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Gender Stereotypes in UK Primary Schools: Student and Teacher Perceptions

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Abstract

Gender stereotypes are often an unconscious notion, which can unjustly confine individuals' pathways to that of those deemed acceptable in society. Therefore, this study aimed to explore whether such ideals are shown by primary school students' and their teachers. Results showed that gender stereotypes were present, with both students and teachers expressing this. Students indicated that all six professions explored had large stereotypes. Teachers were largely in agreement, noting that although they felt able to challenge such ideals, many of them had no formal training throughout their teaching programme. The results offer a rationale for more initial teacher training programmes to explore the effects of gender stereotypes, preparing teachers to challenge these early on whilst children are developing their long-term beliefs, to avoid unjust bias.

Keywords: gender stereotypes, primary schools, perceptions, bias, UK

Gender Stereotypes in Primary Schools: Student and Teacher Perceptions

Introduction

A gender stereotype can be defined as a generalised view around the attributes, characteristics and roles that ought to be performed by women and men (United Nations Human Rights, 2020). This pertinent area is an arguably overlooked gap in research, which tends to focus on the views of older school individuals. As Alan et al. (2018) highlighted, primary school is a crucial period for development and the production of one's long-term outcomes and career beliefs. Therefore, any influences and stereotyping behaviour can be indelible. Kollmayer et al. (2016) supported this, expressing that children can show gender typical behaviour and interests from an incredibly young age. This provides rationale for why the years 4-5 (age 8-10) were focused on. This research explored whether such a notion is shown by primary school students and their teachers.

This chosen area of research will not only explore the prevalence of gender stereotyping, but focus on how specific professions are viewed under stereotypical lights which may confine one's pathways and preconceptions around the roles they can undertake. By choosing to focus on both student and teacher perceptions, it allows ideas to be linked, which could act to suggest effective interventions for future practitioners.

It is important to note that not everyone categorises themselves as male or female, as gender is viewed as a social construction (United Nations Human Rights, 2020). Therefore, although the literature discussed focuses on these terms explicitly, any responses which referred to other gender identities were welcomed. This was done through ensuring the use of neutral phrasing, such as "gender identity" in all tasks.

Gender Differences in Education

Past research has shown the divide in subject selection and career paths undertaken between genders. Kuhn and Wolter (2020) highlighted this, suggesting that occupational

gender segregation is persistent and remains at particularly elevated levels, although the exact reasons why are not fully explained. They also reported that aspects such as cognitive requirements of a job and the nature of certain occupations can tilt to favour one gender over another (Kuhn & Wolter, 2020).

Moreover, an analysis by Skelton et al. (2007) found that females appear to progress more on average than males do in English, and more females pursue the subject. One specific participant noted that English was more suited to females, and therefore males should not enjoy it (Skelton et al., 2007). This stereotypical gender perception highlights how children's career paths can be affected, and therefore poses an area for further investigation. This is noted by Selimbegovic et al. (2019) where their findings showed that stereotyped beliefs about Science, Technology, Engineering and Mathematics (STEM) subjects and professions linked to stereotype-consistent careers and gender gaps.

Common Gender Stereotypes Regarding Professions

Stereotypical preconceptions of various careers, such as that of a nurse and scientist, have been recognized by many. Butler (1999) notes that gender is performative, as gender identity is based on gendered acts - meaning individuals learn to behave in masculine and/ or feminine ways. Often, these gender stereotypical ideals are ingrained into us, acting unconsciously to change our perceptions of specific roles and abilities, shaping students' self-concepts (Retelsdorf et al., 2015). Nieva and Gutek (1981) note the idea of the gender-role spillover, where gender-based roles are carried over into the workplace, often leading to implications for both men and women, such as stereotyped attributes and dominated jobs. This is argued to be because (1) gender is a salient social characteristics, (2) it influences many domains of life, and (3) individuals interact with others based on ways which are congruent with gender roles (Gutek & Cohen, 1987). One example of this is the role of women in commercial aviation, which has been stereotypically forecasted through social

media and advertisement, leaving women considerably underrepresented (Ferla & Graham, 2019; Ryanair, 2016).

Hamilton (2010) noted that out of the 700,000 certified pilots by the Federal Aviation Administration, only 6% of these are female. Germain et al. (2012) supported this, highlighting how women who work in traditionally male fields face gender barriers, especially in aviation training. Their results foreground how both gender stereotypes and misogyny divides the workforce, with women seen as weaker, more emotional and less suited to the role (Germain et al., 2012). This, therefore, leads to scepticism around a woman's competence in such roles which have been gendered as male dominated. As Germain et al. (2012) highlighted, this is similar in the police-force, where women appear to struggle gaining acceptance from their colleagues (Carlan & McMullan, 2009). However, this article also highlighted the unique expertise women bring to the force, with one trainer noting women are better at multitasking. This is again, a common stereotype and perceived difference between males and females.

This is in keeping with the stereotypical perceptions of a nurse, where the nature of the role—being that of a caring individual—is wrongly associated with solely feminine qualities (Loughrey, 2008). Subsequently leading to a disproportionate ratio of female nurses compared to male, which is exacerbated in Ireland with a ratio of 20:1 (Loughrey, 2008). Kiekkas et al. (2016) investigated this further, exploring gender discrimination against male nursing students in a seemingly female-dominated profession. Results highlighted that gender bias appeared to favour female students, especially in written examination evaluations (Kiekkas et al., 2016). Females subsequently achieved higher degrees overall, however it cannot be proven that this resulted only from bias in the workforce. In terms of reliability, this literature was only conducted in one nursing department, meaning the generalisability of results are restricted (Kiekkas et al., 2016). Despite this, these results raise major

implications around the effects of gender stereotyping, which may leave males feeling challenged by the stereotypical ideals and lack of gender diversity in this field (Kiekkas et al., 2016).

Moreover, a more well-known stereotype is the view of a scientist. This idea has been explored extensively through activities requiring children to draw a scientist (Finson, 2002). Here, it was noted that often a scientist is assumed to be a Caucasian male, who wears a white laboratory coat, has crazy hair and glasses (Finson, 2002). This is argued to affect the likelihood of females selecting science as a subject, and as a subsequent career. Finson (2002) continues, noting that educational practitioners have a responsibility to acknowledge this and act to reduce it through various means. This could be attempted through showing students media which depicts scientists in gender-neutral ways, and if possible, allowing them to interact with female scientists to forecast diversity (Finson, 2002). Leading on from this, Gray and Leith (2004) noted that boys seem to dominate in scientific practical studies, whilst girls take a more passive role. However, 75% of teachers did not believe boys enjoyed scientific experiments more than girls (Gray & Leith, 2004), highlighting discrepancies in subject undertaking, student perceptions, and teacher viewpoints. This emphasises the need for further investigation in this field, and therefore these specific ideas have been explored in this research, observing whether such findings are replicated.

