys. This overrepresentation of boys in special education schools and in special classes was also reported by the OECD in 2000, with girls only accounting for 30-40% of the population in special schools (Benjamin, 2003, as cited in Beaman et al., 2006). Furthermore, Lerner (1993) and Kavale & Reese (1992), as cited in Beaman et al. (2006), found similar proportions in the USA. Specifically for the diagnosis of Attention Deficit (Hyperactivity) Disorder (AD(H)D), Berry et al. (1985, as cited in Beaman et al., 2006) described the ratio of diagnosis for boys to girls between 4:1 and 6:1. More recently, studies described by Kvande et al. (2018) in Norway, Coutinho and Oswald (2005), Dyson and Gallannaugh (2008), Hibel, Farkas, and Morgan (2010), Nordahl and Sunnevåg (2008), confirmed the overrepresentation of boys amongst special education students. Studies researching this overrepresentation directly describe the effect of classroom behaviour and teachers' perceptions towards boys and girls as a defining factor (Anderson, 1997, Skårbrevik, 2002, as cited in Beaman et al., 2006, and Mullola et al., 2011;2012, as cited in Kvande et al., 2018). Kvande et al. (2018) attribute the easily distractive behaviour boys frequently present as a normal developmental period, that shifts between the ages of 8-10 and 10-12. Additionally, this overrepresentation may not only affect boys disproportionally through overrepresentation and over-diagnosis, girls are affected in the opposite direction, with under-representation and they are not as frequently identified since their behaviour and needs often present differently in the classroom

than the obvious and disruptive behaviour more often perceived in boys (Beaman et al., 2006).

To conclude, interaction differences between teachers and boys or girls have a lasting effect on the perceptions teachers possess of these genders. Furthermore, we may even see that they have evolved into gender stereotypes. The perceptions described by Jones and Myhill (2004), Mullola et al. (2012) and Gray & Leith (2004) are remarkably similar to stereotypes noted in a survey by Chikunda (2010) on the gender awareness of science teachers and, furthermore, Jones and Myhill (2004) even compiled a list of comments teachers made, of which several where uttered by numerous teachers, which may show that some have shifted into a general consciousness. More than just stereotypes in the classroom, these perceptions from teachers have had an impact on referral and diagnoses for special education, in which boys are significantly overrepresented (Beaman et al., 2006).

2.2.4 Boy discourse

As mentioned briefly in the previous sections, in the last few decades a new discourse arose as a result of achievements on tests becoming public. The aptly named 'boy-discourse' or 'boy-crisis' concentrates on the lower, general, achievement of boys when compared to the results of girls on the same tests (Arnesen et al., 2006; Jones & Myhill, 2004; Lahelma, 2005). According to Arnesen et al. (2006), the 'boy-discourse' appeared in the early 1980s in Britain, the USA and Australia before traveling to the Nordic countries. Epstein et al. (1998, as cited in Arnesen et al., 2006) recounted the beginning of this discourse as a worry for the new place for white-working-class and middle class boys after the collapse of traditional industries, where routes from school to work were restricted for these white-working-class boys and that middle class boys were threatened by the academic success of middle class girls (Walkerdine, Lucey & Melody, 2001 as cited in Arnesen et al., 2006). This claim remained unfounded since there did not seem to be a significant impact on future success due to boys' underachievements (Francis and Skelton, 2005 as cited in Arnesen et al., 2006). Furthermore, Lahelma (2005) described the discovery in the 1980s that, although girls achieved better results lower secondary education, they were less likely to be admitted to their field of choice in further secondary studies. Unfortunately, this rhetoric of boys' chronic underachievement in the past decades remains stuck in the minds of teachers, principals, experts, politicians and the general population and gains more attention every time the PISA results are published (Lahelma, 2005, 2014). Arnesen et al. (2006) define four assumptions drawn from Lahelma's

(2005) analysations of the Finnish media, though similar reasonings have been found by Francis & Skelton (2005, as cited in Arnesen et al., 2006). Firstly, achievement results are generalised as all girls versus all boys, with all the boys being presented as underachievers. A second assumption relates to the perception of the girls' achievement as problematic. Thirdly, the working methods and the 'feminization' of schools are directly attributed to the boys' lack of success at school. Lastly, the argument presumes that achievement in school is directly reflected onto future achievements, the labour market and society in general (Arnesen at al., 2006, p.4). As demonstrated by Lahelma (2005), in regards to the labour market, future achievement and society in general, the availability of resources in boys' lives are not as present in the lives of girls in Finnish society. Resources such as the military service that can lead to more direct career paths without taking academic performance into account, which 80% of the male population still went through in 2005 (Lahelma, 2005), more opportunities for professional sport activities, and technical fields, which are still presumed to be a masculine field and mainly are accessed by men. Furthermore, a survey described by Lahelma (2005) (Karjalainen, 2003) revealed that, although men and women worked equally as many hours while studying, female students generally earned three-quarters of the earnings of men. This discrepancy was mainly attributed to the differences in fields of work with women primarily working in cafés and retail areas where, in general, men obtained jobs in well-paying fields such as taxi driving, IT and in the army. Due to the discrepancy of resources available to men and women, low achievement in school may simply present more risks for women than for men (Lahelma, 2005). Moreover, in the Finnish education system and the labour market, entrance exams were generally more selective in typical female-dominated fields, which lead to high-achieving girls or women to compete with other girls and women with a good education and excellent marks (Lahelma, 2005, 2014). As is the case in other countries, women are more likely to pursue higher education than their male counterparts as typically female-dominated fields are more often available after higher education. Whereas male-dominated fields, such as electricians, are fields accessible through upper-secondary or vocational school, female-dominated fields, such as early childhood education or education in general, require a university's degree. Although this analyses was presented by Lahelma in the 1980s, this pattern had not yet changed in 2014 (Lahelma, 2014). A further issue present when scrutinising the 'boy discourse', is the connection this discourse has with the rising interest in achievement tests. National and international achievement tests have been conducted throughout education's history, though the current political climate and policies lend more and more focus on the results stemming from these tests. Furthermore, these widely

conducted tests are easy to categorise according to gender since other categories such as ethnicity and socio-economic status are perceived as too sensitive (Arnesen et al., 2006). Differences in achievement between Finnish girls and boys were widely documented after the PISA results were publicised (Lahelma, 2005), although, in actuality, Finnish boys did score higher than boys and girls of many other countries. The Finnish boys were described as 'losing' to the girls, as though it is such a dichotomously loaded competition in the first place, and as if all boys were underachieving and all girls performing at the highest level. As laid out by the OECD (2017) there are still subjects majorly attended by women, such as health and education, and subjects studied mostly by men, in general STEM-related fields. Therefore, there might not be that great competition between genders to access higher education. However, instead of focusing on girls versus boys, focus should be given to students with a lower socioeconomic background as they have a greater chance to score lower on the PISA reading tests and are less likely to enter general upper secondary education, and thus, tertiary education (OECD, 2021). In contrast, these statistics on gender differences were just that, a generalisation of the achievement of students according to their gender, and, furthermore, the Finnish boys still performed admirably and better than many students in other countries (Arnesen et al., 2006). In the article by Beaman et al. (2006), studies by Yates (1997) and Gorard (2002) noted that this flame of attention on underachieving boys, was fanned in Austalia and the UK through only a small amount of girls succeeding at the highest level, rather than all girls as would be believed. However, due to the attention these results gained, policies, schools and teachers have commenced to identify the educational structure in itself as the problem in underachieving boys. In characterizing the needs and development of boys as natural and completely different from girls, all boys are generalised and perceived to act similarly and to be interested in the same activities (Lahelma, 2014). Furthermore, this generalisation and focus on the dichotomy in boys' and girls' achievements, the hugely influential aspect of the socio-economical class is disregarded and ignored (Arnesen et al., 2006). A small-scale ethnographic study conducted by Norema, Pietilä, and Purtonen (2010, as cited in Lahelma, 2011, 2014) demonstrated the impact of this idea on teachers through observations and interviews in context of the TASUKO project (translated in English as Gender Awareness in Teacher Education as quoted in Lahelma & Tainio, 2019, p.2). Some teachers exhibited a distinct lack of gender awareness while others would encourage student teachers to ignore boys' breaches of discipline and order as it was a 'phase in the development of boys'. Though the second group was aware on some level of gender issues, they were unaware of the actual issues in regards to gender awareness, as have been mentioned in the

previous sections. Lahelma (2014) described further reactions of teachers in regards to the boys' underachievement, ranging from teachers declaring themselves unable to pay attention to the needs of boys (Vidén and Naskali, 2010, p. 46 as cited in Lahelma, 2014, p.176) to actively encouraging boys whenever they participated in activities, even if they performed inappropriately, in the name of a 'pedagogy for boys' (Lahelma, 2014, p.176). Moreover, according to Lahelma (2014, p. 176), a study from Kuusi, Jakku-Sihvonen, and Koroma (2009) discovered that boys, on average, were given better grades in the Finnish language than their test scores merited.

To summarize, although there is a gap in achievement between boys and girls, labelling this as a 'boy crisis' minimizes the difficulties certain groups of students still face currently. Rather than generalising and comparing the achievement of boys and girls, focus should be given to low-achieving children in general, especially those from disadvantaged backgrounds (Lahelma, 2005, 2014). As demonstrated by the OECD (2021), students with parents who have not entered tertiary education are less likely to do so themselves, and are more likely to attend vocational schools, furthermore, children who are a first- or second-generation immigrant are less likely to attend general upper secondary education instead of vocational schools. Furthermore, studies mentioned by Lahelma (2014) argue that the issue perceived by the 'boy discourse' is more likely to be a result of the culture they grow up in. Boys who perform well in schools are often teased or bullied because of their grades, especially amongst boys from working-class backgrounds. In contrast, activities and interests deemed as 'masculine', such as sports, are more appreciated in boys' cultures (Lahelma, 2014). In conclusion, underachievement in boys does persist, although it is not as much of a problem for future achievement as it is perceived as. Moreover, this underachievement is probably not a direct result of the educational system in itself, but rather the society and its values as a whole.

2.2.5 Gender non-conformity in education

Though some teachers believe there is a need to support and pay attention to the needs of boys, and other teachers believe gender awareness is ultimately not important in their professional lives, there is a group of students who do require more support than they are currently given (Lahelma, 2014).

According to a Norwegian study by Anderssen et al. (2020), both binary and non-binary transgender students reported greater dissatisfaction with life, greater feelings of loneliness, more mental health problems and disorders, and ultimately, a greater amount of self-harm, suicidal thoughts and even suicidal attempts. Compared to their cisgender peers, of which 3-5% of participants in the study by Anderssen et al. (2020) reported suicide attempts, 21-23% of transgender participants reported attempts at suicide. Furthermore, 62-64% of transgender persons reported having suicidal thoughts, compared to 18-22% of cisgender people (Anderssen et al., 2020). Additionally, in the research analysed by Anderssen et al. (2020), 50-62% of transgender youth reported a high prevalence of mental health problems, compared to 15-31% of cisgender youth (15% reported by male participants and 31% reported by female participants). Although all people reporting high levels of mental health problems should be supported, the high amount of transgender students reporting mental health issues and suicidal thoughts is worrying. According to Anderssen et al. (2020), these increased issues reported by transgender participants can be attributed to the violation of existing, cisnormative gender norms, which leads them to experience a greater risk of discrimination and harassment. Furthermore, the highest percentage of mental health problems was reported by non-binary transgender participants which, according to Anderssen et al. (2020), can be attributed to the issue of not conforming to a cisnormative society, as Norwegians hold more negative attitudes towards gender-fluid people than those receiving gender-affirming care.

These issues with negative perceptions and mental health issues in transgender people reveal the need for the education of teachers on gender issues as these are prevalent in a school-aged population. Ullman's (2017) research revealed that 88% of gender-diverse students had heard transphobic language at school, with 67% of gender diverse students hearing this language on a weekly basis. Furthermore, as researched by Ullman (2017), a connection to a positive school climate reported by gender and sexuality diverse students was largely explained by teacher positivity towards gender and sexuality diversity. As pointed out by Ullman (2017), sexuality and gender diverse students report a higher academic self-concept, greater

confidence and being more motivated learners when having teachers who are supportive and positive in regards to sexuality and gender diversity, while the opposite relationship is also evident. These findings highlight the need for trained, knowledgeable and supportive teachers and staff in the school environment (Ullman, 2017).

Consequently, Berg & Kokkonen (2021), examined the views of Finnish physical education teachers and LGBTIQ+ students on heteronormativity, discrimination and equality in physical education. Firstly, the teachers in this study reported a tolerance towards difference between the heterosexual and cisgender majority and the LGBTIQ+ minority, rather than equality. Similar to the reported 'gender neutrality' view proposed by Lahelma (2011), the teachers in the study by Berg & Kokkonen (2021) found a demand for complete equality or challenging heteronormativity unnecessary and excessive. Furthermore, many practices reported in physical education by Berg & Kokkonen (2021) were divided according to the perceived dichotomy of gender, such as locker rooms or positions in traditional dancing. However, a few teachers reported on finding ways to queer the physical education, such as unisex or separate locker rooms or using words as 'leader' and 'follower' instead of 'boy' and 'girl' when teaching traditional dances.

Lastly, with the introduction of the new Finnish national core curriculum for compulsory education in 2014, came the first-time inclusion of the prohibition to discriminate based on sexual orientation (Kjaran & Lehtonen, 2018). Furthermore, this new national core curriculum added that basic education should provide knowledge and understanding of gender diversity and, as students' gender and sexual identity develops during compulsory education, the learning community and its' values and practices advances gender equality and supports students in constructing their identities (POPS, 2014, p. 18 and 28, as cited in Kjaran & Lehtonen, 2018, p. 1038). Furthermore, due to legislation renewed in 2014 according to Kjaran & Lehtonen (2018), a plan to address gender equality, including trans people and sexual minorities, must be in place in all schools and educational institutions rather than only being required in upper secondary and higher education as was the case previously. However, despite these new laws, Ikävalko (2016, as cited in Kjaran & Lehtonen, 2018) states that many educational institutions have not changed the relevant policies, nor have they been held accountable or been monitored by the government. Furthermore, in a study presented by Lehtonen (2012) and Lehtonen, Palmu, and Lahelma (2014, as cited in Kjaran & Lehtonen, 2018), most teachers did not consider their schools a safe place for non-heterosexual youth if their identies were common knowledge and non-heterosexual teachers were often expected to

hide their identies. In striking contrast, most teachers in this study did not desire more information on sexual orientations. The organisation SETA (a Finnish LGBTIQ+ rights organisation), upon request, provides free teachings to staff at educational institutions on LGBTIQ+ issues, however, even when these trainings happened each year within the same school, teachers rarely took responsibility in changing the curriculum or challenging heteronormativity (Kjaran & Lehtonen, 2018). Lastly, the Secretary General of Seta made the following remark to Kjaran & Lehtonen, (2018, p. 1040):

> "The requirements of our curriculum documents are not demanding enough, nor are the requirements for teacher training. Though many people are pleased that someone is dealing with issues of sexual and gender minority youth in society, there are many who think that it is the business of Seta alone. That makes it unequal in a way, while with that kind of thinking, the youth belonging to the majority would get support, service, information and teaching from the public services."

2.3 Gender in teacher education

In the history of teacher training programs in Finland, most teaching seminars were segregated in regards to the sexes, and in those institutions that were co-educational, the curriculum was different for men and women (Lahelma, 2011). When the universities were tasked with taking over the teacher education in 1971, strict gender-segregation was no longer a reality (Sunnari, 1997, 2003, as cited in Lahelma, 2011). Contrastingly, a quota for male students entering the teacher training program remained in place, which was set at a requirement of 40% males to be accepted into the program. This was abolished in 1986 when it was deemed unlawful by the Act on Equality between Women and Men, as illustrated by the fact that the quota led to male candidates with lower credits than many female candidates being accepted in this educational program (Lahelma, 2011). However, as Lahelma (2011) demonstrated, this abolition did lead to discussions and worries over the assumed feminisation of the program and the effects this may have on boys. This perceived 'need' for male teachers resulted in the issue that male (student) teachers are often the recipients of hidden support at all steps to and in the teaching profession, which is felt by the female (student) teachers as they report on perceiving their male colleagues to be favoured in the application process, during the teacher education, when applying for jobs and in the staff room (Sunnari,1997; Lahelma et al., 2000; Vidén & Naskali, 2000; Lehtonen, 2011, as cited in Lahelma, 2011). Even after the relatively recent TASUKO project (translated from Finnish to English as Gender Awareness in Teacher Education, Lahelma and Tainio (2019), p.2), conducted between 2008 and 2010, students sometimes still reported that male students are more often the recipient of positive attention than their female peers (Knuutila, 2012, as cited in Lahelma, 2019, p. 8), as illustrated by this respondent: "During the lecture, a male teacher educator wanted to bring the male students in front of the classroom because he was so proud of all of them." Furthermore, in the same study from Knuutila (2012, as cited in Lahelma, 2019), when discussions of gender and sexuality took place, half of the responding students described them as conducted in gender stereotypical and heteronormative ways. Lastly, in a questionnaire filled in by student teachers before a class by Sikes (1991), the surveyed student teachers showed that gender stereotypes were part of their general, personal knowledge on society. Which is not surprising, this last author states, since they have received their gender socialisation at the same place as the rest of society, such as at home or at school. Consequently, Sikes (1991) reasons, teacher educations have a duty to aid students in analysing and evaluating these generalised ideas in a critical manner, and educating students

in critical thinking should not be limited in this singular aspect but be encouraged on all aspects of society. Furthermore, in regards to resources used in educational practices, which are predominantly textbooks since these are still the main resource used for teaching, Tainio & Karvonen (2015) analysed 59 textbooks used in Finnish comprehensive education and discovered that the majority of references, both in pictures and in texts, were of males. Moreover, in textbooks used for literature teaching, the overwhelming majority of authors of books and texts referenced or used were male authors. Additionally, no mention was found of any other sexuality than heterosexuality which was depicted as the normal and only form of sexuality and relationships. However, when teachers in the study by Tainio & Karvonen (2015) were guided to pay attention to gender differences and biases in textbooks, they were able to notice and reflect on the gender stereotypes. Additionally, Tainio & Karvonen (2015) explicitly mention that their method of having teachers discuss and reflect with each other on textbooks or other resources would be a useful tool to use in the teacher education programs to provide student teachers with information, ideas and tools to work on gender equality

Continuing with the teacher education program, in 1988 the "Commission of Gender Equality in Education" recommended that the promotion of gender equality in (student) teachers' professional career should be provided in the teacher education programs (Ministry of Education, 1988, as cited in Lahelma, 2011). This recommendation was also suggested in official policy statements from the ministry of Education in the Czech Republic, as documented by Krišová (2020). Some reasons for the need of teaching gender awareness in teacher training, documented by various researchers, were collected by Krišová (2020). Firstly, as Erden (2009, as cited in Krišová, 2020) proved, courses in gender equality in education improve student teachers' attitudes towards gender issues. Furthermore, Consuegra, Engels, & Willegems (2016, as cited in Krišová, 2020) provided evidence that video-stimulated recall can potentially increase the self-reflection of behaviours towards genders, within the classroom, of teachers. A conclusion provided by Gullberg, Andersson, Danielsson, Scantlebury, & Hussénius (2018, as cited in Krišová, 2020, p. 84) summarizes three actions that can pave the path towards gender awareness in teaching, which are, the ability to detect a gendered situation, the ability to self-reflect one's behaviour, and the ability to counteract stereotypical patterns.