Teacher Viewpoints

As mentioned, this study explored the perceptions of teachers as well as their students, as much literature outlines the responsibility they possess regarding this issue. Gray and Leith (2004) examined the views of teachers and their perceptions of gender equality in the classroom, with results suggesting that few recalled gender issues being part of their initial teacher training programme (Gray & Leith, 2004). However, teachers acknowledged they had some responsibility to challenge stereotypes and the issue of male underachievement was

something they were aware of. Teachers admitted they perpetuated stereotypes, with one noting they would engage in language such as “I need two strong boys to give me a hand” (Gray & Leith, 2004, p.14). Through analysis took place throughout this literature, however Gray and Leith (2004) note that almost 100% of teacher participants in years 3 were female, which although forecasts the gender imbalance in this profession, decreases the generalisability of results. Future research should look at dealing with this persistent gender bias in viewpoints.

Gray and Leith (2004) stated that the curriculum is perceived to have failed with regards to avoiding gender stereotyping, by not offering teachers proper guidelines about how to address such issues. This contrasts with the Swedish curriculum, which ensures education and gender equality are a basic right and a pedagogical issue (Gray & Leith, 2004).

Kollmayer et al. (2016) highlights how crucial teachers are with regards to denying gender stereotypes in education. They suggest that teachers need to be empowered to educate all fairly and provide role models in materials for boys and girls that promote equal opportunities (Kollmayer et al, 2016).

Influences on Stereotypical Gender Beliefs

Alan et al. (2018) investigated the impacts of teachers’ stereotypical beliefs on academic achievement, finding that when they possessed traditional beliefs around gender roles, female students’ achievement was negatively affected. They continued, suggesting teachers transmit their gender beliefs onto students, which in turn affects their academic performance. This is further supported by Terrier (2016) stating that teachers' gender stereotypical beliefs can explain the gender gap seen in education, with females choosing less scientific subjects, and males falling behind females at school in general (Terrier, 2016). This poses a separate debate around why individuals choose the career paths they do – arguing

whether it is because they are better at it, or in fact due to being influenced by those around them.

As highlighted, Finson (2002) noted the stereotypical perceptions of a scientist, and how this can affect students' subject selection. Farland-Smith et al. (2017) found similar, whilst analysing images in books, with a particular focus on the depiction of scientists. They note that in 2015 and 2016 over 70% of images in these books were male, which may add to children's perceptions of a scientist's identity (Farland-Smith et al., 2017). This is further supported by the findings of Damigella and Licciardello (2014), noting that books reproduced gender stereotypes such as women being caring and weak, whilst men were strong and capable (Damigella & Licciardello, 2014). However, one limitation of this literature is that only books with human characters were used. Meaning, cartoon depictions of other species which were gendered were not considered, which may affect the reliability and generalisability of results. Future research could explore whether the depiction of all individuals in books (whether animals, fictional beings, etc.) impact young children's perceptions of gender stereotypes, as much media they are exposed to will incorporate these.

This study

As highlighted above, there is a variety of research regarding gender stereotypes and the effects on individuals. However, much literature focuses on older individuals, solely the views of teachers, and the singular effects on academic attainment. As a result, the views of younger children are arguably underrepresented, and the prevalence of the issue is not always fully explored. Despite the effects on achievement remaining crucial, this research took a more holistic approach, where the impacts on careers individuals deem suitable for specific genders are explored. Therefore, aiming to add clarity regarding the frequency of gender stereotyping in primary school settings, through comparing the viewpoints of students and their teachers. Moreover, much of the above literature focuses on this issue from a global

standpoint, collecting data from different countries across the globe. Whilst this is incredibly insightful, this project focuses on this issue in a typical English school. Building on previous research, this study investigated whether gender stereotypes are shown by primary school students and their teachers, focusing on six commonly stereotyped professions which past literature has helped inform.

This project was underpinned by the qualitative approach, which was selected due to the study's explorative nature, with the aim to explore the perceptions of gender stereotypes, and the prevalence in the selected school (Cohen et al., 2018). Therefore, in order to best compare student and teacher perceptions with one another, and to provide a better understanding of the participants' perspectives, the data are interpreted in a qualitative way.

Methodology

Participants

Utilising convenience sampling, several schools in the midland area were approached to ask for their participation, which allowed the recruitment of participants who were from the same federated school. Schools were selected largely due to accessibility—as it was intended the methods would take place in person before Covid-19 restrictions came to light. Moreover, it was important that the schools participating in the study would provide a representative sample for this project, and therefore only those which were public and mixed-sex were contacted. The students were in years 4-5, which prior research informed, highlighting the potential susceptibility of this age range to stereotypical beliefs (Alan et al., 2018). Covid-19 complications resulted in a smaller participant group than intended, a total of 29 individuals completed the project, which consisted of 16 students and 13 teachers. Due to time constraint and further lockdown measures, we were not able to recruit more participants.

Despite the target group being very specific, data was attempted to be collected from a gender representative sample, which Cohen et al. (2018) highlighted is incredibly important in research, to avoid over-generalisation and bias. It is important to note that a higher number of female teachers answered the questionnaire, however, when put into perspective with the teaching population, it forecasts the gender-bias in teaching as a profession in the UK (Skelton, 2003). Overall, despite recruiting a smaller participant group than first intended, due to a national lockdown, the study features which could be controlled were optimised, such as reliability of measurement and theoretically strong indicators.

Procedure

Before the research began, institutional ethical approval was obtained, and ethical complications were thoroughly considered, ensuring safety, respect, beneficence, and justice to all participants. Every individual received an information sheet, with students receiving one tailored to their age. All were aware that participation was voluntary, and they would remain anonymous throughout. A short questionnaire was then distributed to the teachers, which consisted of Likert-scale answers and multiple-choice questions (Appendix 1). This way of structuring the questionnaire allowed sensitivity and differentiation in responses, whilst generating numerical data (Cohen et al., 2018).

The students also completed a short task with the first author via the online platform Zoom (Appendix 2). As the study took place during a national lockdown, face-to-face interaction was not possible. This task required them to listen to a short story where they came across various professions, such as a nurse and scientist. Students were then asked to note the gender identity they imagined for these characters, and any other distinguishable features (such as the hair colour or clothing). Their age was considered throughout, and tables were designed for the students to use when noting their responses, which the teacher distributed, who remained present for safeguarding purposes.

Data analysis

Analysis was completed in separate sections, which included breaking the responses down, inputting numerical data into tables, consolidating and reducing responses, and using thematic coding. This allowed patterns in beliefs to be shown, highlighting any discrepancies. The data driven inductive coding method was used whilst analysing, utilising previous literature to compare with the results and help draw conclusions (Fereday & Muir-Cochrane, 2006). Much of the analysis was completed by graphing the data, in order to allow comparison between student and teacher perceptions. However, due to the use of the qualitative approach, thematic coding played a crucial role in this analysis. Students' ideas were grouped into recurrent themes, noting not only how many agreed with such notions, but the language used throughout. Although this method proved time-consuming, it allowed for richer analysis to take place, and crucial phrasing by the students regarding stereotypes to be highlighted - which proved particularly interesting.