However, when conducting research connected to the TASUKO project (translated from Finnish to English as Gender Awareness in Teacher Education, Lahelma and Tainio (2019), p.2) between 2008-2010, researchers concluded that the received teacher education did not

provide them with tools to promote gender equality (Norema, Pietilä & Purtonen, 2010, p. 36, as cited in Lahelma, 2011, p. 265). In Lahelma and Tainio's (2019) study on gender awareness in teacher education, an examination of materials and courses on gender issues covered in the curricula during the TASUKO project was laid out. Several shortcomings were thus described by Lahelma and Tainio (2019). Firstly, good teaching practices related to gender equality detailed in equality projects (Brunila, Heikkinen & Hynninen, 2005, as cited in Lahelma and Tainio, 2019) were not included in the teacher educational programs. A second issue suggested by studies conducted during the TASUKO project is the repetition of stereotypical dichotomous understandings of gender in courses and course materials (e.g., Vidén & Naskali, 2010; Norema, Pietilä & Purhonen, 2011; Lehtonen, 2011; Jauhiainen, Laiho& Kovalainen, 2014, as cited in Lahelma and Tainio, 2019). Sikes (1991) proposed this issue already in her study conducted in the 1990s, and suggested that all teachers within teacher training schools examine their own courses and teachings to evaluate and examine for gender bias or stereotyping present. Thirdly, Lahelma (2011, p. 5) stated that it was even usual to qualify as a teacher without ever having heard of the requirements of the Act on Equality between Women and Men (1986/2005), nor having learned what the requirements would mean for pedagogical or school practices and processes. In conclusion, as mentioned by Lahelma & Hynninen (2012), the action plans to promote gender equality of the universities were exposed to be rather superficial. Although gender research in education in Finland is conducted at a high standard, this examination of gender awareness in teacher education showed the lack of its inclusion in the teacher education programmes, and, furthermore, if gender courses or studies were part of the teaching programs, these were the results of individual teacher educators or/and researchers (Lehtonen, 2011, as cited in Lahelma, 2011), who were often at the receiving end of negative comments from colleagues as well.

Between 2015-2017, researchers in a project named GENTE (Gender in Nordic Teacher Education, 2015-2017, as cited in Lahelma and Tainio, 2019, p. 9) interviewed teacher educators on the coverage of gender awareness in their courses. Progress was evident as at least 5 compulsory courses were found in the teacher training program at the University of Helsinki that included gender issues as one of the main topics. Additionally, in different subject-specific classes, issues regarding sex, gender and sexuality were mentioned, as well as one-day seminars that were organised on a regular basis. Still, no courses focused on gender and sexuality in education. Unfortunately, after financial reductions were enforced by the

Finnish government, many of these courses at the University of Helsinki were reduced and filled with new topics, or offered as a voluntary course only (Lahelma and Tainio, 2019).

In her article, Lahelma (2011) touches upon a reason why gender awareness is often a difficult subject to include in any program, namely the effect gender awareness has on the students in question. As opposed to mathematics or reading, learning to perceive gender differences and inequalities that are built in teacher practices, processes and learning, leads to the realisation of the existence of these same patterns in every place and moment in society. Furthermore, Marie Carlson (2008, as cited in Lahelma, 2011) argues that the challenge of teaching gender awareness is also connected to critical theory that is often avoided in teacher education, as in, changing or reflecting on the world view of students, automatically invites resistance, opposition and arguments, which was also proposed by Sikes (1991). This idea is supported by findings connected to the TASUKO project, where Vidén & Naskali (2010) reported on the view mostly male students held towards gender awareness as well:

When discussing these themes, it is kind of experienced – the boys experience it – as if it is directed towards them as individuals, and that, kind of, men are being evaluated and criticized, and this is just the traditional, classical expectation. [Sometimes] even girls have stood up [...] to strongly defend men (Vidén & Naskali, 2010: 57).

Additionally, Lahelma (2011) confirmed similar experiences and connected these findings to a concept offered by Holland et al. (1999), as "the male in the head", which was used to analyse moments where women agreed to practice unsafe sex because they want to please their male partners. This concept translates to the idea that women, unconsciously, take the feelings, believes and attitudes of men into account and even rank them as more important than their own.

Another challenge of introducing gender awareness in teacher training in Finland specifically, is the belief, in Finland, of gender neutrality, where gender is not discussed with the idea that this negates gender inequalities (Lahelma, 2011). However, as addressed by the Ministry of Social Affairs and Health (2010, as cited in Lahelma, 2011), gender segregation in educational choices is especially strong in Finland and is regarded by the EU as an issue. Lahelma (2011) illustrates this issue through the craft education in schools where technical and textile crafts are included without noting a gender connected to these subjects. However, schools are not instructed nor aware of how to address gender stereotyping in this matter and,

as children (and their parents) have to choose one or the other early on in primary school, the choice is divided quite strictly by gender (Kokko, 2009, as cited in Lahelma, 2011).

Lahelma and Tainio (2019) give further context towards the reason that gender equality work is often difficult to maintain or pursue. As stated in a previous section, gender remains frequently perceived as a dichotomy, which was even included in a definition of the Council of Europe where mention was made to the complementarity nature of women and men and their diverse roles in society (Lahelma & Hynninen, 2012, as cited in Lahelma and Tainio, 2019, p. 3). Additionally, a second problem may have risen from the disappointing past in gender equality projects, where similar projects are repeated on both a national and an international scale, though without any lasting results (Brunila 2009, Lahelma, 2011, as cited in Lahelma and Tainio, 2019). Lastly, equality work is often criticised that it may even strengthen inequalities, an example given by Lahelma and Tainio (2019) illustrates this by pointing out that the acts of writing these policies and documents are often perceived as an achievement of equality in itself, without further actions committed (Ahmed 2012, Ikävalko & Kantola, 2017, as cited in Lahelma and Tainio, 2019).

Promoting gender awareness in education falls under the term 'equality work', as described by Brunila & Kallioniemi (2018). Furthermore, 'equality work' encompasses activities as teaching, training, guidance and research in regards to promoting equality in terms of gender, sexuality and other differences (Brunila & Kallioniemi, 2018, p. 540). Since the 1970s, according to Brunila & Kallioniemi (2018), equality work has been on the agenda in Finland and has been carried out in many areas within the field of education, with gender equality promotion in teacher education starting in the 1980s. However, challenging heteronormativity has proved to be decidedly difficult to promote in teacher education (Brunila, Heikkinen and Hynninen, 2005, as cited in Brunila & Kallioniemi, 2018). One explanation for this challenge, according to Brunila & Kallioniemi (2018, p. 540), is the traditional characterisation of teachers as model citizens of enlightened thinking, moral order and ethical values (e.g. Ball, 1990; Hakala, 2007; Weber and Mitchell, 1995), which is illustrated by the highly regulated admission process prospective teachers went through up until at least the 1980s, ranging from health certificates provided by doctors, to, before the 1980s, certificates issued by the clergy confirming 'morality', strongly linked to Christian values. Consequently, the idea of the 'normal' body and lack of sexuality has remained (Hakala (2007), Rinne (1986), Vuorikoski and Räisänen (2010), see also Simola (1995), as cited by Brunila & Kallioniemi, 2018). Revolving back to gender equality in teacher education, Brunila & Kallioniemi (2018)

disclose the results of a report published in 2009 on gender equality in higher education. Although the results showcased ambitious objectives in regards to promoting gender equality in higher education, these objectives seemed to be discerned as separate from educational policies within the teacher education programmes. Moreover, Brunila & Kallioniemi (2018) document that within the educational policies, issues around heteronormativity and gender diversity have been intentionally ignored, and, additionally, when referring to gender, gender is documented as the idea of the dichotomy of gender, with only women and men existing (Brunila and Ikävalko, 2012, as cited in Brunila & Kallioniemi, 2018). Within the teacher education program, attention should be paid to the incorporation of anti-homophobic and anti-heterosexist education into the courses (Clarke (1998), Epstein & Johnson (1998), Ferfolja (1998, 2003, 2005, 2006, 2007), Griffin (1992), Irwin (1999), Khayatt (1992), Robinson (2005), Szalacha (2004), as cited in Robinson & Ferfolja, 2008). More than just these two issues, education around being transgender and/or gender-expansive should be included as well since the advancement of thinking beyond the binary is essential for the progress of equality in both education and society (Mangin, 2018, Brunila & Kallioniemi, 2018). Although it is often believed that these subjects should only be discussed when confronted by non-heterosexuality or by non-cisgender people, and that they are of less relevance than other issues of social justice, the unawareness of this knowledge greatly restricts all individuals and how they perceive gender (roles) and sexuality (Robinson & Ferfolja (2001, 2002), Robinson & Jones-Diaz (2006), as cited in Robinson & Ferfolja, 2008). Furthermore, teachers of the younger grades often perceive this subject as not relevant for their target age group since it is believed only to be an 'issue' appearing in adolescence (Robinson and Jones Diaz, 2000, as cited in Robinson & Ferfolja, 2008). However, as is demonstrated by Mangin (2018, p.17), children's core gender identity develops at the age of three and continues to evolve through young adulthood, which makes it undoubtedly a subject even early childhood educators should be educated in. Mangin (2018) finishes their article by providing some preliminary changes teachers can make in the classroom, which can be covered in teacher education as well, such as providing books or using less gendered language in the classroom.

As Brunila & Kallioniemi (2018) conclude, teachers are an essential component of society, especially since they reach all members of the society at a crucial point in life. Therefore, it should be assumed that 'equality work' and teachings beyond the binary are a fundamental part of the teacher education programmes, however, this has not yet proven to be the case (Brunila & Kallioniemi, 2018).

In response to the matter that teachings to confront gender stereotypes and induce gender awareness are rarely occurring within teacher education, Kollmayer et al.(2020) developed the teacher training program REFLECT to expand teachers' knowledge and abilities to encourage students to pursue their goals rather than feeling restricted due to gender stereotypes. Furthermore, Kollmayer et al. (2020) reflect, the success of these kinds of projects is based on teachers' willingness to reflect on own gender stereotypes, attitudes and teaching practices in regards to examining how they cut down on gender stereotypes (Horstkemper and Faulstich-Wieland, 1996, as cited in Kollmayer et al., 2020). As demonstrated in Gray & Leith (2004), teachers often lack strategies to combat gender stereotyping in their own teachings, which is maintained by the fact that this is rarely addressed in teacher training education. However, as Kollmayer et al. (2020) continue, training programs addressing teachers are of great importance since teachers work with hundreds of students and, therefore, spread their knowledge even further than when projects only target the students themselves. Exploring the results of their project, Kollmayer et al. (2020) conclude that, as a result of the pilot study REFLECT, teachers were more confident in the promotion of students' motivation regardless of gender, and that this project led to increased knowledge on gender differences in education and in knowledge on teaching practices geared towards autonomy and individualisation. However, as has been an unfortunate result in multiple studies, the training program was not further implemented in the training program.

Even though great progress has been made in the effort to include gender awareness and to promote gender equality in teacher training programs, they have proven to be immensely difficult to maintain as an issue worth including in the mandatory teaching programs. Not only is gender awareness a difficult topic to cover in other courses, often due to lack of knowledge of confidence, when researchers and teachers push to make these courses that focus on gender within the educational setting a reality, efforts are often negated due to financial restraints or pushback from others, whether they be students, teachers, politicians or even colleagues.

Lastly, although gender awareness in teacher education has not yet been institutionalized in the Finnish teacher education programs, there should be implicit beliefs, attitudes and intentions around gender issues present in teachings in the other courses. As the exploration of gender in education has brought forward, teachers are shown to have perceptions and beliefs on differences between genders, which is evidently also the case in higher education. Additionally, students pick up on perceived differences in treatment from their teachers

between different genders (Younger and Warrington, 1996, as cited in Beaman et al., 2006). Furthermore, as Brunila & Kallioniemi (2018) pointed out, challenging heteronormativity in the teacher education programs has shown to be difficult to promote. These implicit beliefs, and even teachings, of teachers can be difficult to map objectively, though students can be asked about perceived differences they have experienced or noticed.

3 Methodology

3.1 Introduction

Selecting and developing the correct methodology to utilise in the research on gender awareness in student teachers has proven to be a challenging process. In the next sections, the road to the collection of the data will be recounted.

Firstly, the background information leading up to the selection of the methodology and resources will be presented after the research questions are outlined. Following the background information, initial focus will be given to the survey creation. Creating the survey started with collecting suitable resources to utilize as a guide in the process. Afterwards, the development of the survey in question is reported thoroughly, with each step documented. Consequently, the methodology proceeds to the documentation of the interview methodology and creation. Finally, necessary information, in regards to the participants connected to this research, is defined, starting with the selection criteria, selection process and, lastly, this methodology section concludes with the participants' characteristics.

3.2 Method analysis

The process of scouring databases in order to search, review and select suitable sources that may be used as the methodology in this research, was considerably more difficult than expected.

Firstly, the majority of the articles pertained to gender in education rather than gender awareness in education. These studies mostly used a variety of methods, such as case studies with observations (Merrett & Wheldall, 1992) or case studies employing the method of analysing reflection papers (Du Pre, 1997), and questionnaires focusing on teachers' perceptions on differences between genders (Martinot & Désert, 2007; Mullola et al., 2012). Other studies focused more on gender stereotyping in education (Chikunda, 2010; Jones & Myhill, 2004). Furthermore, it remains unclear if these studies researching gender in education actually research gender instead of sex, since most of these study measure differences regarding the dichotomous categorisations of male and female. Instead of classifying this group of studies as research into gender in education, it would be more prudent to recognise them as studying the perceived or interpreted gender of students by the teachers. The second group of articles was focused on reviewing gender in education through

policy and research reviews (Halai, 2011; Howe, 1997; Kollmayer et al., 2018; Lahelma, 2014)

Secondly, research on gender awareness in teacher education was even more sparse. The majority of research on gender awareness focused on specific programs within teacher training (Kollmayer et al., 2020; Mooney Simmie & Lang, 2018), general situations regarding equality in education such as policies or curriculum (Brunila & Kallioniemi, 2018; Lahelma, 2011, 2014; Lahelma & Tainio, 2019; Robinson & Ferfolja, 2008; Younger & Warrington, 2008), addressing gender roles and expectations of genders (Sikes, 1991), and, finally, one article analysed the effects of gender-sensitive education on a group of students within the teacher education (Krišová, 2020). The authors of this last article did focus on the students in this situation by conducting interviews after the course had finished, however, even though the students reported changes in thinking, no questions were asked regarding the effect this course may have on them as teachers in the classroom. Nevertheless, this article regarded these pre-service teachers as students in general and did not elaborate on changes in thinking or behavioural changes that may occur in the classroom setting from a teacher's perspective.

Generally, although the articles discovered were suitable in the scope of this thesis, remarkably few actually focused on the student teachers as the future generation of teachers. Moreover, these researchers did not explore the full scope of potential that can be found when focusing on gender awareness in student teachers. As mentioned previously, addressing gender awareness in student teachers not only reaches the individuals involved in these courses or studies but also has the potential of reaching a wider audience when taking into account the number of students these student teachers themselves will influence in their teaching.

Reviewing the methods adopted by the researchers, most were unfortunately not attainable for this thesis. Observing student teachers in classrooms would be particularly hard since, firstly, the participant pool would be limited due to my insufficient knowledge of the Finnish language. This would have meant that only the English classes taught by the student teachers could have been observed, though this thought was entertained. However, due to the situation of the last few years, gaining access to physical classrooms was deemed too precarious to rely on solely. Furthermore, observing differences in treatments or perceptions by teachers relies on the teachers' interpretation of the gender of the students, rather than the actual, identified, expressed gender of the students. This makes the observation of differences in treatment

between different genders impossible, as only the observation of differences in treatment between different interpreted or perceived genders by teachers can be studied. When researchers observe differences in treatment (see Beaman et al., 2006), they observe the differences of interpreted genders or even differences between different sexes. Therefore, in the context of not only this study, but other studies researching differences in treatment according to gender, using the research method of observations is too limited and gives an inaccurate representation. Another research method, interviews, was deemed interesting to consider though more of a general and quantitative method of collecting data was desired initially. Finally, the choice fell to using questionnaires as a research method. Inspecting the research conducted unfortunately yielded no questionnaires that could be adapted for this research group, nor the answer required for the posed research questions. The decision was therefore made to develop a questionnaire that could measure gender awareness in Finnish student teachers.

This ultimate decision, to develop a new questionnaire, inadvertently lead to a change in the initial research plan. Rather than conducting quantitative research, the study was transformed into a pilot study with a limited participant pool due to this being the first trial of the newly developed questionnaire.

3.3   Research questions

Based on the literature review described in the theoretical background, as well as an examination of the research methods, the following research questions were devised:

- Does the questionnaire developed in this thesis measure gender awareness in student teachers?

- In what manner are differences and beliefs around gender notions brought up in the teacher education?

- What are explicit beliefs of Finnish student teachers around differences between genders, in students and in teachers?

- In what manner do Finnish student teachers report to (intend to) act in a gender sensitive way, in educational situations?

3.4 Methodology

3.4.1 Survey creation

3.4.1.1 Literature review

Although the decision was made to develop a new questionnaire to measure gender awareness, previously created questionnaires, although not directly useable, did provide an enormous source of inspiration and certain questions could even be adapted to fit into the new questionnaire.

Firstly, Lahelma and Tainio (2019) examined the changes teacher education has experienced during and after TASUKO (translated from Finnish to English as Gender Awareness in Teacher Education, Lahelma and Tainio (2019), p.2). In order to analyse these changes, an equality questionnaire developed by Knuutila (2012) was utilized. The aforementioned questionnaire was not available in the accessible databases searched, therefore, this questionnaire was obtained by contacting both professor Emeritus Lahelma and professor Tainio. Though the questions posed in the questionnaire by Knuutila (2012) were not directly adapted to the final questionnaire, insight was given into the manner as to how one should pose questions related to gender and equality.

A second source for the development of the questionnaire was the research done by Chikunda (2010) on the level of gender awareness of science teachers in Zimbabwe. This questionnaire intended to check the following: (1) Sexist bias in resources, content and language. (2) Content, teaching methods and classroom dynamics that encompass girls' background and learning styles. (3) Keeping parents informed about the importance of science to girls. (4) Informing learners about women role models. (5) De-emphasizing sex-role stereotyping that hinder girls' progress in science (Chikunda, 2010, p.115).
Several questions were directly adapted to fit in the new questionnaire, especially regarding reported behaviour by the teachers such as "Check resources (books, handouts etc) for sexist bias." And "Check the use of the language itself for sexist bias and use a balance of examples of masculine and feminine nature." (Chikunda, 2010, p.116). Other questions, f.e. "Revise subject content to take account of the range of girls' experiences and interest.", were excluded in the context of this questionnaire. This last question gives an excellent example of one of the reasons why studying gender awareness is so precarious, questionnaires need to be careful

with the formulations of phrases since this last example presumes that there is a general range of girls' experiences and interests that is inherently different from boys. Nevertheless, most questions posed by Chikunda (2010) proved suitable for adaptation into this thesis questionnaire on gender awareness in Finnish student teachers.

Verdonck et al. (2008) constructed the Nijmegen Gender Awareness in Medicine Scale (N-GAMS) which contained subscales concerning gender sensitivity, gender stereotypes towards patients and gender stereotypes towards doctors (Verdonck et al., 2008, p.229). This questionnaire was designed specifically for people in Medicine, therefore all questions had to, at least, be adapted to fit the education system, or proved too specific to adapt in the first place. However, the different subscales can be found within the final questionnaire, although worded differently concerning the education system. From the gender sensitivity subscale within this gender awareness scale of Verdonck et al. (2008), most questions proved too distinctly designed for the Medicine field and subsequently, not suitable for adaptation. Next, questions regarded the Gender role ideology towards patients was modified into the subscale Gender stereotyping, with questions regarding the patients changed to questions involving students in the classroom. This subscale measured stereotypes doctors may hold towards patients of different genders, consequently, the stereotypes needed to be transformed into those teachers may hold towards students of different genders. The final subscale, gender role ideology towards doctors, influenced the subscale surrounding stereotypes in teachers of different genders though no specific questions by themselves were withheld.