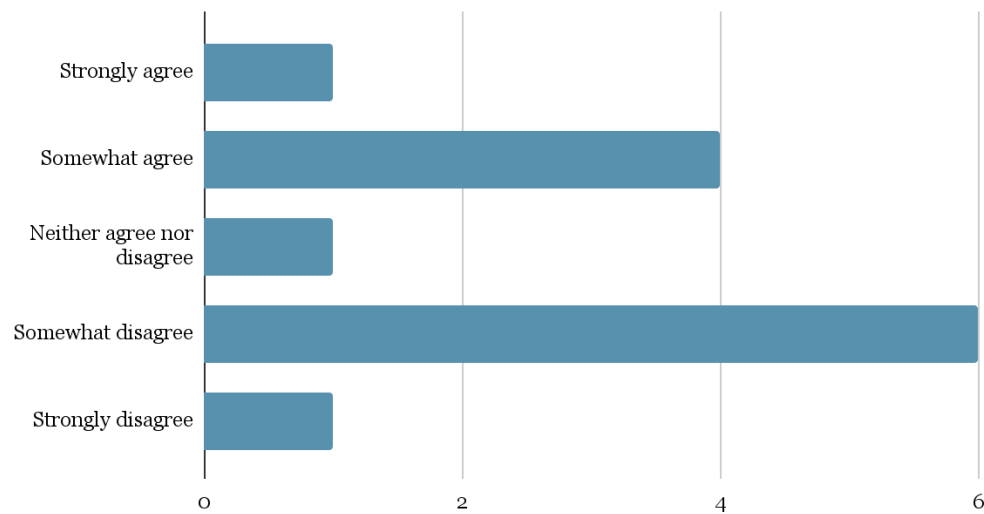
Findings

Below are the results, split into separate sections with reference to the task completed. First, the results of the teachers' questionnaire are presented. Secondly, the results for the students' first task regarding the gender they imagined each profession. Lastly, a thematic analysis of the 3 most pertinent themes presented in the student task, which asked individuals to note any other distinguishable features they imagined for the professions encountered in the story.

Teacher responses

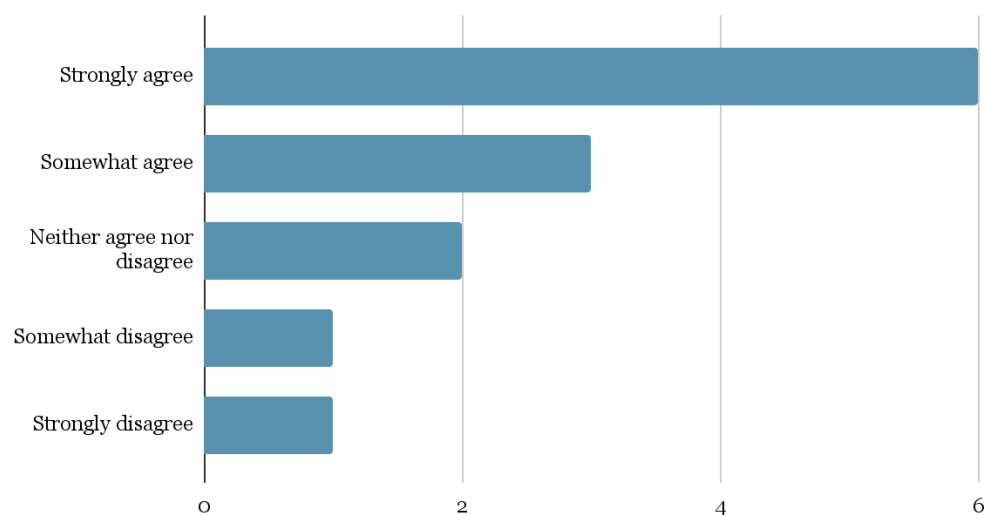
Below are the results for each of the 12 questions. Of the 13 responses, 3 identified as male and 10 as female. These results will be further expanded on, with reference to previous literature and personal interpretation in the discussion section of this paper.

Figure 1. To what extent do you agree with this statement: Gender stereotypes are not an issue at primary school level.



Answers appeared split, with slightly more individuals ($n=7$) reporting that gender stereotyping is an issue at primary school level (somewhat disagree = 6 and strongly disagree = 1). This highlights that many teachers acknowledge gender stereotypes were present at this young age.

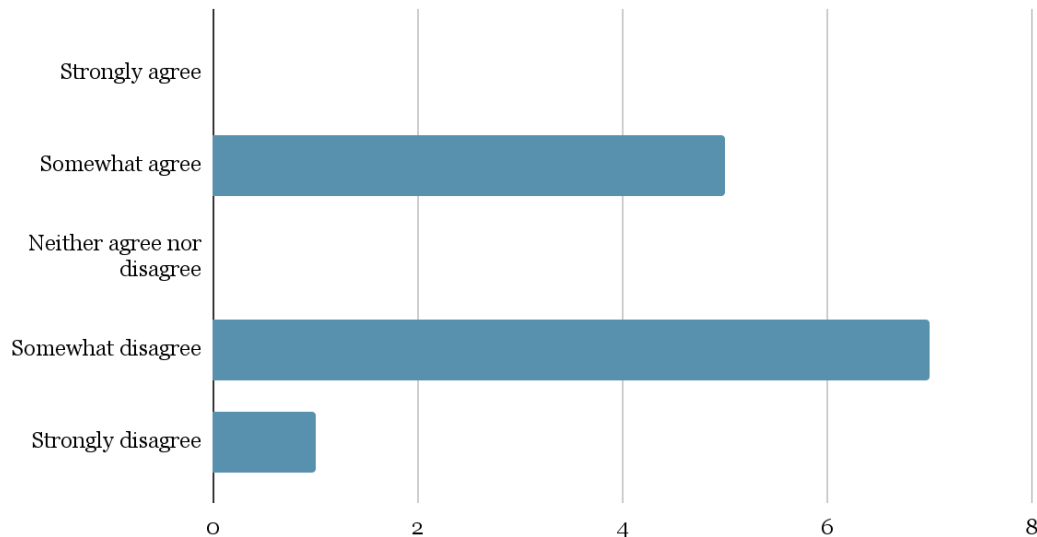
Figure 2. To what extent do you agree with this statement: Primary school is crucial in the development of gender stereotypes.



Majority of participants ($n=9$) agreed (whether somewhat or strongly) that primary school was crucial in the development of gender stereotypes. This suggests that teachers were aware

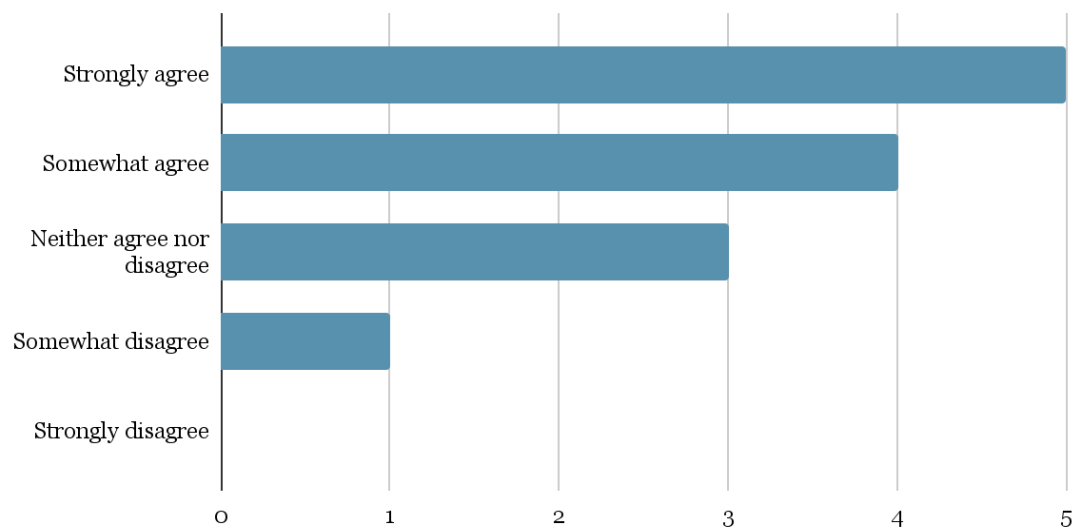
of how responsive primary school students can be with reference to their development of gender stereotypical viewpoints.