The last influence in the creation of the new questionnaire came from Gray and Leith (2004), who designed a survey measuring teachers' opinions and attitudes on teacher training, gender equality in the classroom and occupational stereotyping in the classroom. Gray and Leith defined these categories as the following: Questions in the Teacher Training subscale covered the extent to which gender (issues) were addressed in the teacher training or during specific courses. Gender equality in the classroom addressed teachers' perceptions on differences in children in regards to gender, such as behaviour or attitude. Finally, occupational stereotyping in the classroom covered just that, stereotypes in regards to (future) occupations, teachers' response to these stereotypes and the role of the National Curriculum (of Northern Ireland) in challenging this kind of stereotyping. The questionnaire developed by Gray and Leith (2004) stayed fairly on the surface rather than exploring these issues in dept, that role was more reserved for follow-up interviews, which made this questionnaire unsuitable to adopt. The

intentions of this research, as well as the general view of the survey, was kept and applied to the developed questionnaire.

3.4.1.2 Survey creation

Creating the questionnaire measuring gender awareness in student teachers naturally happened in different phases, with a continuous loop of reflection and feedback. In this section, each phase conducted after the literature review will be described and changes made will be further clarified.

Firstly, the different subscales needed to be decided on. From the beginning, it was clear that a section was required on possible stereotypes teachers in training may hold. Most of the articles used to develop this questionnaire tried to analyse and measure personal stereotypes the participants may have, from gender stereotypes regarding science (Chikunda, 2010) to occupational stereotypes in the classroom (Gray & Leith, 2004) and stereotypes within the medical field (Verdonk et al., 2008). However, further than the inclusion of a subscale in the form of stereotypes, the nature of the stereotypes needed to be gathered from other sources rather than those mentioned above.

Another subscale quickly included was "gender awareness in teacher education", Lahelma (2011; 2019) disclosed the need for gender awareness in teacher education, as well as the notion that gender awareness still was not covered sufficiently in Finnish teacher education. After Lahelma (2011) described the lack of progress between 1988 and 2008 on the topic of gender awareness in teacher education in Finland, the measurement of potential differences ten years later felt necessary to include.

A third subscale was subsequently uncovered after making the decision to include stereotypes towards students based on gender, namely stereotypes towards teachers. This inclusion is based on the distinction made by Verdonck et al. (2008) between stereotypes doctors may have towards the gender of patients and stereotypes doctors may have towards the gender of other doctors. It felt necessary to include this distinction since teachers are not always aware of stereotypes they may hold, though often try to stay neutral in the classroom. However, it is unclear what stereotypes teachers may hold towards others in their profession, or what they perceive as stereotypes others in society may have concerning the gender of teachers.

The last subscale, included during the first phase, concerned potential actions or intentional behaviours of teachers regarding gender sensitivity. Based on gender sensitivity actions described in the questionnaire by Chikunda (2010), this subscale covered behaviour or the intention of this behaviour in regards to committing to gender sensitivity in the classroom space. Acting in a gender-sensitive manner requires the teacher to have a clear idea of gender awareness, and the intention to act on this knowledge.

After the different subscales were identified, questionnaire development moved to the second phase wherein the questions themselves were established. As mentioned previously, the creation of questions included in the questionnaire transpired in a continuous loop of development, feedback and refinement. Therefore, it is important to note that the questions created during this phase ultimately were not the final interpretation.

As was established during the first phase, the subscale 'gender stereotyping' covered stereotypes towards students of different genders in an educational setting. Although a number of different studies (Chikunda, 2010; Gray & Leith, 2004; Verdonk et al., 2008) were used to design this subscale, none of these provided usable questions for this study's questionnaire in particular. Therefore, other sources were necessary to identify stereotypes teachers may hold towards students. One such source was a study produced by Jones and Myhill (2004) on *'Troublesome boys' and 'Compliant girls' Gender identity and perceptions of achievement and underachievement.* The authors of this study interviewed teachers in order to explore the teachers' perspectives on gender and achievement. Furthermore, the authors compiled a list with teachers' comments about the achievement and behaviour of boys and girls, this list was an enormous inspiration for the questions in this subscale. The comments ranged from girls' achievements (f.e. 'Girls are neat') and boys' achievements (f.e. Boys are better at mathematics) to girls' behaviour (f.e. Girls have a stronger work ethic) and boys' behaviour (f.e. Boys cannot sit still) (Jones & Myhill, 2004, p.554-555). A second source utilized in the subscale on gender stereotyping came from Lahelma's (2014) article on *Troubling discourses on gender and education*. Though this article does not deal directly with gender stereotyping, it does discuss the 'boy discourse'. More specifically, this article addresses some stereotypes and ideas at the basis of this discourse such as the suggestion that schools and teaching methods are not suitable for boys, or the frequently mentioned idea that boys, in particular, find it difficult to concentrate and sit still (p.176). The *boy discourse* has been a widespread idea that is exacerbated by the media every time the new PISA results come out. Therefore, it seemed prudent to gauge whether the *boy discourse* and its ideas may

be shared by future teachers as well. Lastly, the questions on this subscale were preceded by the phrase 'I believe that…'

The second subscale covered questions on the subject of 'gender awareness in teacher education which was partially based on the research conducted by Lahelma (2011;2019). However, most of these questions came from opening up the research question 'In what manner are differences and beliefs around gender brought up in the teacher education?' in order to adequately attempt to measure this, and combining the teacher education with the other subscales of this questionnaire. Therefore, some questions asked 'I feel that there has been paid enough attention to gender stereotyping in my teacher education.' or 'I have been taught sufficient ways to spot gender stereotyping in resources or other media.' Secondly, Lahelma (2011) brought up that it was possible at the time of the research to graduate as a teacher without having heard of the requirements of the Act on Equality between Women and Men (1986/2005) or learning what these requirements mean in the practices and processes of schools (p.266), which was reiterated at the time of the TASUKO project covered by Lahelma (2019). Therefore, one question of this subscale addressed this issue as well, namely 'During my teacher training studies there has been enough attention paid to the requirements of the Act on Equality between Women and Men (1986/2005).' Another set of questions aimed to ask the participants about the gender courses and the opportunities to partake in these through 'In my teacher training courses I think I have studied enough gender research' and 'In my teacher training studies I have had enough opportunities to take gender courses.' Lastly, the students' perspective on the general approach to the teachings on gender needed to be determined, more specifically, it was necessary to determine if these teachings were deemed to be taught in gender stereotyping or heteronormative ways. This last question was asked very bluntly, in exactly the manner as it was written in the previous sentence, to confront the participants and force them to reflect on the teachings in their courses and decide for themselves what their opinions on the teachings could be. During the second phase of development, this subscale was originally designed to be answered through a yes/no scale, however, during the feedback loop after each phase, it was determined to use the same scale as the rest of the questionnaire and to allow the participants to answer on a Likert-type scale (1-5). Additionally, this was also deemed necessary to ensure black-and-white thinking was partially eliminated during the answering of the questionnaire.

The next subscale further developed encompassed questions on the subject of teacher stereotyping. As mentioned in the previous phase, this subscale was mainly influenced by

Verdonk et al. (2008) and their questionnaire on *medical students' gender awareness*. The subscale of this questionnaire was divided into two sections, one covered perceptions the participants may have on teachers based on their gender, the second section addressed perceptions documented by Lahelma (2011;2019). Perceptions these student teachers may have about other teachers were asked based on perceptions noticed by the author during their teacher education (in Belgium), as well as general stereotypes regarding men and women in particular, regarding both personality or attitude and the field of teaching. For example: 'I believe that male teachers carry more authority and respect.' and 'I believe that women are better early childhood educators, kindergarten teachers and primary school teachers.' The second section in this subscale covered worries of both student teachers and teachers noted by Lahelma (2011;2019), such as 'I believe that it is worrisome that there are more female than male teachers.' or 'I feel that male students are treated more favourably than other students in the teacher education studies.'

The final subscale explored during the second phase concerned 'gender sensitivity' or, as described previously, concerned potential actions or intentional behaviours of teachers regarding gender sensitivity, which was based on Chikunda (2010). These questions were divided into four subsections, described as attitude (I find important), act before class (I check), act in class (I address) and way of acting (e.g. combat: male for female occupations & vice versa). Questions regarding the attitude of teachers on gender sensitivity were, for example, 'I find it important to check resources (books, handouts, etc) for gender biases or stereotyping'. The second subsection, act before class, covered questions such as 'I check the language of textbooks (or handouts) to ensure there is no gender stereotyping or bias.' Thirdly, questions addressing acts in class (I address) included 'I address gender stereotyping in resources/media with the children.' Finally, the subsection covering the way of acting was surveyed with questions such as 'When inviting people to present at school, I will invite people in typically gender non-conforming (or non-stereotypical) fields of work, such as male nurses.'

The final action realized during the second phase decided on the type of scale to utilise in this questionnaire. Firstly, all questions were designed with (dis)agreement in mind, therefore, a level of agreement scale (Vagias & Wade, 2006) was deemed most suitable. A second decision quickly made, was the use of a 5-point scale rather than a 7-point scale. A 5-point scale was deemed preferable over the 7-point scale since Wakita et al. (2012) argued that the number of options available to participants may bias respondents against answering with the

strongest expressions. Lastly, in the subscale covering 'gender sensitivity' a 6th option was included, namely 'not applicable' for those students not yet having had an opportunity to act on certain occasions due to the lack of internship or similar.

Before proceeding to the next phase of development, feedback was given by both peers and the thesis supervisor. At this time, most questions, especially those regarding stereotypes, were still very gendered in a dichotomic way. Due to this feedback, questions were altered to be more gender-neutral and to lose the idea of gender being only two folded. For example: 'Girls work harder in school than boys.' Was changed into 'Girls work harder in school than other genders.' Moreover, sentences of some questions were changed to have clearer language with less hesitancy possible during answering. Furthermore, advice was given to add a section on transgender and gender non-conforming students. Lastly, at this time, a discussion was held on the necessity of inquiring about background information. Since the target group of participants was already decided, see participant section further below, the only necessary question regarding background ended up being gender. Age was deemed irrelevant for this study since the participant group was decided on based on seniority in the teacher training course, 3rd year or above. Gender was kept as a background inquiry since, depending on the gender, students may have been aware of or experienced different stereotypes differently.

In the third phase of development, the feedback given was utilized to ameliorate the questionnaire. As mentioned above, questions were adapted to disavow a strict dichotomy in gender as was often the case in the questionnaires used to create this new questionnaire. Furthermore, upon closer inspection, 3 main themes were detected. Each question in the questionnaire, except the subscale on 'gender awareness in teacher education', was composed of a combination of these 3 themes. The 3 themes identified were the following: 'Self vs. other', 'student vs. teacher' and 'behaviour vs. believes'. For example, the question 'I believe that girls work harder in school than others.' contains the themes 'self' (I believe), 'student' (girls) and 'behaviour' (work harder in school than others). Another example can be taken from the question 'I check the language of textbooks (or handouts) to ensure there is no gender stereotyping or bias.', wherein the themes 'self' (I check), 'teacher' (teacher resource awareness: to ensure there is no gender stereotyping or bias), and 'behaviour' (check the language of textbooks or handouts) can be detected. Lastly, this phase included the creation of a new subscale on 'gender non-conformity'. This subscale covered a variety of questions, ranging from 'I have been taught' to 'I believe' and 'I try'. Inspiration for this subscale came mainly from two hard-sought sources, none of which are Finnish, which demonstrates the

lack of sources dedicated to transgender and gender non-conformity from a (student) teachers' perspective. The first article by Robinson & Ferfolja (2008) is concerned with Queering the teacher education, or the inclusion of anti-homophobia and anti-heterosexist education in schools. Secondly, the article by Mangin (2018) focuses on transgender students in (American) schools. Issues and topics raised in this last article were particularly useful to include in the final subscale. One such topic, elaborated on in this article, included the social transition of transgender students, which is deemed especially important since failure to recognise and respect a transgender person's identity may increase feelings of gender dysphoria and lead to the increase of mental health issues (Mangin, 2018, p.17). Therefore, a question in this subscale was formulated as 'I would be willing to assist with the social transitioning of transgender children at school.' A second question, related to this topic, was 'I believe that children should be addressed by the pronouns and name they want to be addressed by, even if it is different than it is on paper.' Moreover, this subscale covered questions on teacher education ('I have been taught how to support transgender children in my classes.') and on feelings regarding transgender teachers ('I think that there is no difference between working with a transgender or a cisgender teacher.').

Finally, the last phase of the development of the new questionnaire on gender awareness in student teachers consisted of fine-tuning the created questions, based on feedback given by peers and the thesis supervisor, for a final time. During this phase, the questionnaire was created using Webropol and tested out by peers to ensure ease of use. Furthermore, a privacy notice on data use was developed and added as a link on the first page of the questionnaire. To ensure consent was given, participants were only able to move to the questions after clicking 'I consent to use of data, as mentioned in the privacy notice, for the purpose of this study'.

3.4.1.3 Interview methodology

The last aspect of the created questionnaire consisted of the question to leave their e-mail addresses in a text box if they wished to participate in the interview. This e-mail address was completely separated from the survey itself and could not be connected to answers on the questionnaire.
Participants who, voluntarily, provided their e-mail address for the interview portion of the study, would be sent an invitation with further information on the study, procedures and a privacy notice. Interviews could be held in the manner that was most suitable for them,

whether online through Zoom, e-mail or in person. Each interview would be recorded with the participants' explicit permission and transcribed afterwards. The recordings would be deleted after the transcription was completed and the transcription of the interview would be sent to the respective participants to read through and approve. In order to use direct quotes from the transcription, permission was asked before quotes would be added to this thesis.

The interview was devised as semi-structured with two main categories, firstly we would go over the questionnaire and then we would go more into dept, especially driving attention to gender in teacher education and personal experiences. Questions on the questionnaire were accompanied by a visual aid of the questionnaire they filled in previously, to help participants remember feelings and thoughts while filling out. In this section of the interview, it was particularly important to extract genuine thoughts on the questionnaire, through questions such as 'Were there questions that you could not really answer? Why?' and 'What made you interested in answering the questionnaire? What would make some people hesitate to answer, in your opinion?' Secondly, after going through the questionnaire section of the interview, questions were asked regarding the teacher's education and personal experiences regarding gender, such as 'Have you been shown ways to spot gender stereotypes or biases in your classes? How? When?' and 'Are there stereotypes regarding teachers that you have noticed during the years you have been studying?'

During the interviews, it remained important to hear the participants' stories and let them share thoughts, feelings and experiences. Though these questions were all prepared beforehand, if the participants focussed attention on a specific aspect within gender in education, they would not be discouraged to discuss that aspect rather than other aspects of the prepared questions during the interview. Even though the questions in the interview did not come from a particular source, they were developed together with the questionnaire when encountering topics in need of more attention than was possible in a questionnaire. Topics that may require a deeper exploration were the subscales covering questions on gender in teacher education and gender stereotypes towards both students and teachers. Lastly, one article did play an essential role in the development process of the interview phase in this study. Karabenick et al. (2007) proposed the use of cognitive pretesting to ensure that questions in a self-report survey can be read by participants as the researchers during development meant them to be read, in essence: do the participants think what we mean them to think when reading the questions? Though this method of analysis was more suitable for research involving a pre- and post-test questionnaire, it did influence the decision to ask the

participants more about their thoughts when filling in the survey as well as past experiences connected to questions on the questionnaire.

3.4.2 Participants

3.4.2.1 Participants' selection requirements

Firstly, the decision was made that participants should be at least 3rd-year bachelor or above, entirely because certain questions on the questionnaire pertaining to what has been taught and what they had already experienced in the teacher training school and at the university level. Therefore students needed to have a certain level of seniority and experience in the teacher training program.

Furthermore, students needed to be part of the Finnish language teacher training program, mainly because of the previous requirement. The current English-language program only has existed for two years, therefore it only has students in the first and second years of the Bachelor's degree.

3.4.2.2 Participants' selection

In order to reach participants, contact was made with a number of professors that, after research in the university's schedule system, seemed to teach this target group. There were 3 groups of responses to the request of sharing the survey with their students. The first group of professors responded with the regret that they did not have students in that target group at the time of contact, the second group of teachers simply did not respond to inquiries, and lastly, a small group of professors were willing to forward the survey to their students. In some cases, students were even permitted to fill in the survey during class time. However, even though in one case the students were presented with the research and survey personally during class, the response was atrociously low. One professor, who taught a course that touched upon this subject, proposed a change of direction. This professor wished to collaborate and suggested that the students of their course fill out the survey on two separate occasions, before the start of the course (pre-test) and after the course (post-test). The pre-test of this group could then be compared to the already filled in survey by the group of students contacted previously through other professors. This seemed interesting since the group of students filling in the pre-test would potentially have preconceived ideas that the other group of students would not have

since the pre-test group had chosen to study this subject. Although the idea was particularly exciting and scientifically interesting, unfortunately, the students of that class were largely unwilling to participate. 1 student only sent back a signed consent form, even though 3 students filled in the survey in the end, which meant that this route would remain unavailable for this thesis research. Possible barriers were discussed and will be further explored in the discussion section. Ultimately this did lead to an added question in the interview portion, where participants were asked what made them interested in answering and what they perceived to be barriers to participating in the questionnaire.

3.4.2.3 Participants

Ultimately, the questionnaire was filled out by 19 participants, 68,4% (N=13) identified as female and 31,6% (N=6) identified as female, none identified as other and none preferred not to disclose their gender.

The interview was conducted with 3 individuals, two identified as male whereas the other identified as female. Two of the participants were 5th year students of the teacher training program at the University of Turku and one was a 4th year student. The fourth year student was the only one to take the offered optional course in gender in education offered to students in the (teacher) education department at the University of Turku.

4   Quantitative results

Firstly, most of the subscales for this survey were designed according to a 5-point Likert scale, from 'strongly disagree' to 'strongly agree'. Two of the subscales were designed along a different scale, namely, a 6-point Likert scale with the sixth option representing the answer 'not applicable'. Therefore, when starting the calculations in SPSS, attention had to be paid to these two subscales in order to transform them to 5-point Likert scale subscales to be able to compare them with the other subscales.

In regards to the subscale '(student)teachers', this appeared to not have been necessary since no participants answered with 'not applicable'. Therefore, this subscale was transformed into a 5-point Likert scale to compute with the other data. In the other 6-point subscale, 'gender sensitivity', the 'not applicable' answer had been answered by 4 participants for various questions. In this case, the data was also transformed to a 5-point Likert scale, however, the 'not applicable' answer was treated as missing data since this answer could not automatically, or without further analysis, be coded as a different answer. Consequently, a decision had to be made on how to treat the missing data. This exploration started by calculating Cronbach's alpha to ensure all questions should be taken into consideration for further decisions, Cronbach's alpha for the 'gender sensitivity' subscale with N=15 was calculated to be .93, therefore, the reliability was very good. Secondly, an attempt was made to use multiple imputation to find plausible scores for the missing data, however, the imputed data through this method did not fit in with the possible scores on these questions. One reason for this could be the limited data since the number of participants is too low to make clear conclusions. Nevertheless, another method had to be found. The method finally used was simply imputing data based on a combination of means of the question and means of the answers of the participant in this section and on all questions. Through this method, scores for 3 out of 4 participants could reliably be imputed since only 1 to 3 questions were missing data. The last participant however, answered 5 questions as 'not applicable'. Luckily, this participant answered questions quite often with 'strongly disagree' or 'strongly agree', which made the process of imputing data somewhat simpler. Therefore, combined with the only missing data accounting for 5 out 64 questions, the decision of imputing the data manually remained in place. After imputing the data, Cronbach's alpha was calculated once more and remained very good at .91 for N=19.

The second step in the process of collecting the data from the survey came through reliability checks of the whole survey and the individual subscales. The initial reliability check of the whole survey came back as acceptable though quite low (Cronbach's alpha = .71) which was corroborated through the reliability checks of the individual subscales. It was revealed that some subscales presented as quite reliable, whereas other were not reliable at all. Two subscales were comprised of questions that were not reliable within these subscales, namely '(student)teachers' and 'Gender non-conformity'. This was not entirely surprising since questions within these subscales could fit in other subscales as well. As a consequence, two questions needed to be answered, which categories could be made for these questions and which questions would fit into these categories.