Figure 3. To what extent do you agree with this statement: Individuals in primary school are not aware of gender stereotypes.



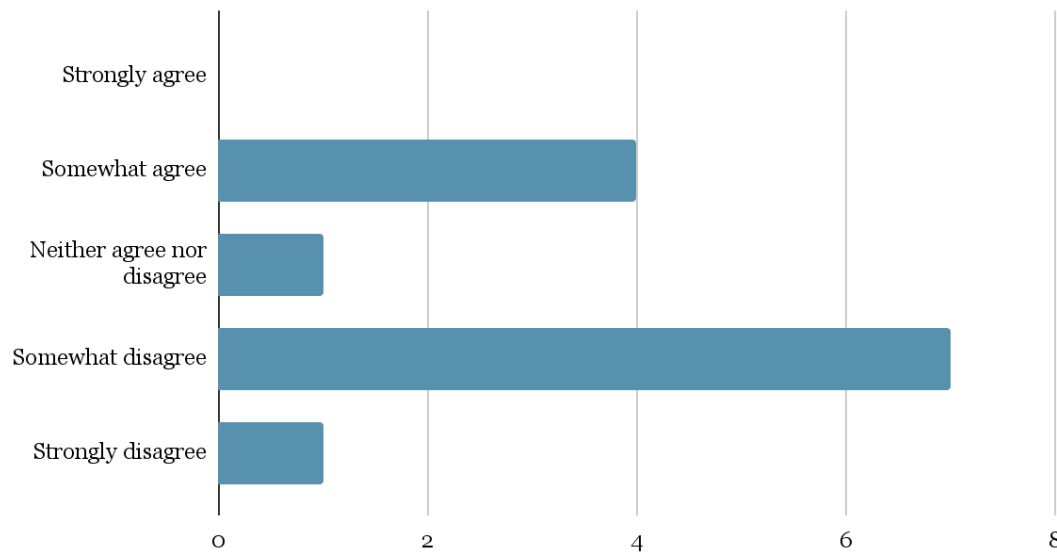
Most participants (n=9) disagreed (whether somewhat or strongly), suggesting that many teachers believed primary school children were aware of gender stereotypes. However, five agreed with this statement - which highlights some discrepancies in opinions.

Figure 4. To what extent do you agree with this statement: I have a solid understanding of gender stereotypes and their impacts on individuals career paths/subject selection in education.



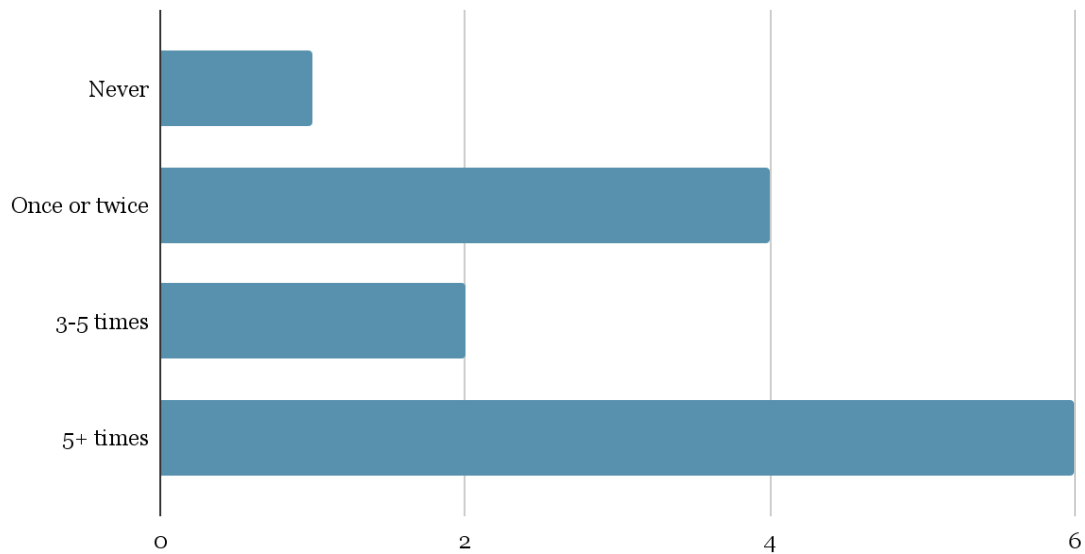
Most (n=9) participants agreed that they had a solid understanding of this (strongly agree=5 and somewhat agree =4). However, three individuals selected neither agree nor disagree, and one individual chose somewhat disagree, showing an area for improvement needed. This could be addressed through teacher training programmes and providers.

Figure 5. To what extent do you agree with this statement: gender stereotyping is an issue at my current school.



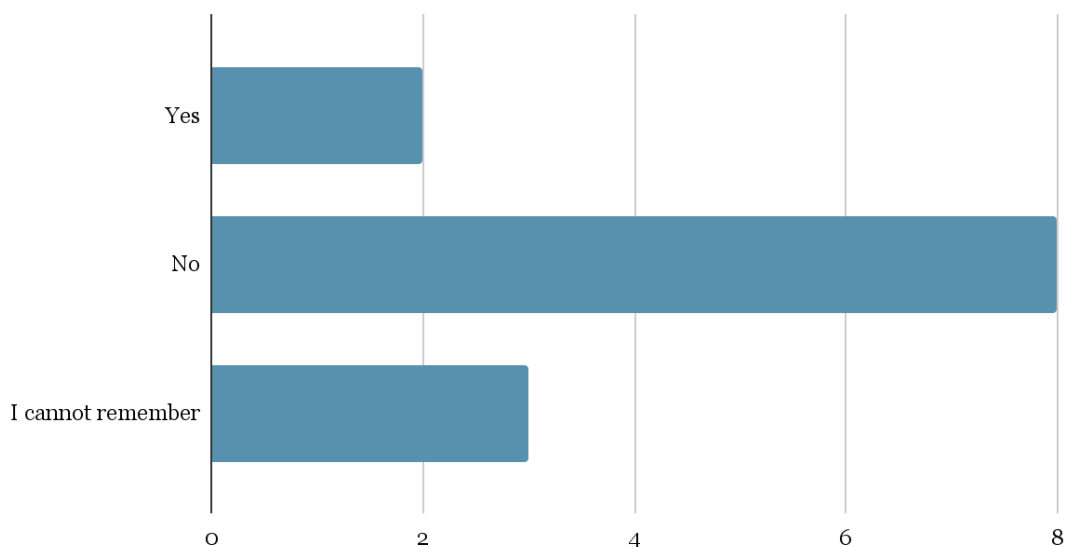
No one strongly agreed that gender stereotyping was an issue at their school, however 4 selected somewhat agreed, highlighting the prevalence of this issue. Over half disagreed with this statement (somewhat=7 and strongly=1) showing that the majority of teachers felt this was not an issue at their institution.

Figure 6. Have you ever had to educate a student(s) on gender stereotyping and their consequences?



Only one participant had never educated a student on gender stereotyping, with the highest number of participants selecting they had done so “5+” times. In total, 12 out of 13 teachers noted they had done so, emphasising again the prevalence of this issue in a primary school setting.

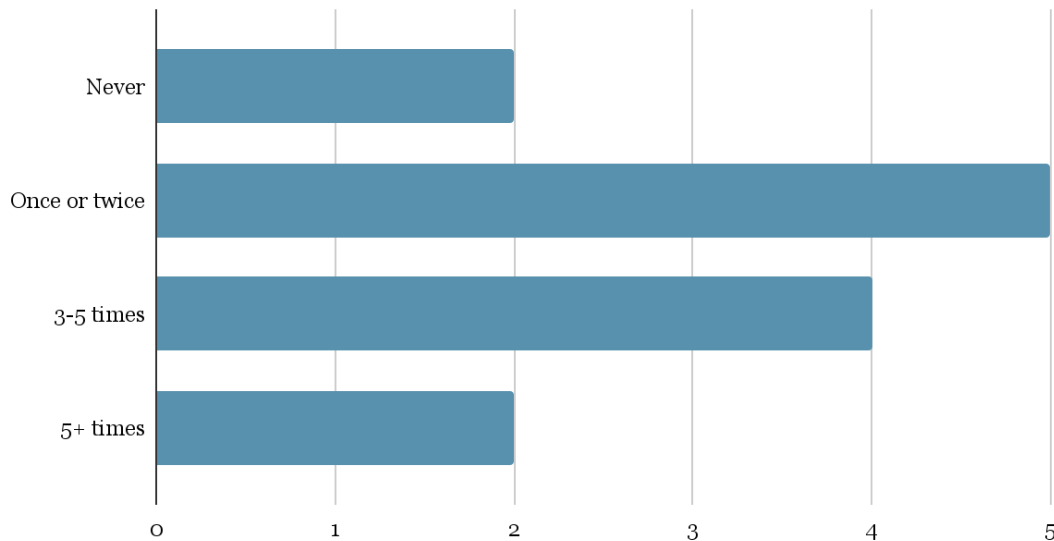
Figure 7. Did you ever learn about gender stereotyping and its effects whilst qualifying to become a teacher?



Most teachers (n=8) had not learnt about gender stereotyping and its effects whilst qualifying to become a teacher, with only 2 individuals remembering they had done so. This could

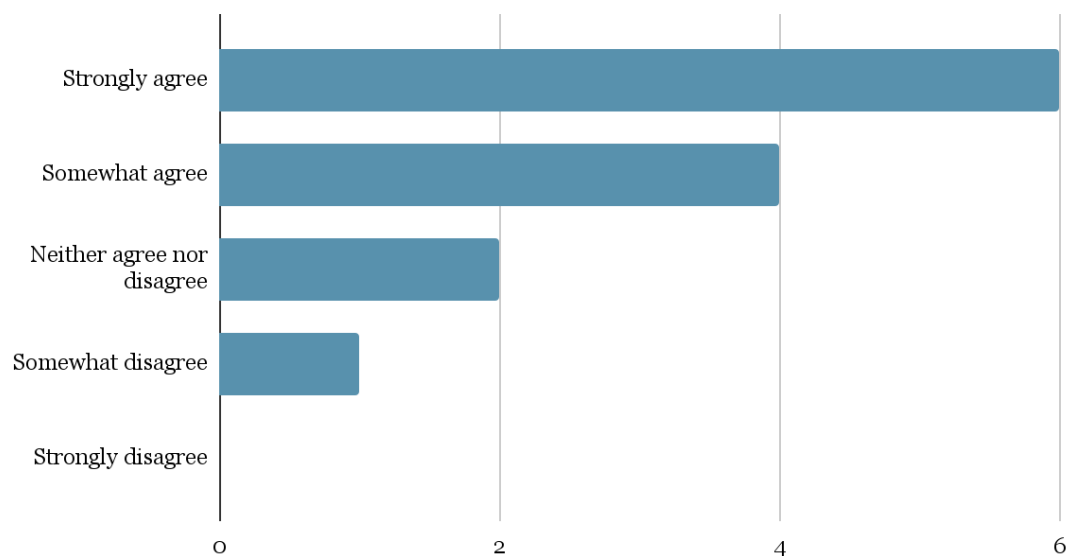
highlight why not all teachers selected that they had a solid understanding of the effects of gender stereotyping in question/table 4.

Figure 8. In the past year, have you had to engage in conversation with a student(s) about gender stereotyping?



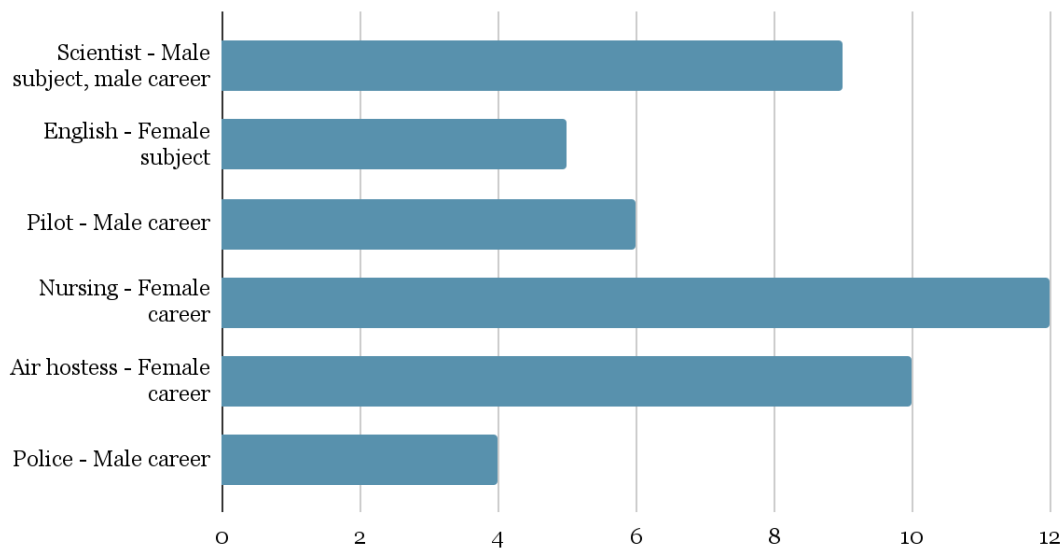
Eleven out of 13 teachers answered that they had to engage in conversation with a student(s) about gender stereotypes, with the majority noting they had done so once or twice. This again forecasts the prevalence of this issue.