As a result of these realisations, a principal component analysis (PCA) was conducted to catch questions that did not fit within the categories and to draw an analysis of the questions themselves as well. The combination of the principal component analysis (PCA) and the corrected item-total correlations presented through the reliability analysis revealed certain conclusions. Firstly, through analysing the 'reliable' subscales, a few questions were revealed that did not fit within these subscales and, when checked with results of the PCA, these questions could be removed from the subscale. The first subscale, 'gender stereotypes', was reduced from 24 questions to 18 questions which increased the reliability of Cohen's alpha to .94. Within the subscale 'gender sensitivity', no questions were discerned as truly unfitting to the subscale. Moreover, in the third subscale 'teacher education', only 1 question did not present suitable to include in the subscale and was thus removed, this action increased the reliability of Cohen's alpha to a score of .91. However, analysing the two other subscales proved to be more challenging. Firstly, an easy decision was made in regards to three questions within the subscale 'gender non-conformity' since these questions were phrased as *"I was taught…"*. Therefore, an easy fit with the subscale 'teacher education' was deduced and confirmed since the reliability of Cohen's alpha of this subscale, with the inclusion of these three questions, remained at .90.

Remaining with the subscale 'gender non-conformity', two more questions appeared to fit with another subscale, more specifically, the subscale 'gender sensitivity', through analysing the rotated component matrix resulting from the PCA. The reliability of the subscale 'gender sensitivity', now including the two questions transferred from 'gender non-conformity', remained high with Cronbach's alpha being calculated at .92. The other questions remaining within the subscale 'gender non-conformity' did not immediately appear to fit into another

subscale, therefore, attention will first be shifted to the other troublesome subscale '(student)teachers'.

At first glance, in the rotated component matrix resulting from the principal component matrix, there did not appear to be a clear pattern to the questions within this subscale. However, upon closer inspection, certain questions did appear to suit another subscale, namely the 'gender stereotypes' subscale. To specify, 8 out of 12 questions in the '(student)teachers' subscale were deemed immediately transferable to the subscale 'gender stereotypes'. Additionally, 1 more question could be deemed to fit this new subscale, however, the PCA showed a strong negative bond with the other questions in that subscale. Therefore, the decision was made, upon further inspection of the question itself, that this question would be reverse coded. Upon these actions, the reliability of Cohen's alpha within this greater subscale with 27 questions was calculated to be .93. The other questions remaining in the subscale '(student)teachers' did not appear to suit transfer to another subscale and, furthermore, reliability within these remaining questions was very low as was the reliability of these questions with the other questions within the survey.

Lastly, attention was brought back to the subscale 'gender non-conformity' where three remaining questions showed a strong negative bond with other questions in the 'gender stereotypes' subscale. When regarding the phrasing of these questions, the phrasing would also suggest a reverse code in context of the subscale 'gender stereotypes'. These questions were then reverse coded as well and checked within the subscale 'gender stereotypes' through reliability. However, one of these three questions eventually did not fit as well within the subscale. Therefore, only two more questions from the previous 'gender non-conformity' subscale could reliably fit into the subscale 'gender stereotypes', resulting in Cronbach's alpha = .93 with 29 questions.

In conclusion, the remaining questions did not fit into any other category and when comparing reliability, reduced the reliability of the whole survey as well. In the end, 52 questions and 3 reliable subscales remained with a combined reliability of Cohen's alpha .80, which is acceptable.

Furthermore, since 3 reliable subscales were created, data compiled in these subscales could be reduced to reveal general mean of scores within these subscales (Table 3). Further explorations will be pursued in the next section of the thesis.

	Gender stereotypes	Gender sensitivity	Teacher education
Mean	2,83	3,57	2,23
Std. Deviation	0,52	0,80	0,69

Table 3: calculated means of the subscales gender stereotypes, gender sensitivity and teacher education.

Lastly, correlations between these subscales were almost non-existent and not significant either (Table 4). The low correlations between these subscales indicate a discrepancy between these aspects of gender awareness and illustrate the complex nature of attempting to measure gender awareness. Furthermore, the self-report nature of the survey may also influence the answers to questions and thus the correlation between different subscales. Although the subscales showcase practically no correlations between them, there are correlations that can be discovered between individual questions, especially, as expected, between questions within the same subscale rather than questions belonging to two different subscales. To illustrate, within the subscale 'gender stereotypes', strong correlations were generally found between questions regarding abilities or talents of students of different genders and abilities of teachers of different genders, such as 'I believe boys are more often talented in school subjects than other genders' which shows a strong correlation with 'I believe male teachers are better at teaching sciences, such as math, physics and chemistry.' Indicating that the belief in stereotypes regarding students carries over towards teachers as well. The presence of strong and significant correlations within the subscales are supported by the high reliability levels of the individual subscales, whereas the low general reliability of the whole survey is supported by the low amount of significant correlations between questions belonging to different subscales.

	Gender stereotypes	Gender sensitivity	Teacher education
Gender stereotypes	1,00	-0,22	-0,06
Gender sensitivity	-0,22	1,00	-0,26
Teacher education	-0,06	-0,26	1,00

Table 4: calculated correlations between the subscales gender stereotypes, gender sensitivity and teacher education.

5 Analysis

5.1 Analysis of quantitative data

Firstly, a further exploration into the three subscales is needed. Each of the subscales are very reliable in regards to the data within these subscales (Cronbach's alpha for each subscale, as discussed previously: .90, .92 and .93), however, reliability of these three subscales with each other is significantly lower (Cronbach's alpha = .80). This lower reliability of the whole survey does indicate that the three subscales are separate entities that do not automatically fit together and, furthermore, is a confirmation of the low correlations measured between the subscales (Table 4). One explanation could be that the number of participants is quite low so reliability is never guaranteed, however, that would not truly explain the high reliability of the individual subscales. A much more likely explanation, however, can be attributed to the fact that these three subscales each measure a different aspect or attribute to gender awareness. The first subscale, gender stereotypes, measures stereotypes (student)teachers may report to have towards others, whether they be students or other teachers. Next, the subscale 'gender sensitivity' measures how (student)teachers perceive to (intend to) act in a classroom setting to combat gender biases or stereotypes. Lastly, the subscale 'teacher education' measures what the (student) teachers perceive to have been taught in their teacher education programmes. Although, as mentioned in earlier sections, these aspects do overlap and can indicate gender awareness, they do not necessarily completely correlate with each other (at least in this case, see Table 4). As the subscales themselves present almost no correlations between them, added to the low reliability of the whole survey, it may be much more meaningful to investigate the data in each subscale rather than regarding the data as one scale.

5.1.1 Gender stereotypes

The first subscale to be discussed is 'gender stereotypes', as presented in Table 3, the mean of this subscale is 2,83 on a maximum score of 5. For this subscale, a high score indicates a high level of gender stereotypes, in this case, the mean score indicates lower levels of gender stereotypes for all participants in this study. Additionally, the individual means of each question in this subscale does indicate interesting differences (see Table 5). Differences in means between the general mean and the mean of the individual questions are indicated as differing according the standard deviation of this subscale, which is 0,5 (Table 3). When the mean is above 3.30, the question will be circled in green, when the mean drops below 2.30,

the question will be circled in red. Three questions were reversed when measuring the means and reliabilities within the subscale and in Table 4 they are presented as thus.

Question	Minimum	Maximum	Mean	Standard deviation
Girls work harder in school than other genders.	2,00	4,00	3,00	0,88
Boys are more often talented in school subjects than other genders.	1,00	4,00	(2,26)	0,73
Boys are harder to handle in the classroom.	2,00	5,00	3,16	1.03
Girls pay more attention in the classroom.	1,00	5,00	2,84	1,07
Boys find it more difficult to sit still in the classroom.	2,00	5,00	3,21	0,98
Boys are more likely to be better in science and mathematics.	1,00	4,00	2,47	0,90
Girls are more likely to be better in languages and craft.	1,00	4,00	2,53	0,96
Differences between different genders are greater than differences within one gender.	1,00	4,00	(2,16)	0,96
Boys are more easily distracted than other genders during class activities.	1,00	5,00	2,74	1,10
Boys are more likely to be interested in science, physical education and maths.	2,00	4,00	2,90	0,88
Boys have more energy they need to release than other genders in school.	1,00	5,00	3,11	1,05
Boys have it harder in school than other genders.	1,00	4,00	2,63	0,90
Girls follow the rules set by the teacher better than other genders.	2,00	5,00	3,00	1,00
Boys are better at working with their hands than other genders.	1,00	5,00	2,53	0,96
Boys learn better by doing, more than other genders.	1,00	4,00	2,58	0,77
Boys have less patience than other genders during classroom activities.	1,00	4,00	2,63	0,90
Boys need to be actively encouraged to do their schoolwork more often than other genders in the classroom.	1,00	4,00	2,90	0,88
Girls work more precisely in the classroom than other genders.	2,00	5,00	3,21	0.92
I do not believe there are many differences between teachers based on gender. **(R)**	1,00	5,00	2,68	1,00
I believe that male teachers are more technical, efficient and objective.	1,00	4,00	(2,21)	0,71

I believe that female teachers are more nurturing, empathic and caring.	1,00	5,00	3,05	1,03
I believe that male teachers carry more authority and respect.	2,00	5,00	3,58	0,96
I believe that women are better early childhood educators, kindergarten teachers and primary school teachers.	1,00	5,00	2,53	1,17
I believe that male teachers are better at teaching sciences such as math, physics and chemistry.	1,00	5,00	2,16	1,01
I feel that male teachers have it easier to find jobs than other genders.	2,00	5,00	3,84	0,90
I feel that male teachers are more appreciated in schools than other genders.	2,00	5,00	3,42	1,02
I feel that male teachers are more respected by others, such as parents.	1,00	5,00	3,21	1,03
I believe that children should be addressed by the pronouns and name they want to be addressed by, even if it is different than it is on paper **(R)**	1,00	3,00	1,79	0,63
I think that there is no difference between working with a transgender or a cisgender teacher. **(R)**	1,00	5,00	2,05	1,13

Table 5: Descriptives of mean in subscale 'gender stereotypes'. **(R)** indicates a question reverse coded

Interestingly, only a few questions recorded a mean score below average (circled red in Table 5). One question pertained to the talented boys, one question asked about differences between genders and two questions regarded male teachers and 'masculine' subjects. Contrastingly, two questions asking the same question in regards to 'masculine subjects' but now in connection to boys, scored higher and closer to the average or even above the average. This may indicate that (student)teachers recognise stereotypes closer to themselves better than stereotypes which, at that point in time, do not directly address or confront their own perceived strengths or potential career-wise. Though this can, obviously, not be confirmed nor is this automatically the true conclusion to make. In the end, it does pose an interesting contrast that may be interesting to investigate further. Additionally, it is important to note that the differences remain small and no direct conclusion can be derived from them consequently. Additionally, the two questions regarding gender non-conformity also recorded a low mean score, however these two questions are reverse coded in the subscale 'gender stereotypes' and therefore answered quite highly in actuality. The first question 'I believe that students should be addressed by the pronouns and name they want to be addressed by, even if it is different

than it is on paper' was never answered with 'strongly disagree' or 'disagree', moreover, 57,9% of participants agreed with this statement and even 31,6% strongly agreed. The next question 'I think there is no difference between working with a transgender or a cisgender teacher' was answered a bit more diversely, however, the greatest percentage of participants (38,9%) answered with 'strongly agree'. These questions showcase the willingness of participants to address students properly and help them in this case through acceptance of their identity, as well as their perception that mostly there is no difference between transgender or cisgender teachers.

Turning to the questions with a score higher than the average mean of all scores (circled in green in Table 5), these mostly represented questions regarding (student)teachers. Namely, 'I believe male teachers carry more authority and respect', 'I feel that male teachers find it easier to find jobs than other teachers' and 'I feel that male teachers are more appreciated in schools than other genders'. All of these questions pertain to perceived treatments and perceptions by others, rather than their own perceptions on gender differences. Furthermore, these questions were answered by participants with 'agree' by, respectively, 57,9%, 52,6% and 47,4% of the participants. These answer showcase that the participating student teachers did perceive a difference in treatment between male and female (student)teachers by others. However, the participants themselves did not perceive many differences between teachers based on gender as the question 'I do not believe there are many differences between teachers based on gender' (scoring just below the cut-off point for the lower scoring question, though this was also a reversed question), was answered by most participants as 'neither agree or disagree' (42,1%) or 'agree' (31,6%). These seemingly contrasting answers to the questions indicate a difference in the worldview of the participants and the worldview they perceive others to have.

In general, although there are questions that score higher than average, the questions scoring high on the subscale concerning gender stereotypes mainly portray perceptions others may have about teachers or perceived differences in treatment of male or female teachers by others. Questions scoring below the average for this subscale addressed the perceived talent of boys, abilities of male teachers and the notion that differences are greater within one gender than between different genders. Although most participants agreed that differences are greater within one gender, other questions regarding abilities and behaviour of different genders in stereotypical ways were not unanimously answered with 'disagree'. This may indicate that, although they know that there are more differences between individuals within one gender,

some stereotypical thinking in regards to gender still persists. Lastly, most participants believed that children should be addressed by their desired pronouns and name, even if it was different on paper. However, this belief does not necessarily or automatically translate to an actual action in the classroom by these student teachers.

Finally, it is intriguing to note the differences between the questions in this subscale. Although the questions address different worldviews, personal worldview versus perceived worldview of others, and differences in behaviour, abilities and beliefs, they exhibit strong internal consistency with each other through the reliability of Cohen's alpha (0.93). This indicates an underlying pattern of beliefs in regards to differences between genders. Furthermore, the highest scoring questions all pertained the perceived worldview of others which suggests that the participants believe others have a higher level of belief in gender stereotypes than they possess themselves, however, whether that is true in regards to this pool of participants remains impossible to assess.

5.1.2 Gender sensitivity

The next subscale, gender sensitivity, measures actions or desired/intended actions of (student)teachers in the classroom environment or during lesson planning. A higher score indicates a higher level of gender sensitivity portrayed by the participants, which is indicated as relatively high with a mean score of 3,57 across all participants and questions in this subscale. As in the previous section, scores differing more than the standard deviation within this subscale are scrutinised, with the standard deviation for the subscale 'gender sensitivity' measuring 0.8. Scores below average (2.8 or lower) will be circled in red and although only scores above 4.3 would qualify, there are no such high means recorded in these questions. This is an interesting development which indicates that the variance regarding the means within this subscale is quite low, which implies that, in general, participants replied to most questions consistently and, thus, similarly perceived these questions with the same perspective. For analyses of this subscale, the two highest scores, above 4.0, will be analysed and will be circled in green (see Table 6: Descriptives of the subscale 'gender sensitivity').

Questions	Minimum	Maximum	Mean	Standard deviation
I try to use gender-neutral language in the classroom	2,00	5,00	3,68	1,01
I would be willing to assist in the social transitioning of transgender children at school	1,00	4,00	3,80	1,29
I address gender stereotyping in resources/media with the children.	1,00	5,00	3,58	1,04
I believe actively acting against gender stereotypes and biases is important as a teacher.	1,00	5,00	4,00	1,00
I think it is important to address gender biases parents may have towards future careers/studies for their child.	2,00	5,00	4,05	0,83
When inviting people to present at school, I intend to invite people in typically gender non-conforming (or non-stereotypical) fields of work, such as male nurses.	1,00	5,00	3,47	0,93
When inviting people to present at school, I intend to ensure equal representation of all genders.	1,00	5,00	3,31	1,34
I draw attention to equal accomplishments from all genders (as in famous figures or contributions to science for example).	1,00	5,00	3,95	1,39
I intentionally select texts/books/media that deal with gender-nonconforming subjects.	1,00	5,00	2,74	1,32
I check the language of textbooks (or handouts) to ensure there is no gender stereotyping or bias.	1,00	5,00	3,42	1,26
I check the language of resources and teachings to ensure a balance of examples of all genders.	1,00	5,00	3,32	1,60
I find it important to check resources (books, handouts, etc) for gender biases or stereotyping	1,00	5,00	3,58	1,60

Table 6: Descriptives of the subscale 'gender sensitivity'

Firstly, only one question scored below the cut-off point indicated with the standard deviation: 'I intentionally select texts/books/media that deal with gender non-conforming subjects', with 15,8% answering with 'strongly disagree' and 21,0% answering with 'disagree'. Furthermore, this was the only intentional action asked in this subscale as the other questions could be responded with an intended action or a believe in the importance of an action. The other questions regarding the checking of resources, rather than the intention of checking, were amongst the lowest scoring means within this subscale as well.

Secondly, there were no questions scoring much higher than the average in accordance to the standard deviation of 0,8 in this subscale. Nevertheless, two questions will be scrutinized as

the highest scoring in this subscale: 'I believe actively acting against gender stereotypes and biases is important as a teacher.' and 'I think it is important to address gender biases parents may have towards future careers/studies for their child.' The first question recorded 31,6% of participants answering with 'strongly agree' and 47,4% with 'agree'. Next, the question regarding addressing gender biases parents may possess, 36,8% of participants responded with 'strongly agree' and 36,8% with 'agree'. These two highest scoring questions both represented a belief in the action or a belief in the importance of the action rather than an action itself. This can lead to the conclusion that, though they believe it is important to act against gender stereotypes or biases, they do not always transfer these believes into actions. This conclusion is partially supported by the lower scoring questions which all portray an action, and the only intentional action within this subscale is also the only question differing more than the standard deviation variance of means in this subscale. The participants in this study mostly reported to believe in the importance of acting in a gender sensitive manner though questions on the action in regards to gender sensitivity itself measured means remarkably lower, indicating a perceived barrier to actually act on their believes. In addition, all of the questions in the subscale 'gender sensitivity', except 'I think it is important to address gender biases parents may have towards future careers/studies for their child', have participants responding with 'strongly disagree'. This shows that, although most participants do intend to act or believe that it is important to act on gender stereotypes or biases, some (student) teachers do not perceive these actions to be important or even necessary.

5.1.3 Teacher education

The last subscale, teacher education, measures the quality or quantity of addressing issues around gender within their teacher education programs. A higher score in means within this subscale indicates that gender issues are covered well and addressed enough in their teacher training programs. The means of this subscale (see Table 3) is 2,23, which is low on a score of 5. Exploring the descriptives of each question within this subscale does present clearer where this low score comes from. Furthermore, one question was removed from this subscale due to low reliability, however, this question does present interesting information which will, therefore, be discussed as well. True to the method used with the previous subscales, the standard deviation of this subscale is 0.7, however, there are no measured means differing more than 0.7 from the general mean of 2.23. This indicates a consistent view of the participants over all questions, moreover, no questions recorded an average mean of 3 or more on a score of 5 which indicates a general disagreement with the stated questions. Though for

analysing this subscale, questions below or over average will be analysed in further depth. The three lowest scores will be circled in red and the three highest scoring questions will be circled in green (see Table 7: Descriptives of the subscale 'teacher education'). Nevertheless, it should be noted that even those three questions scoring the highest on this subscale still score below the average of 3 on a maximum score of 5.

Firstly, addressing the one question ultimately withheld from the subscale, the question 'When discussing gender and sexuality in courses, they were mostly carried out in gender stereotyping and heteronormative ways' was answered by participants in a mostly agreeing manner. In total, 52,6% of participants agreed with this question, which presents an interesting perspective on the other answers within this subscale. However, this will be discussed in a later section more thoroughly.