Figure 9. To what extent do you agree with this statement: Gender stereotyping can be damaging for individuals with regards to their career paths and subject selection.



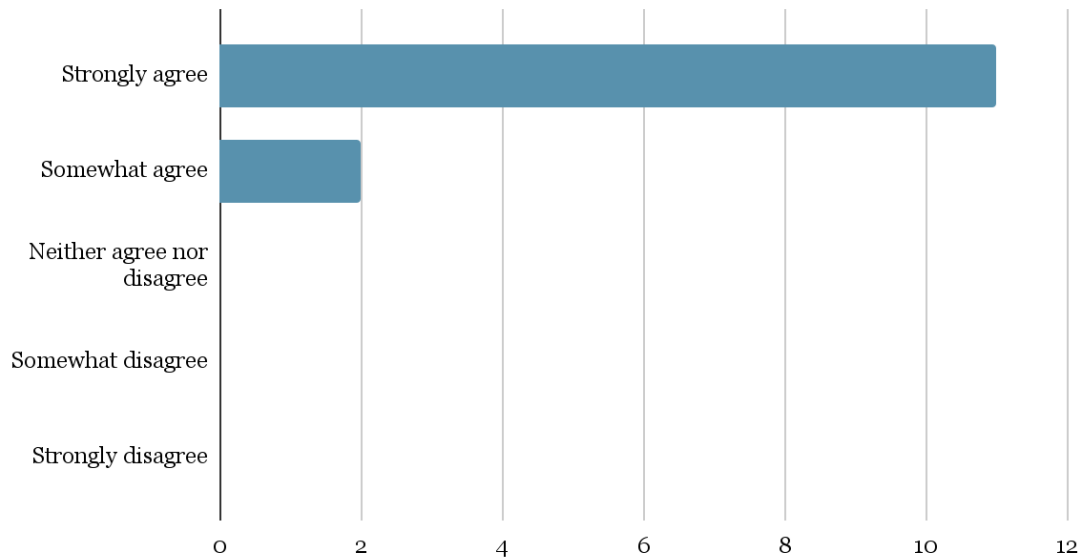
Most (n=10) individuals strongly agreed or somewhat agreed that gender stereotyping can be damaging for individuals with regards to career paths and subject selection. This forecasts that teachers were aware of the potential impacts of gender stereotypes, especially those which affect subsequent decisions regarding careers.

Figure 10. Which of these gender stereotypes with regards to professions and subjects have you heard of before/are aware of? (Select all applicable).



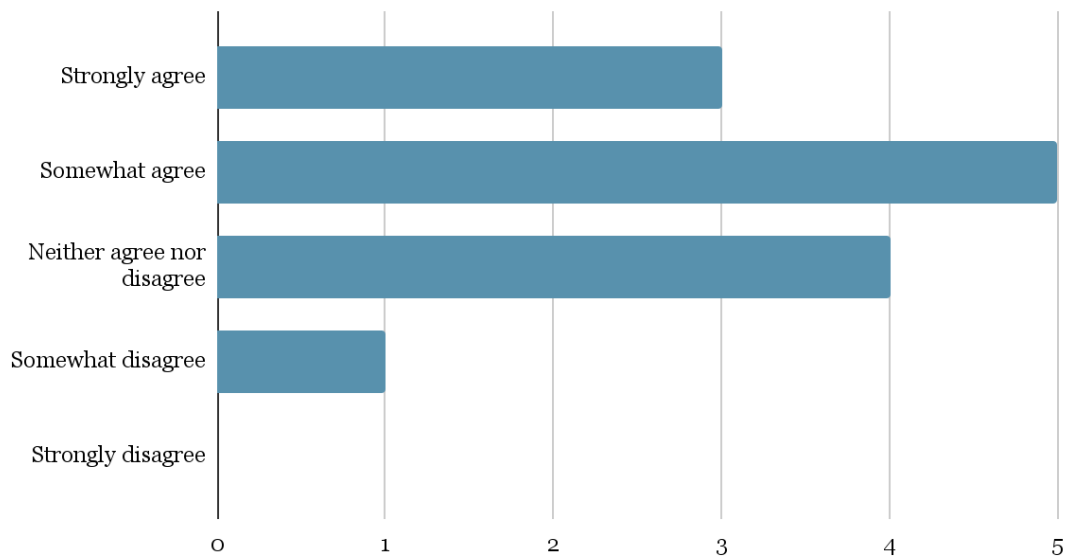
Many teachers selected several of these gender stereotypes, with 12 out of 13 noting they are aware of nursing being a stereotypically female career. Many (n=10) also selected air hostess and scientist, with all careers having at least 4 selections. This shows the prevalence of such gender stereotypes with regards to specific professions and subjects.

Figure 11. To what extent do you agree with this statement: I am comfortable challenging stereotypes if they were to become present within my students.



All participants selected strongly agree (11) or somewhat agree (2). Connoting that teachers feel comfortable about challenging gender stereotypes if and when they were to become present in school, despite not all undergoing training regarding it whilst qualifying.

Figure 12. To what extent do you agree with this statement: I believe gender stereotypes can have a negative impact on students academic attainment in school.



Most participants agreed, whether strongly (3) or somewhat (5) that gender stereotypes can have a negative impact on student academic attainment in primary school. However, 4

individuals selected neither agree nor disagree and 1 somewhat disagreed, which shows some discrepancy in beliefs around the effects of gender stereotypes. This may be due to a lack of education around the effects of gender stereotypes in teacher training programmes.

Student Responses

A total of 16 students took part. Nine of these were male, 6 were female and 1 was unknown. Eleven were in year 4, and 5 from year 5.

Student Responses Part 1.

Table 1. Gender Noted For Each Character in the Story.

Characters in the Story	How many students imagined them to be male?	How many students imagined them to be female?
Flight Attendant	4	12
Pilot	16	0
Nurse	0	16
Scientist	15	1
Police Officer	15	1
English Student At (University Level)	5	11

The results showed the stereotypical ideas clearly, with all students selecting a pilot as male and a nurse as female. Both the scientist and police officer were imagined to be male by all students except one. The flight attendant has 12 students imagining them to be female and 4 male, whilst the English student has 11 imagining them to be female and 5 male. Overall, the results showed how all of these professions can be viewed under a gender bias and stereotypical light, and agreed with the ideas shown in the teacher questionnaire.

Student Responses Part 2. For this section, responses were analysed for each profession. Student responses were thematically coded and compared with previous literature. Below is the thematically coded data, along with the number of responses reiterating these, and some quotes which encapsulate the viewpoint. Presented are the themes which arose most frequently. The following table explores the stereotypical depiction of 3 careers: The of a scientist as a Caucasian male, with white clothes, crazy hair and glasses; The stereotypical depiction of a flight attendant as a female with blonde hair and makeup; and the stereotypical depiction of a English student as a female who wears glasses, school uniform and is smart.

Table 2. The Stereotypical Depiction of a Scientist, Flight Attendant and English Student.