Questions	Minimum	Maximum	Mean	Standard deviation
I have been adequately taught about gender biases in my teacher education	1,00	5,00	2,63	1,01
I feel that there has been paid enough attention to gender stereotyping in my teacher education	1,00	5,00	2,79	1,29
I have sufficiently been taught ways to work on gender stereotyping in classrooms	1,00	4,00	2,42	1,04
In my teacher training courses I think I have studied enough gender research.	1,00	5,00	2,52	1,00
In my teacher training studies I have had enough opportunities to take gender courses.	2,00	4,00	2,47	0,83
During my teacher training studies there has been enough attention paid to the requirements of the Act on Equality between Women and Men (1986/2005)	1,00	5,00	2,37	0,93
I have been taught sufficient ways to spot gender stereotyping in resources or other media.	1,00	4,00	2,42	1,34
I have been taught adequately where to look for gender non-conforming texts/books/media.	1,00	4,00	1,95	1,39
I have been taught how to support transgender and non-binary children.	1,00	3,00	1,58	1,32
I have been taught (trans)gender-inclusive practices.	1,00	4,00	1,68	1,26
I have been taught how to support transgender children in my classes.	1,00	4,00	1,74	1,60

Table 7: Descriptives of the subscale 'Teacher education'

The three lowest scoring questions in this subscale all addressed education on transgender issues: 'I have been taught how to support transgender children in my classes', 'I have been taught how to support transgender and non-binary children' and ' I have been taught (trans)gender-inclusive practices'. Although, the only other question scoring lower than a mean of 2 on 5 ('I have been taught adequately where to look for gender non-conforming texts/books/media') links back to another low-scoring question in the previous subscale on gender sensitivity which indicated that (student)teachers are less likely to intentionally select texts/books/media that deal with gender non-conforming subjects. Consequently, most participants also indicate that they have not been adequately taught where to look for these resources since 68,4% of participants disagree and 21% of participants strongly disagree with the presented question: 'I have been taught adequately where to look for gender non-conforming texts/books/media'. Furthermore, the three lowest scoring questions indicate a lack of addressing issues transgender students may face and a lack of teachings on how to support transgender or non-binary children as well, participants answered on these three questions with 'strongly disagree' and 'disagree' at a rate of respectively 47,4% - 47,4%, 47,4% - 42,1% and 42,1% - 47,4%. These subjects will also be further discussed in combination with answers on the interviews.

Lastly, three questions scored higher than the mean of the subscale itself: 'I have been adequately taught about gender biases in my teacher education', 'I feel that there has been enough attention paid to gender stereotyping in my teacher education' and 'In my teacher training course, I think I have studied enough gender research'. However, the means of these questions still scored between 2,5 and 2,8, which does not indicate a high level of gender education within their teacher education. Furthermore, 42,1% of participants still disagreed with the first question and 36,8% with the second and third questions.

Through this whole subscale, only 5,3% of participants answered on three questions with 'strongly agree', which were the three questions that scored the highest as well. The highest scoring questions in this subscale all addressed a general belief that they had been taught adequately on gender biases, stereotypes or gender research within the teacher education. In contrast, questions addressing specific aspects important to address in the teacher education to increase gender sensitivity in the classroom, scored the lowest. These differences in meaning between the highest and lowest scoring questions may indicate that the lack of these specific teachings do not necessarily present as much of an issue to these participants in regards to the teachings on gender biases, stereotypes or gender research. However, it remains important to

note that no questions scored higher than 2,8 on the maximum score of 5, thus, in general, most participants did not feel that gender was adequately addressed within their teacher education program.

5.1.4 Gender differences in answers

Lastly, the means of the three subscales was compared in terms of reported gender since previous research (Lahelma, 2011 and Sikes, 1991) has indicated that males often oppose teachings on gender awareness more strongly. However, it must be noted that only 6 participants in this survey identified as male, contrasted with 13 participants who identified as female. Therefore, any conclusions on differences must be taken lightly and cannot be adequately proven. Furthermore, this was a self-report questionnaire with a simple question on which gender they identified as, which excludes any nuance on experiences in regards to gender roles society has pressed upon the respondents, though this may not necessarily be relevant in this case. Nevertheless, some slight differences did appear (see Table 8: Differences in mean scores on different subscales between genders). The mean scores of males recorded a higher level of gender stereotypes, a higher perception of adequacy in teachings and a significantly lower amount of gender sensitivity in actions in the classroom. Especially this last difference is striking with females scoring 3,92 on the subscale 'gender sensitivity' compared to the mean score of 2,83 of males. Which may indicate that male (student)teachers are less likely to address gender biases or gender stereotypes in the classroom or during planning.

Report

Gender		gender_stere otypes	teacher_educ ation	gender_sensi tivity
Female	Mean	2,7427	2,1049	3,9167
	N	13	13	13
	Std. Deviation	,49001	,54400	,51707
	Median	2,6552	2,0909	3,8333
	Grouped Median	2,6782	2,0606	3,8611
Male	Mean	3,0115	2,5152	2,8333
	N	6	6	6
	Std. Deviation	,58830	,94242	,82832
	Median	2,9310	2,6364	3,0417
	Grouped Median	2,9310	2,4242	3,0417
Total	Mean	2,8276	2,2344	3,5746
	N	19	19	19
	Std. Deviation	,52220	,69454	,79781
	Median	2,7241	2,0909	3,6667
	Grouped Median	2,7241	2,0682	3,6667

Table 8: Differences in mean scores on different subscales between genders.

5.2 Analysis of qualitative data

5.2.1 Method of analysis

The analysis of the qualitative data was conducted through the development of a coding scheme and a two time coding in order to determine intra-coder reliability. The process of developing the used coding scheme can neither be described as fully deductive nor inductive, as a combination of both approaches was utilized. Firstly, some broad themes were created based on the questions that were developed beforehand. Consequentially, the following themes were designed: prior to questionnaire, regarding questionnaire, teacher education, gender stereotyping and teachers and gender. After this initial deductive approach to creating prior coding themes, specific codes were assembled through an inductive manner by broadly analysing first one transcribed interview, designing codes within the broader themes, and then analysing a second transcribed interview. After these initial two rounds, a broad coding scheme could be constructed and tested. Through the testing of the coding scheme, some codes changed wording, changed category or were eliminated. Finally, the following scheme was constructed (table 1).

Coding scheme	
1. Prior to questionnaire	a. Incentive for answering
	b. Possible barriers
2. Regarding questionnaire	a. Phrasing of questions
	b. Context of answering
3. Teacher education	a. Courses on gender
	b. Gender discussed in other courses
	c. Thoughts on what should be included in courses
4. Gender stereotyping	a. Personal experiences
	b. Teacher stereotypes
5. Teachers and gender	

Table 9: Coding scheme

5.2.2 Reliability of coding

The reliability of the coding scheme was checked through intra-rater reliability. This method was chosen since the interview questions and resulting coding scheme were designed in junction with the survey. Therefore, the coding scheme would not be used in further research and was only developed to fit this research thesis. Furthermore, to properly code these interviews, the coder would need to have intimate knowledge of the survey questions as well. However, insuring the coding scheme could be used reliably to code the interviews remained essential. These reasons resulted in the choice of intra-rater reliability checks over inter-rater reliability checks. One interview was chosen to be evaluated at two separate occasions due to all (sub)themes being answered thoroughly by this participant. The interview was coded a first time by the final coding scheme and coded once more two weeks later. Both coded interviews were then manually copied into two Excell files, since the second Excell file would then be used for coding the other interviews. Finally, disagreements were coloured red in both files and the intra-rater reliability was calculated using a formula mentioned by McAlister et al. (2017) which divides the total number of agreements by the total number of codes. A resulting agreement of 0.93 or 93% was found. Castleberry & Nolen (2018, p 812) state that, for intra-coder reliability, internal consistency should be in the 85-90% range, depending on the complexity of the coding scheme. Therefore, internal consistency for this coding scheme seems to be quite high, higher than necessary according to Castleberry & Nolen (2018). However, the coding scheme developed for these interviews is relatively simple and designed to gather information rather than truly analysing inferred meanings through the answers.

The disagreements between the two coding times was found within the themes, 'gender stereotypes' and 'teachers and gender', where certain phrases were once coded as 'personal experiences' and at another time as 'teacher stereotypes'. These disagreements did make sense since the interviewee mentioned gender differences and stereotypes in connection to teachers they *noticed* or *heard*. In the end, it was decided that a sentence starting with *heard* would not fit into personal experiences but rather in the theme 'teachers and gender', since it was not a personal experience nor a true stereotype. However, the sentence mentioning what the interview *noticed* would fit into the subtheme 'personal experiences', since *noticing* behaviour or treatment does infer a personal experience by the interviewee. Lastly, the participants who are quoted in the next section were contacted again with the mention of the exact quote and circumstances/paragraph of interpretations resulting in the needs for usage of

those quotes. Furthermore, they were asked whether they agreed with what was inferred and analysed in regards to those quotes as well.

5.2.3 Analysis of results

5.2.3.1 Questionnaire

In regards to the first theme, prior to questionnaire, not too many in-depth answers were provided by the participants. Firstly, when discussing incentives for answering, one participant found it important to help out when a researcher asked for participants. The other two participants attributed their personal interest as the reason why they participated, the first interviewed participant has a family member struggling with getting identified and recognised as his gender at school, whereas the other participant expressed the importance he felt in being aware of gender when being in class or addressing the pupils. Secondly, a few possible barriers were described by the participants. The first two barriers were more general, as one participant thought that a barrier to answering could be a perceived lack of time and, secondly, agreed that language could be a barrier since answering in a second language could be difficult as it requires more mental energy and more time as well. The other barriers mentioned pertained more towards the specific nature of this questionnaire, as it concerns gender. A lack of knowledge was a first barriers brought up by a participant, secondly, the feeling that this subject may not be important personally to the potential participants could be a barrier as well. Another barrier mentioned by the participants was the sensitive nature of the topic, which can be connected to another participant who mentioned that potential participants may be afraid to answer. Lastly, one participant mentioned that teachers can be quite conservative, upon reflection he added that this particularly entails those teachers already working in the field of education.

The second theme encompassing the questionnaire the interviewed participants filled in, gathered answers they provided in regards to the questionnaire in itself. The two codes within this theme were: phrasing of questions and context of answering. Two of the participants did not find the questions in general hard to answer, though one did find a particular question hard to answer, namely: 'When inviting people to school, I will ensure equal representation of all genders'. The reason this was hard to answer, was that he is not a class teacher, therefore, he could not really answer this. However, it might be important to note that this was one of the questions where participants could answer with 'not applicable', which was answered by participants. The last participant did find some questions hard to answer, in particular those

connected to stereotypes. For this participant, questions such as 'boys are more easily distracted than other genders during class activities' are not really connected to gender: *"I didn't know where to put my answer because like, boys might be distracted, but also girls might be distracted, but also other genders might be distracted. And I was like, uh, well, uh, I don't see this as a gender question, so I didn't really know. Maybe it's the language understanding."* As the participant herself mentioned, this can be a language understanding since questions were formulated as 'one gender is more/less... than other genders', however this remains important to withhold. Other answers in regards to the phrasing of questions were directed towards the stereotypes towards both teachers and students. First of all, the participants agreed that these stereotypes were quite accurate, even in Finnish society and that there did not seem to be any significant stereotypes missing. Secondly, one participant elaborated that the phrasing of these questions already assume that you are not stereotyping gender according to a two-way street, as all questions are phrased as 'one gender is more/less... than other genders' and suggested that this may be another question and stereotype to ask in the survey. Lastly, another participant commented that sometimes these stereotypes are true, or seem to be true, not due to a gender being one way or another, but because society has steered people that way and therefore, that stereotype ends up more likely to fit people with that gender.

Continuing to the second code of the second theme, attention was directed towards the context in which participants interpreted and answered questions. Firstly, one participant explicitly mentioned feeling the desire to answer in a 'politically correct' or 'socially acceptable' manner, which will be further explored in the discussion section of this thesis. This is the same participant that mentioned that they perceived the questions regarding stereotypes to not truly be connected to gender and as more an individual aspect of a person. A second participant discussed that they answered the questions regarding 'gender sensitivity' as if he would be in an ideal world where he could, for example, choose who to invite to schools freely. Which would differ if he was already acting as a teacher who would, probably, answer with a realistic world in mind, though he did add that, in this case, he would find it hard to perceive the question as how he would want to act in that situation or how was already acting.

5.2.3.2 Stereotypes and teachers

The next two themes discovered within the transcribed interviews, were gender stereotyping and teachers and gender. The theme gender stereotyping will be discussed first, followed by teachers and gender.

To begin with gender stereotyping, two areas of coding could be found within: personal experiences and teacher stereotypes. Personal experiences focused on stereotypes they noticed personally, whereas teacher stereotypes concerned those stereotypes they believe or they had ideas on. Firstly, both male participants commented that it may be easier for a male teacher to handle students in a classroom since they are usually given more authority and respect by others. One participant recalled a conversation with another teacher where they discussed that a student was taught at home to respect males more than females. A next stereotype mentioned by two participants was 'boys are lazy', a male participant noted that laziness in planning may be more common for male teachers and he explicitly stated that he felt that 'perfect teachers' were more likely to be women. The other participant, female, did not really believe in the boy discourse and that the idea that 'boys are lazy' may just be an expectation that is played out, especially since *"It's cool to ~~be~~ not care about the school"*. Within the segments coded as teacher stereotypes, one participant iterated a similar statement that another participant made as well, though that idea was coded as 'phrasing of questions' since it specifically pertained to the questions in the questionnaire. The participant commented here that some female teachers may be more nurturing, empathetic and caring than their male counterparts, but that this may be a role they play out since they have been taught to be more nurturing, empathetic and caring, and vice versa. Lastly, two of the participants mentioned stereotypes people have about teachers, regardless of gender. The first participant discussed the expectations parents (and others) have that teachers should be model citizens without a private life. A second expectation prompted by the other participant concerned the assumption that teaching is a passion and the pressure that comes with this, whereas teaching is also simply a job that should not be 24/7 as he believes society expects.

The second theme of coding, teachers and gender, did not contain many sentences coded as such, nevertheless, some were found that did not fit in other themes. In general, participants noted that female teachers and students were in the majority from teacher training, to teachers and head teachers, though it was not perceived as a lack of male teachers or that this was a problem. However, one participant did note that she heard that her male student-colleagues,

during teacher training, were sometimes expected to take care of the difficult and physically aggressive students since they were males and it was expected from them.

5.2.3.3 Teacher education

The last theme that was found within the interview transcriptions, was on teacher education. All three participants were in their last or second to last year of class teacher education at the University of Turku, although one student mentioned a focus on physical education rather than class teacher education. Therefore, they had all gone through most of the study process at the time of the interviews. Within their education program, there is a module 'Teacher as an expert' wherein they are required to choose one course from a list of 6 (University of Turku, n.d. a). Within this is list is the course 'gender and education', which is the only course in the program focusing on gender in education, although the course 'Democracy, Equity and Human Rights in Comprehensive School' also makes note of covering 'gender, sexuality and equality in the practices of education' in their list of contents. However, in the new curriculum program in 2022-2024, the course 'gender and education' will not be offered to class teacher students any longer and will only be available to students within the educational sciences degree programme (University of Turku, n.d. b).

Within the coded parts referring to 'courses on gender', all students noted this optional course though only one of these students took this course. One participant described a course they took as an exchange student in Austria on integration, where a presentation was included from a head teacher of a school focusing on gender awareness and neutrality, which the participant found really interesting. The participant that did take the optional course on gender and education expressed being curious and that he finds it important to know more on this subject. He briefly described a few subjects that were covered in this course. *"It was all what we have experienced about gender in our studies or when we have been teachers in school, and there was some kind of stereotypes and we also discussed about those multiple of sexes, so there's not only female and male, but also intersex and non-binary people, other parts were good and okay.[We talked about transsexual and transgenders and how hard it can be to handle this kind of situations on class. Teacher told us one case where student was transgender and her name was different on system compared to that name she liked to be called.]"* When asked what he found the most important of what was taught in this class, he described learning about differences between male and female teachers and stereotypes regarding female teachers. Additionally, some subjects that were not covered were ways to help parents who

hold biased or stereotyped views on occupational choices, to find good resources, how to look at gender (stereotypes) in resources and how to concretely support students who are transgender. Lastly, according to him, only very little was mentioned on perceptions teachers may have towards students.

A second code within the greater theme of teacher education addressed mentions of gender in other courses. Firstly, all participants stated that gender was not brought up often in other courses, though they discussed instances where it was. One participant mentioned that they were taught that they should avoid using gendered language in the classroom such as 'girls, be quiet' and that there was a brief discussion on dividing boys and girls in teams in sports, as well as on the subject of boys' and girls' sports. Though they noted that had not been given any tools on how to approach gender beyond that. A second participant remembered a lecture in biology on health education that only covered the male and female gender, and only addressed heterosexuality. The last participant elaborated a bit more and mentioned that it sometimes pops up briefly in courses. Since his studies focus primarily focus on physical education, gender was addressed briefly though more in regards to changes the bodies of children go through during puberty. Furthermore, he commented that attention was paid to the way in which schools split (or do not split) children according to gender for physical education and that more and more schools do not split up children for this class. In addition, the option for separate changing rooms for transgender students was brought up briefly though no actual tools were given to the students on how to approach these issues correctly. Lastly, although he said that some of these discussions made the 'gears in our head turn', he found the subject to be complex and expressed he felt unprepared on this matter.

The last code within the theme of teacher education collected thoughts, desires and wishes of what could or should be covered or included on gender in the teacher education. The participant who did take the optional course wished for two things, more courses on gender in general and case studies/sharing of experiences from students' and teachers' perspectives. The other two participants mentioned other wishes. Firstly, both of these participants desired a book or guideline with best practices or even clearer rules on what they can or should do in certain scenarios. For example, *"what to do if I have a student who recognizes themselves as, um, as not male or female or, or what to do in regards to parents. For example, if the student is, um, uh, Wants to be called by a male name, even though their parents call them by a female name. And I don't know how I should like, act with the parents or what I should do in that situation"* and *"And so, and even as the teacher, I respect a child's wishes to be called*

the name that they want to be called, uh, are the parents going to like, give me a flag or, or, or, and what should I do in that situation? Because I don't want to be disrespectful to the student, but I also want to keep peace with the parents." Furthermore, one participant wished for more knowledge on how to find resources to help transgender students and resources to include in the classroom as well. Thirdly, the participant wished for knowledge on steps that a child who is questioning their gender goes through and how to help them and their parents in this process, or how to direct them to resources. Lastly, one participant stated that the basics should be covered in regards to gender, starting with the knowledge that gender is not just male or female.

5.3   Analysis of the survey

Through the combination of survey analysis and interview analysis, several aspects of the survey will be discussed, namely, phrasing, context of answering, and questions and subscales.

Firstly, the phrasing of questions was mainly explored through the interviews. As one interviewee discussed, the phrasing of the questions as one 'gender vs other genders' already presumes the understanding that gender is not a two-way street. Perceiving gender as a binary could already present a lack of knowledge on gender or even unveil stereotypical thinking in some cases. Adding to the survey a question on their perception of the existence of the gender binary seems too complex to be answered on a Likert-type scale, however, this can be a suitable question for interviews. Another difficulty in understanding was also connected to the questions on stereotypes, with an interviewee mentioning that she did not connect these behaviours (such as 'being more precise') to a specific gender and thus, found it difficult to answer. The other participants did not mention this difficulty and, moreover, this seems challenging to modify. As the interviewee mentioned this could be due to answering the questionnaire in her second language, translating the questionnaire to the native language of participants (in this case, Finnish) could ease this issue. Lastly, three questions did not fit in their subscales in their original form, though did fit when reverse coded. Rather than noting simply that these questions should be reverse coded, reversing the wordings of these questions seems more appropriate since these are the only questions. Moreover, changing the wording does not appear too challenging in this case though it will need to be carefully considered to ensure the meaning of these questions does not change. All in all, most questions were not considered hard or confusing to answer though the wordings of some questions should be

changed. Additionally, one participant commented on the wording of the questions as 'one gender versus other genders' as the phrasing of these questions pre-imposes a worldview in itself that gender is not a binary system. Interestingly, during the creation process of the survey, the questions were intentionally changed from the dichotomous nature mostly exhibited by other surveys or research into gender in education. The comment of this participant further emphasizes the complex nature of gender research as both phrasings, dichotomous wording or 'one gender versus other genders', indicate preconceived notions towards the subject. Lastly, questions phrased as an 'intention' or a 'belief in the importance', in regards to gender sensitivity, scored higher than questions regarding an actual action. These differences indicate that an intention or belief does not necessarily indicate that (student) teachers actually act on these beliefs or intentions.

A second aspect to discuss is the context in which participants answered questions or reflected on questions, which was answered by interviewees. Firstly, since one participant mentioned answering to the questions regarding gender sensitivity in an ideal world, the context of these questions should be clarified to the participants. Two scenarios are possible, the students answer how they desire to act or how they would act in an ideal world, or secondly, they answer in a realistic context, whether that be how they act at the moment or how they will act in the future. Since the participants were student teachers, they did not yet have their own classroom where they could decide to act a certain way. Teachers who do have their own classroom would be more inclined to answer these questions in a realistic context, as in their actions at the time. As this realistic context is the desired condition for their mindset at the time of answering, this should be clarified either through the questions themselves or through an initial disclaimer. For this survey, a combination of both could utilized since some questions clarify that the participants should answer as to how they *will/are willing to*. However, these phrasings are clarified and changed to *I intend to* if the question measures their intention. Before going to the questions themselves in this subscale, a clarification will be added to ensure answers will be given according to a realistic context. Secondly, one interviewee mentioned answering the questions in a 'socially acceptable' or 'politically correct' manner, which can be categorised as the Social Desirability Bias (SDB) (Fisher & Katz, 2000; Nederhof, 1985). The Social Desirability Bias is a well-known and common source of bias in both quantitative and qualitative research, but especially affects social sciences research (Nederhof, 1985). The more sensitive a topic is perceived as, the more likely participants answer in a socially desirable manner, and the topic of gender issues is, as

Lahelma (2011) pointed out, incredibly sensitive. Though there have been some ways offered to combat or reduce SDB, it can never be discounted or completely erased (Fisher & Katz, 2000; Nederhof, 1985). Some methods can be used to attempt to limit bias in social science research, such as using anonymous and self-administered surveys or transforming the questions to make them more neutral or even giving only undesirable options to participants (Nederhof, 1985), however, none of these methods guarantee a reduction in biased responses. Nevertheless, this questionnaire was answered anonymously and self-administered, however, the questions could not be transformed to be neutral since the topic of gender awareness lacks a neutral inclination to the general population. As Lahelma (2011) and Sikes (1991) pointed out, discussing gender awareness invites explicitly expressed opinions, or no expressed opinion due to reactions an opinion may provoke. Therefore, eliminating a Social Desirability Bias is impossible, however, indirect questioning or observations of the participants in the study may provide more information on gender awareness in teachers than just using a self-report survey. This method of research will be discussed in a later section.

After discussing the phrasing of questions and context of answering, attention must be diverted to the questionnaire in itself. As mentioned during earlier analysis of the subscales and questions, not all questions were suitable to withhold after revision. In the end, 12 questions out of 64, divided over all subscales, were removed to improve reliability within the subscales. Moreover, the original 5 subscales were reduced to 3 through re-distribution of the question to other subscales that presented as more fitting. The three remaining subscales were: gender stereotypes, gender sensitivity and teacher education, which were all very reliable by themselves (Cronbach's alpha is above 0.90, Table 3). However, the questionnaire in itself only measured a reliability of 0.80 with low correlations between the different subscales (see Table 4). Furthermore, the interviewees were asked questions on two of these three subscales to provide more in-depth knowledge and interpretations. Concretely, in regards to the subscale 'teacher education', the participants of the interview provided interesting headway into this topic and what they feel should still be covered and in which way. As a consequence, more questions could be asked in this particular subscale, such as 'In my teacher education I have been sufficiently taught the differences between sex and gender' and 'In my teacher education, gender was largely discussed as a spectrum rather than a binary system'.

Lastly, questions within the subscales often possessed very different meanings and worldviews. Questions regarding the perceived worldview of others, within the subscale 'gender stereotypes', often scored higher than questions regarding the personal worldview of

participants, which indicates that participants believe that others possess more gender stereotypical beliefs than they themselves do. Furthermore, the consistency within the subscales in regards to reliability and correlations, regardless of the different types and meanings of the asked questions, indicates underlying patterns throughout the questions within each subscale rather than throughout the whole survey. In addition, questions phrased as an intended action within the 'gender sensitivity' subscale scored higher than questions measuring a reported action of the participants. This difference may be connected to the self-report nature of the survey as it is easier to agree with an intention to act, even if you have never acted in this way, than agreeing with performing the action when you have not yet done so. This distinction may prove interesting to further explore in future research.

5.4 General analysis

In this survey, answered by a small sample of Finnish student teachers studying at the University of Turku (N=19), reported levels of gender stereotyping were rather low. Nevertheless, males (N=6) showed higher levels of gender stereotyping than the females (N=13) in this survey, with a mean of 3,12 compared to a mean of 2,74 on a maximum score of 5. However, in general, most participants did not believe there were many differences between teachers based on gender and that differences in individuals in one gender are greater than differences between genders. Although participants did respond higher on questions regarding the 'stereotypical' behaviour of boys, such as finding it hard to sit still in the classroom. One interviewee attributed this behaviour not to a personality trait inherent in boys, but rather to expectations others may have, which will be discussed further in the next chapter. In regards to beliefs towards other teachers, participants reported the feeling that male teachers have it easier to find jobs, are more appreciated in schools and more respected by others. Furthermore, participants believed that male teachers carry more respect and authority. This last aspect was countered by the two male interviewees, who believed that this is not an inherent trait but that male teachers are rather given more authority and respect by others. Lastly, participants did report a higher belief that female teachers are more nurturing, empathetic and caring and that girls work more precisely in the classroom. This difference between most participants disagreeing that there are more differences between genders than within one gender, with the elevated scores in regards to some questions addressing a specific gender stereotype may indicate that lingering beliefs in gender stereotypes do persist even though the participants consciously report to know that stereotypes are just stereotypes. Additionally, when explicitly asked, most participants respond with a willingness to use the

desired name and pronouns of a student, even if it was different on paper (no participants disagreed, with a mean of 4,21) and do not feel that there are many differences between working with a transgender or a cisgender teacher (mean of 3,95). However, these questions represent intentions or beliefs rather than an action and, as seen in the next subscale, reported intentions do not necessarily mean that the actions take place. Although they report on an intention to use preferred pronouns and names in the classroom, one interviewee discussed the uncertainty of how to proceed if the parents would not agree. This statement corroborates the notion that, although the intention is there, (student) teachers may not act as such in the classroom, especially when the name and pronouns would be different on paper and the parents do not support the gender identity of the child. Lastly, the highest scoring questions in this subscale were phrased to measure the perceived worldview participants believed others have rather than their personal worldviews, especially in regards to other teachers. This discrepancy between worldviews from the point of view of the participants reveals that, in general, participants routinely believe that other people possess more stereotyped ways of thinking than they themselves do, whether that holds true for this pool of participants remains impossible to measure.

In general, all participants report a rather high level of intention to act in a gender sensitive way in educational situations (mean = 3,57), which was rather consistent over all questions within this subscale. However, male participants score lower than their female counterparts, with a mean score of 2,83 compared to a mean score of 3,92. Most participants report that they believe it is important to actively act against gender stereotypes and biases as a teacher and to address gender biases parents may have towards future careers/studies for their child. Slightly lower amounts of agreements were measured in finding importance in checking resources for gender biases and stereotypes and addressing gender stereotypes in resources/media with the children. Moreover, most participants felt willing to assist with the social transitioning of transgender children at school. In contrast, the lowest average was found in the question 'I intentionally select texts/books/media that deal with gender non-conforming subjects.' This last question does cover an intentional act whereas most other questions address finding importance in an act. The lowest score of the intentional act versus the highest scores attributed to questions regarding the belief of the importance of the act, indicate a discrepancy between beliefs and actual actions. Though most participants report that they believe in the intention of the act, lower amounts of participants actually report on

following through with gender sensitive actions in the classroom. These findings can lead to the conclusion that intentions do not necessarily mean that an action will follow.

The last subscale, covering teacher education, measured significantly lower means than the other subscales, with an average of 2,23 out of a maximum score of 5. As was discovered in the first subscale, the mean of male participants (2,52) was higher than that of female participants (2,10), however, only slightly so in this case. The highest recorded means within this subscale was measured in the questions concerning the belief that enough attention has been paid to gender stereotyping and biases in their teacher education, however, these scores remain quite low (2,63 and 2,79 respectively). As was discovered by Lahelma (2014, 2019) previously, 47,4% of participants disagree and 21,0% of participants strongly disagree with the question that enough attention has been paid to the requirements of the Act on Equality between Women and Men (1986/2005). Furthermore, 68,4% of participants in this study disagree with the statements that they have been taught sufficient ways to spot gender stereotyping in resources/media or been taught adequately were to look for gender non-conforming texts/books/media. This links back to the lower means reported on the question posed in the previous subscale to the question 'I intentionally select texts/books/media that deal with gender non-conforming subjects'. Additionally, most students did not agree that they have studied enough gender research nor that they had enough opportunities to take courses on gender. Lastly, around 90% of participants reported to not have been taught how to support transgender children in their classes, to support transgender and non-binary children nor have they been taught (trans)gender inclusive practices. All three interviewees agreed that especially teachings on transgender issues was lacking in their teacher education with two explicitly desiring more knowledge, good practices, resources and even guidelines on how they should act in certain situations. Though what was addressed concerning gender were ways to limit gendered language in the classroom and discussions were held on the subject of dividing girls and boys up for sports at schools. Contrastingly, one interviewee mentioned that teachings on health education only covered the male and female gender and heterosexuality. However, all interviewees expressed the desire to hear more through case studies and were interested in hearing transgender students, teachers and parents discuss their experiences and potential good practices. Lastly, one interviewee mentioned that they felt that the basics on gender should at least be covered, together with possible steps transgender students may go through when discovering their identity and how to address issues with parents in this regard.

Lastly, it remains difficult to gauge if the developed survey measures gender awareness as a whole. Although the three subscales each measure an aspect of gender awareness, and are each reliable within themselves, together they do not necessarily measure gender awareness. Reliability over this whole survey is good, just under very good at 0.795, however, this survey only measured responses of a very small sample of the population (N=19). Therefore, any definite conclusion on reliability would be too hasty to make. Furthermore, validity of this survey is difficult to calculate and measure, since this survey was not taken at two separate times nor was the score of the sample group on this survey checked with the score of the same sample group on a known valid and reliable survey on gender awareness in (student) teachers. Additionally, although this survey was constructed through compiling and analysing previous research, surveys and theories, gender awareness is still a difficult concept to measure, therefore it is valid to assume that not all aspects of gender awareness are covered in this survey. However, covering all aspects of gender awareness in a survey may not even be possible, especially when Social Desirability Bias must be taken into account as well. As such, further research is required to test the survey, in combination with other research methods to gauge gender awareness in student teachers, teachers and teaching practices at all levels of education. These conclusions confirm the complex nature of studying gender (awareness) in education which may be impossible to truly measure. Rather than measuring true gender awareness through surveys, it is possible to perceive patterns in the thinking or perceptions of the participants. Some of these patterns in this survey indicate that participants report a differing perception of their personal worldview and the perceived worldview of others with attributing themselves as possessing lower levels of gender stereotypical thinking than the general population. Another pattern uncovered in this survey demonstrates a difference in the reported intention or belief in an action and the reported action itself, with more participants finding importance in gender sensitive actions but reporting lower levels of agreement with having performed in a gender sensitive manner. Both of these patterns may be linked through the self-report nature of the survey with the presence of a Social Desirability Bias as they want to portray themselves as 'better' than others or as they are in real life.

6 Discussion

6.1 General discussion

In this discussion, the subscales and themes of the study, the survey, future implications and limits of this study will be explored fully. Through the first section, focus will be given to the discussion of the subscales, themes and the survey itself.

The student teachers in this study did report to possess some gender stereotypes, however, it is difficult to gauge if the answers to the survey correctly represent gender stereotypes in (student)teachers. Beyond the small sample and social desirability bias (Nederhof, 1985), gender stereotypes are often not explicitly present nor explicitly reported on. Generally, most people have subconscious biases that they may not be aware of, and therefore, would not report on. Even though the student teacher may disagree with a gender stereotype asked in this questionnaire, they may not act that way in the classroom. As Beaman et al. (2006) discussed in their report on the perception teachers have towards students of different genders, teachers do have specific perceptions of students based on their gender, even though they might be unaware of them. These differing perceptions lead to differences in treatment and expectations, how subtle these may be, from teachers, parents and students themselves (Beaman et al., 2006). As the OECD (2017) reported, though great strides have been made to close the gender gap in education, there are still significant gender differences in fields of study and potential careers. Women are less likely to pursue fields in STEM (OECD, 2017 and Lahelma, 2014), which are, usually, better paying fields and are overrepresented in education, hospitality, retail sectors and in the health sector. In order to broaden the field of study available to students, perceptions and expectations towards different genders must be adjusted, reduced and eliminated in the end. In this study, some higher scores were also measured in the perception of boys' behaviour in the classroom, from being more difficult to handle to finding it hard to sit still. These perceptions of boys' behaviour were discussed by Lahelma, (2014), Anderson (1997), Skårbrevik (2002, as cited in Beaman et al., 2006), and Mullola et al. (2011;2012, as cited in Kvande et al., 2018) and was directly linked to the overrepresentation of boys in special education (classrooms) (Hibel, Farkas, and Morgan ,2010, Nordahl and Sunnevåg, 2008). Kvande et al. (2018) described that boys do develop a bit differently in regards to concentration in the classroom, however, this does not excuse disregarding the behaviour when it becomes dirsuptive. However, as Lahelma (2014) noted, this, unfortunately, happens all too often. Although there is a trend of underachievement for

boys on tests such as PISA in reading in particular, in general, boys do catch up to the level of girls after graduation (OECD, 2017) and there does not seem to be much affect to boys' abilities to pursue different fields of education or job opportunities (Gorard, 2002, as cited by Beaman et al., 2006 and Lahelma, 2005). On the contrary, academically low-achieving boys have opportunities outside of higher education that may be unavailable to their female counterparts, as Lahelma (2005) further described. Simply put, girls may be more required to achieve high grades in order to find good careers than boys (Lahelma, 2005). Even within the more female-dominated fields, males may have more opportunities and are appreciated more, simply because they are working or studying in female-dominant fields (Lahelma, 2019). This was at least a perception student teachers reported in a study discussed by Lahelma (2019), which was corroborated by the participants in this study as well. The highest scores measured on the subscale covering gender stereotypes were questions that pertained to the feeling that male teachers are more appreciated, more respected and have it easier to find jobs. Furthermore, the interviewed (male) student teachers felt that they were automatically given more authority and respect in the classroom, which was not a very high scoring question in the questionnaire. This lends credit to the notion that students are aware of the explicit stereotypes that exist and disagree with the asked questions on a survey automatically since they are aware it is a stereotype, however, when asked about differences in treatment, it is clear that differences in perceptions, whether towards students or teachers, still exist. Therefore, it may be beneficial to study perceptions and stereotypes through observations and interviews, where the name 'stereotype' is not automatically mentioned and teachers are questioned more on differences in perceptions. Furthermore, as was researched by Younger and Warrington (1996, as cited by Beaman et al., 2006), students also hold perceptions towards differences in treatment from their teachers, which may be interesting to combine and compare with the perceptions teachers have. Furthermore, the questions within this subscale can be divided into questions on the worldview of the participants and questions regarding the perceived worldview of others by the participants. A pattern that was found within these categories was the participants attributing others as having higher gender stereotypical thinking than they themselves did. This pattern may be linked through the social desirability bias but would be worth exploring further.

The second theme, mostly covered in the survey part of this research, measured gender sensitivity in the participating student teachers. Gender sensitivity is defined succinctly by Chikunda (2010, p. 111) as "the ability to recognize gender issues" and was measured in the

survey through questions pertaining to (intended) actions teachers can take to combat gender issues. Most participants in this study reported the belief in the importance of addressing gender stereotype and biases as a teacher and address these issues with parents as well in regards to future studies and careers. However, the more specific the actions or belief in the importance of actions were, the lower the measured score. Especially questions addressing the selection and checking of resources for gender biases and stereotypes scored lower than the other questions. One potential reason for this lower score can originate from the lack of education on appropriate resources in the teacher education program, as was reported by the participants in the survey and the interviewees. One interviewee mentioned that though she did not check existing resources or examples, she did pay attention to gender roles when creating own examples, exercises and resources in general and tried to flip the existing gender stereotypes, biases and roles. For example, instead of 'Sarah cooks for the family' the phrase would be changed to 'Philip cooks for the family'. These actions were a result of her own growing awareness to gender stereotypes and biases and, moreover, she explicitly mentioned not having been taught to act in this manner. As demonstrated by Tainio & Karvonen (2015), when teachers were asked to analyse gender differences and biases in textbooks, they were able to notice and reflect on stereotypes which indicates the importance of education on this matter. Even though these experienced teachers in the study by Tainio & Karvonen (2015) were not used to reflecting through a gender sensitive lens, they showed that the ability to act in a gender sensitive manner or reflect on educational materials can be taught. Lastly, some comments given by participants in the study show that, even though they viewed that everyone is an individual with different personalities and characteristics, they presented the Finnish view of 'gender neutrality' (Lahelma, 2011) as they stated that gender should not be focused on or paid too much attention to by teachers. For example, in regards to inviting people to school in typically gender non-stereotypical (or non-stereotypical) fields of work, such as male nurses, the participant noted that they would just look for a suitable person to talk at school, as gender is not important for this. This last comment shows a lack of gender sensitivity, and, even though the participant may not realise this, they showed an unawareness to gender issues still present, especially in occupational settings (Andersson, 2017; Brunila & Kallioniemi, 2018; Chikunda, 2010; Gray & Leith, 2004; Verdonk et al., 2008; OECD, 2017). An underlying pattern connecting these questions within this subscale was found in the distinction between an intention or belief and an action. Routinely, the questions phrased as a belief in an action scored the highest within this subscale and the questions expressing an action measured the lowest reported agreements.

Though the participants in this study did have the intention or desire to act in a gender sensitive manner, they were not provided with adequate knowledge or tools in their teacher education. This was shown in this survey through the overwhelming amount of student teachers who disagreed with statements regarding teachings on gender awareness in the teacher education programs, which was further laid out in the previous analysis section. Furthermore, most participants (52,6%) agreed that when gender and sexuality was discussed in courses, this was mostly carried out in gender stereotyping and heteronormative ways. This response shows the perceived implicit biases, attitudes and beliefs the teachers within the teacher education program communicate to the students. Since such a high percentage of students in this study picked up on the gender stereotypical and heteronormative addressing of gender, it is not unimaginable that other implicit beliefs on gender would be taught to the students as well. The lowest scores in the subscale on teacher education were recorded in questions pertaining to teachings on spotting gender stereotypes in resources, finding gender non-conforming texts/books/media, and teachings on how to support transgender students, along with transgender-inclusive practices. These low scores were corroborated by all interviewees who mentioned the few instances were gender was discussed, such as the conducted discussion on the division of boys and girls for sport classes during one of their courses. Nevertheless, the participants stated that they were not handed or taught any tools to act on gender issues. Furthermore, as one interviewee recalled, teachings on health education were firmly conducted in a heteronormative manner. The only tool, or rather advice, that was given to the students, as one interviewee mentioned, was to limit the use of gendered language in the classroom. Additionally, all interviewed students knew of the existence of an elective class on gender in education, though two out of the three interviewees did not elect to take this course. This indicates that the interest in gender issues is not limited to those students enrolled in a course on gender in education and may be more widespread than may be is perceived currently. The reason these students did not take the class was attributed to the issue that they had to make a choice between several different electives and there was another class they definitely wanted to attend. The participant who did take the elective course on gender in education felt that the topic was very interesting and important to be educated on. However, this course was organised by the department of education rather than teacher education, thus the course material did not focus on what future teachers could use in their classroom, such as the mentioned resources. Furthermore, as the interviewee recalled, and was confirmed through an exploration of the new curriculum, this elective course will no longer be available for the students in the teacher education program (University of Turku b, n.d.). To summarize,

the students who participated in this study felt inadequately taught on gender awareness, and reported that when gender was discussed, this was mostly conducted in gender stereotypical and heteronormative ways. Unfortunately, the only elective on gender in education available for students in the teacher training program will not be available in the upcoming academic year.