Key -

S = Scientist

FA = Flight Attendant

ES = English Student (University level)

Stereotypical depiction	Number of student responses
S imagined as male	15
S imagined in white clothes	8
S imagined having crazy hair	3
S imagined wearing glasses/goggles	3
FA imagined as female	12
FA imagined having blonde/yellow hair	6
FA imagined wearing blue clothing	5
ES imagined as female	11
ES imagined wearing glasses	3

ES imagined wearing school uniform	3
ES described smart of a "nerd"	3

Overall many noted one or more of these stereotypical features of a scientist. One respondent noted that the scientist would have “crazy grey hair, a white cloak, old, grey big eyebrows”. Whilst another said he would have “white clothes, white hair, crazy hair”, and another mirrored this with “white goggles and a white lab coat”.

With reference to responses around a flight attendant, many highlighted these stereotypical characteristics, with one adding that the flight attendant was a female who had “red lipstick, makeup and long eyelashes”. Many others mirrored the response of a female who was “white and tall” had “blue eyes, long blonde hair” and wore a “navy suit”.

Lastly, with regards to the English student - although the number of students noting these features are lower than that of the first two codes, for the small sample used, it highlights how these stereotypical ideas were reflected. Students noted that the English student was “nerdy, smart” and had “long blonde hair” and wore “a school uniform”. These responses are particularly interesting, considering that every student who took part in this research studies English as part of the curriculum - leaving questions around why individuals feel this subject seems more appropriate or better suited to females.

Discussions

As highlighted, the aim of this research was to investigate whether primary school students and their teachers showed evidence of gender stereotypes. Throughout this section, results will be drawn upon, highlighting the findings and any suggested implications, compared to that of previous literature. For the benefit of this report, sections will be separate with reference to the task.

Teacher Responses

The questions addressed a few separate issues. With regards to the questions around teachers' perceptions of gender stereotypes, similar trends presented themselves. Many teachers acknowledged that gender stereotypes pose issues at primary school level, agreeing that this age was crucial in the development of such ideals, corresponding with the views of Alan et al. (2018). Additionally, many teachers agreed that students at this age were aware of gender stereotypes, and these could be damaging with regards to their selected career and academic attainment, supporting the work of Kollmayer et al. (2016). Although data was not evenly distributed and teachers were not all in agreement – most acknowledged the damaging effects that gender stereotypes can have on students, even at this youthful age.

When focusing on questions regarding prevalence, contradictory ideas were presented. When asked about their school personally, 30% (n=4) of teachers felt gender stereotyping was an issue, however none strongly agreed with this statement. Despite this, when asked whether they had ever educated a student(s) on gender stereotyping and its consequences, most teachers had done so 5+ times, outlining that although many did not perceive gender stereotyping to be an issue at their institution, it still occurs at a significant rate. This idea that it was not necessarily viewed as an issue, but frequently occurred, could suggest that the school views itself as able to deal with such an issue directly, before it begins to snowball. However, despite this, the school notably recognised the prevalence of gender biases, and corresponds with literature which suggests teachers play a crucial role in recognising and challenging gender stereotypes in the classroom to actively reduce gender gaps (Gray & Leith, 2004; Terrier, 2016). Previous literature highlights that teachers' ability to promote equal opportunities and empower all students despite their gender, acts to reduce these stereotypical beliefs (Kollmayer et al., 2016), therefore these results suggest the teachers at this institution are doing just that.

Moreover, in response to the questions around teachers' understanding of gender stereotypes and the impacts these can have on an individual's career paths/subject selection in education, not all teachers answered that they understood this solidly. This could be perceived as concerning, as if teachers are unaware of the potential detrimental effects, they may not understand how to navigate such situations. Moreover, when asked whether they had learnt about gender stereotyping and its effects whilst qualifying to become a teacher, the majority (approx. 60%) said they had not, with only 2 remembering they had done so. This corresponds with the literature, where Gray and Leith (2004) also found low levels of teachers who recalled gender issues being part of their teacher training. This could provide a rationale for the future implementation of this topic in initial teacher training. This will act to ensure every single teacher not only feels confident challenging this, but understands how to tackle this issue in the most effective ways. Despite this, all teachers noted they felt comfortable challenging gender stereotypes if they were to become present, which Kollmayer et al. (2016) emphasises is crucial. This agrees with the above notion, that teachers within this institution were actively challenging this issue and empowering all students despite their gender.

The largest part of the analysis focused on which gender stereotypes with regards to professions, teachers had heard of most frequently. These matched up with the ideas seen in the student task – which will be further considered in the next section. The overwhelming majority of teachers selected many of the common stereotypes, with a nurse, airhostess and scientist appearing most often. As highlighted in the literature, these stereotypes are seen frequently, often resulting in undiversified workforces (Carlan & McMullan, 2009; Finson, 2002; Ferla & Germain et al., 2012; Graham, 2019; Gray & Leith, 2004; Hamilton, 2010; Kiekkas et al., 2016; Loughrey, 2008). However, the terminology of airhostess may have influenced participant's responses, which will be mentioned in the limitation section,

therefore regard must be paid to the potential impacts of this. Despite this, all 6 profession options had at least 4 individuals selecting them, forecasting the pervasiveness of such stereotypical beliefs. This, therefore, could offer an explanation as to why many students display the same stereotypes (discussed below), as teachers' beliefs are often transmitted to their class (Terrier, 2016).

Student Responses

Student Responses Part 1. For this section, the prevalence of stereotypical beliefs from students are explored, focusing on 6 professions. These were matched to the responses of teachers, looking for similar patterns and beliefs.

All students imagined a pilot as male, and a nurse as female. As mentioned in the review, literature supports this idea (e.g. Hamilton, 2010; Loughrey, 2008) – expressing how gender stereotypes can impact the way in which careers are viewed. As highlighted, the aviation industry poses many stereotypical beliefs around males being better suited to roles in this field, and subsequently lead to a far higher proportion of males completing this job (Hamilton, 2010). This is the same for nurses, where the typical female attributes assigned to nursing, being that of care and compassion, lead more females to uptake the role (Loughrey, 2008). However, this is incredibly alarming as such ideals can act to confine individuals' pathways, leading them to conform to traditional views of the roles of males and females. This is especially concerning at primary level, where individuals are incredibly influenced in the production of their long-term outcomes and career beliefs (Alan et al., 2018). The results closely align with that of previous literature, highlighting that all students had built up stereotypical beliefs around the gender of pilots and nurses which may subsequently act to encourage or discourage them to pursue these careers.

These results were closely followed by a scientist being viewed as male by all but one student, which literature strongly conforms with. This stereotype has been replicated fiercely

throughout Finson's (2002) studies, and in the responses from the teachers. However, further clarification of what causes this stereotypical bias could help to implement interventions, to ensure diversity in the workforce and encourage students to pursue careers with the absence of gender constraints. However, recognising this is the first positive step of many and these results show clear evidence of such stereotypical ideals in young children.

Along with the above, a police officer was also viewed as male by all but one student. Carlan and McMullan (2009) connotes outdated and stereotypical perceptions of the police-force cause females to struggle gaining acceptance from their male peers. These results highlight that this stereotypical idea is present in students as young as year 4, emphasising the damage of this stereotype. Similarly, a flight attendant was also viewed as female by $\frac{3}{4}$ of the students. As mentioned, these matched the responses of the teachers – highlighting how prominent these stereotypical beliefs are. This matched with literature, which emphasises that the role of women in commercial aviation has been stereotypically forecasted, whether this be in media or advertisement, leading to biased ideas around the capabilities of women (Ferla & Graham, 2019).