Since the student teachers in this study revealed both through the survey and the interviews that they felt that there was a lack of education on gender issues within their teacher education program, the need for further education on this subject can be recognised. As was explored in the theoretical background, teachers do hold differences in perceptions towards different genders, some of these perceptions have even evolved into stereotypes (Jones and Myhill, 2004, Mullola et al., 2012 and Gray & Leith, 2004). Furthermore, these perceptions and expectations have far-reaching and long-lasting effects on the pupils, especially when discussing the disproportion in referrals for boys and girls for special education or diagnosis of learning disorders (Beaman et al., 2006). It seems evident that future teachers should know of these perceptions and stereotypes in order to be careful in their own teachings. Additionally, these long-standing stereotypes have had an impact on the gender gap in studies and careers, from the low presence of women in STEM fields, to the low presence of men in the health sector or in the field of education (Boniol et al., 2019; European Commission, 2019, as cited in Kollmayer et al., 2020, p. 2.). Teacher education programs have a responsibility in teaching the future generation of teachers to know these stereotypes and perceptions, to teach them how to combat these stereotypes and where to find additional resources. Moreover, teachings on gender should not be isolated to one elective course since the range of reached students through this class is limited. A mandatory class on gender issues in education may present a viable solution, however, this may not suffice since the topic of gender (issues) is part of a broader understanding in educational equality. (Gender) equality and issues can be elements of teachings in multiple courses, ranging from subjects such as maths to teachings on child psychology. More than just teaching basics on gender stereotyping, the teacher education should teach students about gender in a non-heteronormative way. As gay marriage has been legal in many countries, such as Finland, for a few years now, teachings on how to address health education should not just cover the male and female sex and heterosexuality, but rather discuss the gender spectrum and different sexualities (Robinson & Ferfolja (2001, 2002), Robinson & Jones-Diaz (2006), as cited in Robinson & Ferfolja, 2008). Furthermore, all participants in this study reported not having

had teachings on transgender support for students or transgender inclusive practices, which helps not only transgender students but all students, which was echoed by Ullman (2017). The interviewed participants even explicitly desired more information, teachings, guidelines and resources to help transgender students in their future careers. Lastly, teachings on transgender inclusive practices would really benefit from case studies and inviting (former) students, teachers and parents to the university to discuss issues they encountered and examples of good practices, which was desired by all the interviewees in this study. As Lahelma (2011), Brunila & Kallioniemi (2018) and Sikes (1991) stated, the inclusion of gender awareness in teacher education has been difficult to implement, especially since discussing gender awareness influences students' worldview and perceptions which often invites resistance, arguments and even hostility. Nevertheless, the need for such a mandatory course on gender awareness in teacher education programs was illustrated by Naskali & Kari (2020), who collected and analysed the learning diaries of a group of students finished with a course on gendered practices in education. Their analysis revealed three main groups of students, based on these learning diaries, named as *Living the difference*, which were mainly students aware of or dealing with gender issues, *reflecting and transforming,* a group of students who started the course with a heteronormative outlook but found themselves changing their understanding, and lastly, a group who *perpetuated the status quo*, as they firmly resisted any change in understanding and held onto biologist and essentialist understandings of gender and sexuality, as well as ignoring, dismissing or resisting any feminist theories on gender. Though it is disheartening that such a large group exists, especially with the very blatant homophobic and transphobic language displayed in some of these passages shown in the study, the study does show that the inclusion of a course on gender(ed practices) helps to change the outlook of a group of students, those within the *reflecting and transforming* category (Naskali & Kari, 2020). Therefore, though the inclusion of a mandatory course on gender (awareness) in education may invite resistance by a group of students or even teachers (Lahelma, 2011), this should not be the reason to maintain the status quo and refrain from the inclusion of gender issues in teacher education programs. Furthermore, as this study by Naskali & Kari (2020) demonstrated, the inclusion of a mandatory course on gender issues in education does incite awareness of these issues and, in the end, can help future teachers reflect on and even adjust their attitudes, believes and actions to combat gender stereotypes and heteronormativity within their educational prospective careers and even in their personal lives. Encouraging change in society naturally invites, and has invited, resistance in varying degrees and aspects, however, this does not subtract from the value these changes can bring.

A final theme of questions that was interspersed in the three different subscales, were questions regarding gender non-conformity. Almost all participants in this study presented a willingness to use the name and pronouns a child desires, even if it was different on paper and a slightly smaller majority (73,2% agreed or strongly agreed) was willing to aid transgender students in their social transition at school. Furthermore, most participants try to use gender-neutral language in the classroom, however, as was pointed out in the comment section, the Finnish language does not have gendered pronouns, which makes this aspect a more natural inclusion. In contrast to the willingness of the vast majority of student teachers participating in this study to support transgender students, almost all participants (about 90%) disagreed that they had been taught how to support transgender students or transgender inclusive practices. These agreements regarding the teachings on gender non-conformity were reflected in the interviews as well, with two of the interviewees explicitly mentioning the lack of teachings in their educational programs and their desire for more knowledge, teachings on gender issues and being taught to find suitable resources. All interviewees mentioned desiring more case studies and conversations with students, teachers and parents to learn more about gender issues and good practices in regards to transgender inclusive practices and learning to support these students. However, it is important to note that in this survey there were participants who were not willing to support transgender students or were unwilling to use the name or pronouns the students desired. Furthermore, some participants did believe that there would be a difference between working with a transgender or a cisgender teacher. These participants do lend more credence to the fact that, on one hand, the students who did answer this survey were probably more positively biased towards gender awareness in general, which will be further explored in the section on limits of this study. However, on the other hand, the participants in this study were not all completely gender aware nor did all participants answer in a perceived social desirable manner. This difference between groups of students answering a questionnaire on this sensitive topic, can be connected to the three different groups of students found by Naskali & Kari (2020). The students who *perpetuated the status quo* in the study by Naskali & Kari (2020), would be less likely to answer positively to gender sensitive actions or answer according to the same social desirable manner as the other participants in this study, who would belong to either the group named *living the difference* or the group *reflecting and transforming*. Furthermore, in line with the findings of Berg & Kokkonen (2021), one of the participants, who in the interview mentioned a focus in his teacher training studies on physical education, mentioned the brief discussion that was had in one course on the issue of binary locker rooms. Just as was found in the study by Berg & Kokkonen (2021),

he mentioned that there are no locker rooms for every individual, so students would, naturally, have to be divided. Furthermore, he added that, although he thought that non-binary students could be given a separate room if possible, he was worried that insecure students would take advantage of the situation by pretending to be transgender. Thus, showing a distinct lack of awareness of issues, such as discrimination and harassment, transgender students do face on a regular basis (Anderssen et al., 2020; Ullman, 2017). Added to this lack of awareness shown by a teacher-to-be, one participant commented on the reason they were inspired to respond to the survey and agreed to be interviewed. This participant mentioned a growing awareness of these problems after the transition of a school-aged family member, as this student faced issues in regards to his gender not being recognised at school and by teachers. These statements by participants show that, although it is encouraging that most of the students responding to this survey are willing to help gender non-conforming students, there is still a lack of awareness, either in schools or in the teacher education, on (trans)gender issues.

Lastly, it may be difficult to gauge if the survey developed in this thesis can accurately measure gender awareness in student teachers at the University of Turku. However, the reliability of the three subscales does indicate that this survey measures perceptions of gender stereotyping (Cronbach's alpha = 0.927), reported levels of gender sensitivity (Cronbach's alpha = 0.918) and perceptions on gender awareness in teacher education (Cronbach's alpha = 0.903). Separately, these subscales all present an aspect of gender awareness, however, when measured together, a high reliability score could not be found. Exploring these three aspects further, the subscale on gender stereotyping measures reported attitudes and believes in gender biases and stereotypes, the second subscale, gender sensitivity, measures the reported willingness to take actions to combat stereotypes and biases, and the last subscale on teacher education measures teachings regarding the two previous subscales reported by the participants. This exploration may partially explain why these subscales do not fit together, since knowledge must come before actions, and teachings aid the increase in knowledge and potential actions. Additionally, the social desirability bias in, especially, the reported answers in the subscales on gender stereotypes and gender sensitivity may influence correlations as well since it remains hard to gauge whether the participants responded on their true beliefs as they may have adjusted their answers according to the perceived correct answer, which can be different for each participant. Nevertheless, patterns were found within the different subscales regarding the reported answers on questions. Firstly, participants attributed higher levels of gender stereotyping in others than they reported possessing themselves. Next, questions in

regards to intentions and beliefs were answered more frequently with agreements by the participants than gender sensitive actions were reported. A third pattern was uncovered within the teacher education subscale, where questions in regards to specific teachings recorded lower average means than questions asking about general teachings in teacher education program on topics as gender biases, stereotypes or gender research. This may indicate that the lack of these more specific teachings, such as transgender-inclusive practices, is not seen as such a great problem by the participants. Though this pattern can also indicate that the participants were simply not as aware of what should have been covered in the first place. A general pattern detected in all subscales and in the whole survey itself, was the consistency in the underlying meaning in questions within the subscales. Moreover, questions within each subscale often were of varying nature, with questions regarding the worldview of others or a personal worldview, questions regarding the intentions or beliefs in importance, questions on specific issues or broader issues, questions asked about behaviour, abilities, knowledge and more. Nevertheless, these differently phrased questions consistently fit within each subscale, attested by the high reliability recorded within the subscales and patterns of correlations, though almost no correlation was found between the subscales and individual questions across the subscales. This indicates an underlying pattern in the participants' thinking during and answering on the questionnaire which was almost distinctive according to each subscale. These multiple uncovered patterns within the survey demonstrates the complexity of studying gender awareness and the corresponding aspects associated to the topic. Another issue adding to the complexity of research into gender awareness was brought up by a participant who expressed that phrasing questions in a survey as 'one gender versus other genders' indicates a preconceived idea of gender being a spectrum rather than binary in nature. Although in context of research into gender awareness it seems unfathomable to maintain addressing gender as only male and female, this does raise an interesting conundrum for further research. Whichever way gender is addressed, ideas or biases shine through in the questioning and in the answers of participants as well. As implied by Lahelma (2011), there is no neutral or objective way to address gender awareness which increases the complexity of the topic even further.

Lastly, as mentioned in the previous section, it is difficult to generalise any conclusions, as well as a defining conclusion on the reliability, due to the limited sample, probability of a biased sample, and the inability to check validity yet in this thesis. These issues in regards to the study will be discussed henceforth in the following section.

6.2 Limits of study

A first issue when discussing the findings of this study, is the small sample of answers these findings were based on. In total only 19 students answered the survey and 3 participants were willing to be interviewed. As discussed in the methods section, this low participation rate is not necessarily due to lack of effort or limited ability to reach these participants. Moreover, multiple professors were willing to share the survey in their classes, some of which were even classes covering equality or gender and all classes numbered students around or above the total participant pool. This is not an isolated occurrence as Lahelma & Tainio (2019) remarked that only 10 percent of the students who were contacted answered a survey on equality by Knuutila (2012, as cited in Lahelma & Tainio, 2019). Therefore, it appears prudent to discuss potential barriers preventing students from answering surveys, and more particularly, surveys on gender awareness. However, before discussing potential barriers, issues with the sample must be addressed. Originally, the target group for this study were student teachers in the teacher training program at the University of Turku, who were in their third year of study or further along. However, a probability sample of this population was not possible to obtain for this study and participants were recruited through a convenience sampling by contacting professors who taught students belonging to this population of students. Initially, professors (and student organisations only focused on teacher education) were contacted who did not teach courses related to equality nor gender, therefore, the respondents resulting through this contact method where not selected based on any characteristic, but rather through convenience sampling (Rea and Parker, 2014). However, this method of participant gathering resulted in almost no response rates and the decision was made to contact professors teaching courses on equality and gender in education in order to obtain a greater amount of responses. This decision lead to a change in the participant pool, since a greater selection bias was now present in the study. However, even the participants who were not directly connected to the equality and gender in education courses may present a pre-existing bias. As Rea and Parker (2014) mentioned, a high non-response rate can infer that there is an underlying reason as to why a small fraction of students responded, which also leads to a non-response bias as the findings of the research are not necessarily representative to the wider population. This issue with generalisation is further exacerbated by the selection bias of participants already signed up for the elective courses on equality and gender, which may heighten their interest, knowledge and general bias on this subject. However, in this case,

even students choosing to study these elective courses were not very interested in participating in the study, which, as a result, reduces the overall bias of the sample.

This difficulty with obtaining a large enough participant group for this study leads to a necessary overview of potential barriers which may have led to this reluctance in answering.

Firstly, this questionnaire was sent to the participants through contact with the professors, and, since a number of these classes remained online at the time of the study, they were not presented by the research in an actual class setting. This could have reduced or even eliminated the pressure or feeling of obligation to fill in the survey. This reduced feeling of obligation was supported by the one occasion where students were asked to participate through an online presentation of the research in the beginning of their lesson, which lead to the greatest response rate.

A second issue was brought up by one professor who was extremely interested in participating with her students in this study, but was faced by the notion that no students in her class were actually interested in participating. She reported in personal communication (24th of February 2022) that students were concerned about the language of the survey, which was in English whereas their native language is Finnish. Although the students receive English lessons throughout their teaching program, they may not be familiar with terms or ideas offered and questioned in this survey on gender awareness. Therefore, for future research, it is suggested that the surveys and interviews are available to the students in their native language as well.

Thirdly, potential participants may not be willing to participate due to the nature of this topic. As mentioned by Lahelma (2011), gender awareness is a sensitive topic to include in teacher education programs, and may therefore be a difficult topic to question participants on. In essence, as Lahelma (2011) determined, questioning or addressing opinions on gender awareness that participants may possess, essentially questions the world view or personal believes of participants. Furthermore, according to Marie Carlson (2008, as cited in Lahelma, 2011) and Sikes (1991), reflecting on the world view of students or participants in general, may lead to resistance, opposition and arguments. This all is not conductive when attempting to reach participants to study this topic more in-depth. Furthermore, even when this topic does not automatically invite resistance from potential participants, they may simply not feel the need for this topic to be discussed or researched further (Lahelma & Tainio, 2019). Though

this feeling is also, according to Lahelma & Tainio (2019), connected to the issue at hand, namely that gender issues are not often enough addressed in teacher education.

Furthermore, those students that did break through the barriers and did decide to answer the survey may present a biased subgroup of the population, namely that they are more interested in the topic of gender awareness than the general population. This can result in a non-representative sample and leads to research findings that may not be generalisable to the wider population. Moreover, since so few students answered the questionnaire, this affects generalisability and reliability of the survey findings as well. Therefore, even though there are conclusions to be held, it is not possible to guarantee that the wider population of student teachers in the University of Turku feel the same way about gender issues as this small subgroup. Additionally, out of these 19 participants, only 3 were willing to discuss their opinions on gender awareness in an interview. Though these 3 students did present different opinions and went through different tracks in the teacher education program, they all felt secure enough in their worldview, were interested in this topic and felt confident enough to present their opinions on this topic as well. This results in a group of interviewed individuals that definitely do not present a representative sample for the wider population. However, these conclusion do not mean that findings should be disregarded since they did present a group of students in this population who possessed clear opinions on this topic, which should be taken into account. Additionally, the differing viewpoints and educational tracks of the interviewees may indicate that the participants in this study were generally not overly biased towards gender awareness nor that they all answered in a socially desirable manner. Furthermore, even though only a small group of students was willing to participate, this does not mean that opinions, believes and attitudes are isolated to this group of students either. As mentioned in the general discussion, there are clear trends in the findings that showcase conclusions that can be made as a result.

A last issue to discuss is the Social Desirability Bias, which was directly mentioned by an interviewee in regards to answering the survey. As discussed in a previous section, answering questions in a socially desirable way is not possible to eliminate, especially in sensitive topics (Fisher & Katz, 2000; Nederhof, 1985). Though there are possible ways to combat this bias, such as anonymizing questionnaires and allowing the participants to self-administer the survey, it is essentially never assumed that the Social Desirability Bias does not influence the answers of participants. However, some research methods can be used in combination to discover how participants act as opposed to how they report to act (Fisher & Katz, 2000;

Nederhof, 1985). This combination of research methods can also improve validity of the research and reliability, and would therefore be advisable for future research.

6.3 Implications for future research

The findings of this study do have several implications for future research, as well as implications for the teacher education program.

In regards to future research, several suggestions can be made to further explore the beliefs, attitudes and actions of (student) teachers on the topic of gender awareness. Firstly, the limited ability of surveys to gauge gender awareness or other topics in social sciences calls for a combined use of multiple research methods to properly lay out the current situation in this field of study. In particular the use of observations of current teachers, teachers in training and even textbooks could result in a clearer picture of this topic. Furthermore, combining observations with interviews would give more depth to the observed behaviours or perceptions. Similarly, surveying or interviewing the students in classrooms in regards to perceived differences in treatments or gender stereotypes would provide an interesting perspective, as the study by Younger and Warrington (1996, as cited by Beaman et al., 2006) reported that students perceived differences in treatment from teachers between different genders. Additionally, a future study could explore differences in opinions on gender stereotypes and gender sensitivity before and after an intervention, or a class on gender awareness in this case, as was attempted in this study but ultimately failed.

Next, a further exploration of the survey developed in this thesis research, testing the questionnaire with a bigger sample, could solidify any conclusions made in this study. As some differences were discovered between different genders, this should be further explored in a bigger sample as the sample in this study was too small to generate concrete conclusions. Furthermore, the survey does require more testing to ensure validity on the measuring of these subscales and gender awareness as a whole. Additionally, to ensure greater understanding of the topic and, potentially, increase the participation rate, the survey should be translated into the native language of the sample population. Furthermore, the uncovered patterns within this survey should be further explored, as in the differences in reported worldviews of the participants and the perceived worldview of others, or the reported intentions or belief in importance to act versus the occurrences of these actions, which can then be explored even further by asking why certain actions were not pursued if the participants did intend to do so. In other words, what are the barriers for (student)teachers to act according to their beliefs?

As this study revealed a lack of teachings on transgender inclusive practices or on how to support transgender and gender non-conforming students, as well as gender biases or finding resources on gender issues, this topic should be further examined. A thorough examination of curriculum and teachings on the topic of gender issues within the teacher education program should be warranted, as well as an exploration of implicit beliefs on gender touched on in the teacher education courses. Thoughts on what should be included in the teacher education programs, based on findings of this study, have been explored in an earlier section of this discussion chapter.

Furthermore, a deeper exploration of transgender and gender non-conforming issues involving students, teachers-to-be and teachers on all educational levels seems necessary to identify what has been included or changed in schools since the entrance of the new Finnish national core curriculum in 2014. As future teachers, such as physical education teachers, still display a lack of awareness of issues transgender people face, it is indicative of a greater issue of the lack of teachings on this topic. This last statement has also been corroborated by one of the participants as a reason for answering this survey as they have a transgender family member who faced a lot of issues at their school involving the recognition of their gender identity. Therefore, an exploration of beliefs, attitudes, teachings, knowledge, rules or laws, and actions of teachers in regards to (trans)gender issues and transgender-inclusive practices is warranted.

7 Conclusion

The complexity of research on gender awareness has certainly been present in this research as well. Unavoidably, underlying biases or preconceived notions shine through in the questioning, whether in a survey or in interviews. Additionally, although gender stereotypes, gender sensitivity and gender in teacher education are all part of gender awareness, those three aspects (subscales) did not correlate with each other in the case of this study. Moreover, different types of questions with varying meanings shining through did correlate within each aspect but not with other questions in the other subscales, which was confirmed by the high reliabilities attributed to the individual subscales and the low reliability calculated on the whole survey on gender awareness. Furthermore, contacted student teachers were not particularly eager to participate in this study. One suggestion offered in connection to this lack of willing participants, was the existence of the language barrier. However, as Lahelma & Tainio (2019) experienced a similar scenario in a referenced study where only 10% of students participated, this is a reoccurring pattern within the field of research into gender in education, and thus, it is impossible to fully blame the language barrier for the limited response. The last aspects giving credit to the complexity of this topic were the underlying patterns that could be detected in the answers on the survey. In general, participants perceived the worldview of others to be different from their own as gender stereotypical thinking was reported less when addressing the personal worldview of the participants whereas gender stereotypes were reported to be perceived as more present in other people. Additionally, intentions and beliefs in the importance of actions in regards to gender sensitivity was more often agreed with by the participants than actions taken in regards to gender sensitivity were reported. These patterns were similarly visible with the lower scoring participants as with the other, higher scoring, participants since the reliabilities measured through Cohen's alpha of these subscales scored above 0.90 for each subscales. Therefore, though the social desirability bias when responding to the questionnaire may partially explain these patterns, it is not the full explanation and more exploration into possible explanations is needed. The complexity of gender awareness, combined with the sensitive nature of this topic, which was even found within this study, indicates the need for more research and exploration into gender awareness in general and in education.

In summary, this study discovered several important findings in regards to gender awareness in student teachers at the university of Turku. In general, most participants reported low

beliefs in gender biases or stereotypes towards both students and teachers, and from their point of view or the perceived worldview of others. Though, participants did, in general, attribute higher levels of gender stereotyping or biases to others than they reported to possess themselves. However, the highest scores were measured in regards to behaviour of boys in the classroom, which is in line with the perceptions regarding behaviour documented by Beaman et al. (2006) and Lahelma (2014). Furthermore, the participants in this study revealed a belief that male teachers were more appreciated in schools and by parents, which was previously reported by Lahelma (2011). Lastly, student teachers portrayed high levels of willingness to use the name and pronouns preferred by students, even when this would be different on paper. However, stereotypical and biased ways of thinking in regards to transgender students was still present when exploring this topic on a deeper level in the interviews. This may indicate that the questions in the survey possess a social desirability bias that is often especially present in sensitive topics answered in surveys or even through other research methods (Nederhof, 1985). Secondly, this reported willingness of teachers to aid students and their gender non-conformity was extended into their willingness to act in a gender sensitive manner in the classroom. The vast majority of student teachers in this study believed in the importance of acting against gender biases or stereotypes in general or when parents may present biases in regards to possible fields of study or occupational settings. Most participants also attempt to use gender-neutral language in their classrooms and are willing to assist with the social transitioning of transgender students. However, it is important to note that the lowest scores in this subscale were recorded in the selection of texts/books/media that deal with gender-nonconformity, these lower scores were all recorded in connection to an action rather than an intention to act. This lower score can be connected to the lack of teaching the participants report receiving in regards to gender, and especially in regards to finding resources and supporting transgender students, which was reported by almost 90% of participants. This lack of teachings was further elaborated by the participants in the interviews, of which only one was enrolled in the only elective course on gender in education offered to the students in the teacher education program. Apart from this one course, the only explicit teachings mentioned by the participants were discussions on the use of gender-neutral language and the division of boys and girls in regards to physical education at schools. Implicitly, the majority of the students agreed that teachings on gender were mostly conducted in stereotypical and heteronormative ways, which was illustrated by one interviewee's recollection of their class on health education where only the male and female bodies were discussed in connection to heterosexuality.

Finally, the biggest issue uncovered in this thesis was the distinct lack of teachings on either the basics of gender diversity, gender equality or gender sensitivity and the lack of teachings on deeper gender issues such as those faced by transgender and gender non-conforming students. Although the students indicated this lack of teachings on these topics included in their courses, this was not necessarily perceived as such an issue initially. Nevertheless, the participants interviewed in this research explicitly mentioned the desire for more knowledge in order to adequately support these students. They all agreed that the inclusion of more case studies and conversations with students, teachers and parents in regards to knowledge on issues faced and good practices would be the ideal teaching method. As shown in the study on gender awareness by Naskali & Kari (2020) where a group of students, starting with a heteronormative outlook on gender issues, showed a willingness to change and presented a new understanding after participating in a mandatory course on gendered practices in education at a Finnish university, the inclusion of a mandatory course on gender in education can only prove to be beneficial for an important group of students. Furthermore, the value of these teachings is not insignificant as Ullman (2017) demonstrated that higher levels of teacher positivity towards gender issues incites a higher level of school connectivity, is connected to higher educational outcomes and positively influences the mental health of gender-diverse and non-heterosexual students.

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Appendices

Appendix 1 Initial Questionnaire

Introduction	
Hello, My name is Maxime and I am a student in the Education and Learning Master's Degree Programme at the University of Turku. For my Master's Thesis, I am interested in behaviours and beliefs around gender awareness, sensitivity and stereotypes by student teachers. I would really appreciate it if you would be willing to participate in this survey! Answering the questions will only take around 15 minutes of your time and will help me tremendously. Consent part: Please read thoroughly through the privacy notice by clicking the link below. [Inserted link to privacy notice, see appendix 3] The purpose of this study is to map gender awareness, sensitivity and stereotypes in student teachers towards students and other teachers. If you have further questions, please do not hesitate to contact [inserted university e-mail address]. By clicking "I consent" you agree to the use of your personal data, meaning your gender and your beliefs, solely for the purpose of this study. I consent to use of data, as mentioned in the privacy notice, for the purpose of this study	
Personal information	

Gender	Female/male/other/prefer not to say
Gender stereotyping **I believe that….**	**1 – 5** **1: strongly disagree** **2: disagree** **3: Neither agree nor disagree** **4: agree** **5: strongly agree**
1. Our schools and classrooms are designed for girls rather than other genders.	
2. In the Finnish school system it is harder for boys to succeed.	
3. Girls work harder in school than other genders.	
4. Boys are more likely to be talented in school subjects than other genders.	
5. Boys are harder to handle in the classroom.	
6. Girls pay more attention in the classroom.	
7. Boys find it more difficult to sit still in the classroom.	
8. Boys are more likely to be better in science and mathematics.	
9. Girls are more likely to be better in languages and craft.	
10. Differences between different genders are greater than differences within one gender.	
11. Boys are more easily distracted than other genders during class activities.	
12. Boys are more likely to be interested in science, physical education and maths.	
13. Boys have more energy they need to release than other genders in school.	
14. Boys have it harder in school than other genders.	
15. Girls follow the rules set by the teacher better than other genders.	
16. Boys are punished more often by teachers.	
17. If boys have bad grades, it is because they are lazy and did not study.	

18. Girls need to have good grades to have a good career, more than other genders .	
19. Boys are better at working with their hands than other genders.	
20. Girls with bad grades are just not as good at the subject as other genders.	
21. Boys learn better by doing, more than other genders.	
22. Boys have less patience than other genders during classroom activities.	
23. Boys need to be actively encouraged to do their schoolwork more often than other genders in the classroom.	
24. Girls work more precisely in the classroom than other genders.	
Gender sensitivity (opposite value than before)	**0 – 5** **1: strongly disagree** **2: disagree** **3: Neither agree nor disagree** **4: agree** **5: strongly agree** **0: not applicable**
1. I find it important to check resources (books, handouts, etc) for gender biases or stereotyping	
2. I check the language of resources and teachings to ensure a balance of examples of all genders.	
3. I check the language of textbooks (or handouts) to ensure there is no gender stereotyping or bias.	
4. I intentionally select texts/books/media that deal with gender-nonconforming subjects.	
5. I draw attention to equal accomplishments from all genders (as in famous figures or contributions to science for example.).	
6. When inviting people to present at school, I will ensure equal representation of all genders.	
7. When inviting people to present at school, I will invite people in typically gender non-conforming (or non-stereotypical) fields of work, such as male nurses.	
8. I think it is important to address gender biases parents may have towards future careers/studies for their child.	

9. I believe actively acting against gender stereotypes and biases is important as a teacher.	
10. I address gender stereotyping in resources/media with the children.	
Teachers	**0 – 5** **1: strongly disagree** **2: disagree** **3: Neither agree nor disagree** **4: agree** **5: strongly agree** **0: Not applicable**
1. I do not believe there are many differences between teachers based on gender.	
2. I believe that male teachers are more technical, efficient and objective.	
3. I believe there should be an equal amount of all genders of teachers in each school.	
4. I believe that female teachers are more nurturing, empathic and caring.	
5. I believe that male teachers carry more authority and respect.	
6. I believe that women are better early childhood educators, kindergarten teachers and primary school teachers.	
7. I believe that male teachers are better at teaching sciences such as math, physics and chemistry.	
8. I believe that it is worrisome that there are more female than male teachers.	
9. I feel that male teachers have it easier to find jobs than other genders.	
10. I feel that male teachers are more appreciated in schools than other genders.	
11. I feel that male students are treated more favourably than other students in the teacher education studies.	
12. I feel that male teachers are more respected by others, such as parents.	

Teachings in Teacher education	**0 – 5** **1: strongly disagree** **2: disagree** **3: Neither agree nor disagree** **4: agree** **5: strongly agree**
1. I have been adequately taught about gender biases in my teacher education	
2. I feel that there has been paid enough attention to gender stereotyping in my teacher education	
3. I have sufficiently been taught ways to work on gender stereotyping in classrooms	
4. In my teacher training courses I think I have studied enough gender research.	
5. In my teacher training studies I have had enough opportunities to take gender courses.	
6. During my teacher training studies there has been enough attention paid to the requirements of the Act on Equality between Women and Men (1986/2005)	
7. I have been taught sufficient ways to spot gender stereotyping in resources or other media.	
8. I have been taught adequately where to look for gender non-conforming texts/books/media.	
9. When discussing gender and sexuality in courses, they were mostly carried out in gender stereotyping and heteronormative ways.	
Gender non-conformity	**1 – 5** **1: strongly disagree** **2: disagree** **3: Neither agree nor disagree** **4: agree**

	5: strongly agree
1. I have been taught how to support transgender children in my classes.	
2. I believe that children should be addressed by the pronouns and name they want to be addressed by, even if it is different than it is on paper.	
3. I think it is important to ask children for their preferred names and pronouns.	
4. I would be willing to assist with the social transitioning of transgender children at school.	
5. I have been taught how to support transgender and non-binary children.	
6. I have been taught (trans)gender-inclusive practices.	
7. I try to use gender-neutral language in the classroom.	
8. I think that there is no difference between working with a transgender or a cisgender teacher.	
9. I think transgender teachers would be treated differently by others, such as parents, other teachers and children.	
Supplementary questions	
Do you wish to add anything?	
For further follow-up questions about the survey, I want to invite you to participate in a short and relaxed interview. The interview will dive a bit deeper in the questions asked in this survey and does not require any preparation. The interview can be according to your preferences and schedule through zoom, in person or written via e-mail as well if you desire. Please be assured that your data will be protected and will only be used for the purpose of this research, no names will be mentioned in the research paper. If you would be willing to help me out by participating in an interview, please leave your e-mail address below.	

Appendix 2 Revised Questionnaire

Gender	Female/male/other/prefer not to say
Gender stereotyping **I believe that….**	**1 – 5** **1: strongly disagree** **2: disagree** **3: Neither agree nor disagree** **4: agree** **5: strongly agree**
Girls work harder in school than other genders.	
Boys are more often talented in school subjects than other genders.	
Boys are harder to handle in the classroom.	
Girls pay more attention in the classroom.	
Boys find it more difficult to sit still in the classroom.	
Boys are more likely to be better in science and mathematics.	
Girls are more likely to be better in languages and craft.	
Differences between different genders are greater than differences within one gender.	
Boys are more easily distracted than other genders during class activities.	
Boys are more likely to be interested in science, physical education and maths.	
Boys have more energy they need to release than other genders in school.	
Boys have it harder in school than other genders.	
Girls follow the rules set by the teacher better than other genders.	
Boys are better at working with their hands than other genders.	
Boys learn better by doing, more than other genders.	
Boys have less patience than other genders during classroom activities.	
Boys need to be actively encouraged to do their schoolwork more often than other genders in the classroom.	
Girls work more precisely in the classroom than other genders.	

I do not believe there are many differences between teachers based on gender.	Reverse code
I believe that male teachers are more technical, efficient and objective.	
I believe that female teachers are more nurturing, empathic and caring.	
I believe that male teachers carry more authority and respect.	
I believe that women are better early childhood educators, kindergarten teachers and primary school teachers.	
I believe that male teachers are better at teaching sciences such as math, physics and chemistry.	
I feel that male teachers have it easier to find jobs than other genders.	
I feel that male teachers are more appreciated in schools than other genders.	
I feel that male teachers are more respected by others, such as parents.	
I believe that children should be addressed by the pronouns and name they want to be addressed by, even if it is different than it is on paper.	Reverse code
I think that there is no difference between working with a transgender or a cisgender teacher.	Reverse code
Gender sensitivity	**0 – 5** **1: strongly disagree** **2: disagree** **3: Neither agree nor disagree** **4: agree** **5: strongly agree** **(0: not applicable)**
I find it important to check resources (books, handouts, etc) for gender biases or stereotyping	
I check the language of resources and teachings to ensure a balance of examples of all genders.	
I check the language of textbooks (or handouts) to ensure there is no gender stereotyping or bias.	

I intentionally select texts/books/media that deal with gender-nonconforming subjects.	
I draw attention to equal accomplishments from all genders (as in famous figures or contributions to science for example.).	
When inviting people to present at school, I intend to ensure equal representation of all genders.	
When inviting people to present at school, I intend to invite people in typically gender non-conforming (or non-stereotypical) fields of work, such as male nurses.	
I think it is important to address gender biases parents may have towards future careers/studies for their child.	
I believe actively acting against gender stereotypes and biases is important as a teacher.	
I address gender stereotyping in resources/media with the children.	
I am willing to assist with the social transitioning of transgender children at school.	
I try to use gender-neutral language in the classroom.	
Teachings in Teacher education	**0 – 5** **1: strongly disagree** **2: disagree** **3: Neither agree nor disagree** **4: agree** **5: strongly agree**
I have been adequately taught about gender biases in my teacher education	
I feel that there has been paid enough attention to gender stereotyping in my teacher education	
I have sufficiently been taught ways to work on gender stereotyping in classrooms	
In my teacher training courses I think I have studied enough gender research.	
In my teacher training studies I have had enough opportunities to take gender courses.	

During my teacher training studies there has been enough attention paid to the requirements of the Act on Equality between Women and Men (1986/2005)	
I have been taught sufficient ways to spot gender stereotyping in resources or other media.	
I have been taught adequately where to look for gender non-conforming texts/books/media.	
I have been taught how to support transgender and non-binary children.	
I have been taught (trans)gender-inclusive practices.	
I have been taught how to support transgender children in my classes.	
Supplementary questions	
Do you wish to add anything?	

Appendix 3 Privacy notice

Privacy notice

1. Name of the register:
Student teacher's beliefs on gender awareness, sensitivity and stereotypes.

2. Data Controller:
Maxime Casteleyn, maxime.m.casteleyn@utu.fi

3. Contact information of the responsible person and the Data Protection Officer:
Maxime Casteleyn, maxime.m.casteleyn@utu.fi

4. **Purpose and legal basis for the processing of personal data:**
The research collects students' views, beliefs and intended behaviours on gender awareness, gender sensitivity and gender stereotypes in the field of education, both in the classroom in the function as a student teacher and as the student in teacher education. Voluntarily given e-mail addresses in the survey will be used to contact the students for the interview portion of the study. Personal information given in the interview will be pseudonymized and e-mail addresses deleted as soon as the thesis is completed

The legal basis for processing personal data in the Article 6 of the EU General Data Protection Regulation is:

☐ Processing is necessary for scientific research (public interest, Point 1a of the Article 6)

☒ Data subject has given their consent to processing personal data (consent, Point 1e of the Article 6)

☐ Other, what_____

5. Processed personal data:
The following information of the data subjects is stored in the register:
Email address (voluntary), gender, beliefs around gender awareness and sensitivity

6. Recipients and recipient groups of personal data:
The data will not be transferred or disclosed to parties outside the research group.

7. Information on transferring data to third countries:
Personal data will not be disclosed to parties outside the EU or the European Economic Area.

8. Retention period of personal data or criteria for its determination:
The answers on the survey will be stored until the end of the study for a maximum of 5 years, personal data collected will be disposed of securely. Simultaneously, the research will be anonymised by erasing identifiable personal data. E-mail addresses will be collected and disposed of after contact with person has been made. Interview recordings will be stored on the secure university storage and will be accessible only to the data controller and the thesis supervisor. These will be deleted at the moment of completing the theses. Furthermore, interviews will be transcribed and pseudonymized, only the transcripts will be used as data for the research. Transcripts will be send to the interviewee to ensure transcribing was done accurately. The transcripts will be stored securely for a maximum of

5 years. Simultaneously, the research will be pseudonymized by disconnecting identifiable personal data from the responses.

9. Rights of the data subject:
The data subject has the right to access their personal data retained by the the Data Controller, the right to rectification or erasure of data, and the right to restrict or object the processing of data. The right to erasure is not applied in scientific or historic research purposes in so far as the right to erasure is likely to render impossible or seriously impair the achievement of the objectives of that processing.

The realisation of the right to erasure is assessed on a case-by-case basis.

The data subject has the right to lodge a complaint with the supervisory authority.

10. Information on the source of personal data:
In order to invite participants to take part in the survey, contact will be made with university professors in order to share the survey with their classes. The other data is collected directly from those who participate in the survey for the study

11. Information on the existence of automatic decision-making, including profiling:
The data will not be used for automatic decision-making or profiling.

Appendix 4 Invitation to interview

Dear student,

A few weeks ago you answered a questionnaire 'Gender awareness in student teachers'. Many thanks for that! Your contribution really helped further insight on this topic.
At that time, you left your e-mail address at the end of the survey. I am coming back to you on that.
I sincerely want to invite you to a short, informal interview that will take about 30-45 minutes.
The interview can be done both online through Zoom or in-person in a place of convenience, such as on campus. The interview will be held in English. If you agree to participate, I will make a recording of the interview for further analyse. The recorded interview will be pseudonymized and stored securely solely accessible by me and my thesis supervisor.
The transcribed interview will be sent to you for confirmation, furthermore, any quotes used in the thesis from this transcription will be first sent to you for approval. At any point, you have the right to decline, disagree or change any part of the interview, transcription or used quotes. The collected data will be used for research purposes only.

Hereby is the Doodle link wherein you can choose a time that works best for you. After choosing a time and date, I will contact you again with a confirmation and to decide upon an online or in-person interview.
If no dates or times work out, please contact me to work out a time and place that would suit you better.

[Doodle link inserted]

If you have any questions, please do not hesitate to contact me again!
Best regards,
Maxime Casteleyn
EdLearn program
University of Turku

Appendix 5 Coding scheme transcribed interviews

Coding scheme		
1. Prior to questionnaire	a. Incentive for answering	
	b. Possible barriers	
2. Regarding questionnaire	a. Phrasing of questions	
	b. Context of answering	
3. Teacher education	a. Courses on gender	
	b. Gender discussed in other courses	
	c. Thoughts on what should be included in courses	
4. Gender stereotyping	a. Personal experiences	
	b. Teacher stereotypes	
5. Teachers and gender		