In line with that of the teachers' responses, every profession displayed patterns of gender stereotypes, emphasising the sheer pertinence of this issue, and acknowledging its presence in children at primary school level. As mentioned, this age is crucial in the development of stereotyped ideals (Alan et al., 2018), and therefore if practitioners can recognise this early enough, they could put a stop to it - before it interferes with career paths and subject selection.

Student Responses Part 2. This section will focus on the thematic analysis conducted, outlining 3 recurrent themes noted.

Firstly, as discussed, the stereotype of a scientist was profound. When this was analysed further, 4 specific aspects displayed themselves regarding how this individual looks.

Many individuals imagined the scientist to be a male, with white clothes, crazy hair and glasses or goggles. This is an incredibly stereotypical depiction of a scientist, with previous research finding corresponding ideas (Finson, 2002). The reasons behind this are not confirmed, however, much literature suggests that stereotypical depictions of this profession in the media and children's literature contributes to this (Farland-Smith et al., 2017). Continuing, Farland-Smith et al. (2017) notes that these images will add to a child's perception of a scientist's identity, which could help explain the findings. Further research would help solidify this, perhaps asking questions around how these ideals have been created and investigating the texts used in primary schools to see if these conform to stereotypical norms.

Secondly, when focusing on the depiction of a flight attendant, many students imagined this individual was a female, with blonde (yellow) hair and blue clothing. Specifically, some students imagined this individual wore makeup, noting details of red lipstick and long eyelashes. As highlighted, Ferla and Graham (2019) notes the stereotypical ways women in the commercial aviation industry are portrayed. However, the media portrayal of flight attendants may add to this stereotype, with the likes of Ryanair producing commercials where the female flight attendants meet these exact depictions (Ryanair, 2016). Therefore, this again suggests that the media may indeed have a role to play in these findings, however future research would help thicken this hypothesis.

The last theme was the stereotypical depiction of a university English student as a female who wears glasses, school uniform and is intelligent. This was selected as a professional option as it encapsulates an individual's view of English arguably more thoroughly than selecting a singular career based off of the umbrella of English, such as a writer or a poet. The idea that this individual was imagined to be female, despite all students involved in this study partaking in regular English classes as part of the curriculum, is

incredibly interesting. Leading questions to be asked around why this is, and why children of this young age have created such a view - opening up a potential avenue for future research. Despite this, previous research agrees with this notion, stating that not only do females perform better on average in English, but many believe the subject is better suited for this gender (Skelton et al., 2007). Further research regarding the causations would prove useful, hoping to encourage all students to pursue a career in English if they wish, without the impacts of gender constraints. However, it is important to note that two individuals commented that they imagined an English student to look like the researcher – whom they could see on the screen whilst completing this task. Therefore, the depiction of this individual as someone who wears glasses, and is female, may have been influenced by this.

Conclusion and limitations

Overall, much of the findings echoes with that of previous literature, highlighting the prevalence of gender stereotypes. Throughout, these results have supported the notion that children as young as year 4 display profound gender stereotypes, which may in turn affect their subsequent professions and subject selection. Similar ideas were matched with their teachers, who acknowledged the severity of this issue at primary school level. Therefore, this study acts with that of previous, in foregrounding the necessity for this issue to be addressed. Hopefully this study can contribute to other research in this area, proposing a rationale for effective interventions to be introduced at primary school level, in the hope to reduce these outcomes.

It is important to consider the limitations of this study and the results. Along with those discussed throughout, a potential limitation is the minimal cohort used, presenting issues of generalisability. As highlighted, Covid-19 complications meant the participant population was cut shorter than anticipated, which may subsequently affect the generalisability of the data. **Despite this, study features were optimised and thoroughly**

considered in an attempt to subsidise any potential restrictions. However, this limitation does allow an area for future development, with future research aiming to collect from a larger and more representative population, to confirm these findings, or by using more advanced qualitative methods (e.g., individual, in-depth interviews). Additionally, the phrasing of airhostess used throughout the teacher task may have influenced individuals' responses. This was not an issue for the student task, as the term flight attendant was used. Therefore, future research should ensure terminology for this is consistent, and does not affect the reliability of results.

Moreover, the choice of data collection allowed thorough analysis, in a way which averted any psychological distress to participants (no probing questions), however, it could be argued that a Likert-scale design poses some downfalls. Research suggests individuals may cluster their responses (i.e., by selecting the end of the scale consistently), or, select the mid-point of the scale (Cohen et al., 2018). However, this was not something which was noticed in the research, and therefore the chosen collection method seemingly complimented the research project.

Summary

To summarise, this research showed the prevalence of gender stereotypes at primary school level, forecasting the perceptions of teachers and students. The evidence suggests that stereotypes are shown in both primary school students and their teachers, and therefore acts as a rationale for future research to address this issue. Throughout, the research highlighted teachers' ideas around the significance of these ideals, and the regularity of this issue in school. Teachers showed they felt confident challenging it, however many of them did not receive formal training on this whilst qualifying, suggesting this topic should be implemented in initial teacher training, as such ideals were presented frequently.

Overall, many teachers and students had corresponding ideas around the 6 frequently stereotyped professions, especially with regards to the role of a scientist, nurse, pilot, and flight attendant. This acts as a rationale for future research to focus on the causes of these ideals and produce effective interventions to reduce these before they begin – which this research suggests is before primary school age (years 4-5). Future directions could also focus on solidifying the link between the media, and children's literature in the formation of all 6 of these frequently stereotyped professions.

Despite the frequency of stereotypical beliefs', many teachers showed an awareness of this, and an ability to actively confront this challenge, which the research shows is a powerful indicator for the effects that gender stereotyping has on individuals (Terrier, 2016). Therefore, highlighting that teachers understand the importance of addressing this, and further education for teachers around this issue, and how best to address it, may be happily received and prove useful for reducing the frequent occurrence.

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Appendix

Appendix 1 Qualtrics questionnaire

10/12/2020 Qualtrics Survey Software

Teacher perceptions of gender stereotypes and prevalence in primary school

I identify as

- Male
- Female
- Other

I primarily teach

- Year 3
- Year 4
- Year 5
- Year 6
- Other

To what extent do you agree with this statement: Gender stereotypes are not an issue at primary school level

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

To what extent do you agree with this statement: Primary school is crucial in the development of gender stereotypes

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

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10/12/2020 Qualtrics Survey Software

To what extent do you agree with this statement: Students' in primary school are not aware of gender stereotypes

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

To what extent do you agree with this statement: I have a solid understanding of gender stereotypes and their impacts on individuals career paths/ subject selection in education

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

To what extent do you agree with this statement: Gender stereotyping is a issue at my current school

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Have you ever educated a student(s) on gender stereotyping and their consequences?

- Never
- Once or twice
- 3-5 times
- 5+ times

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10/12/2020 Qualtrics Survey Software

Did you learn about gender stereotyping and its effects whilst qualifying to become a teacher?

- Yes
- No
- I cannot remember

In the past year, have you had to engage in conversation with a student about gender stereotypes?

- Never
- Once or twice
- 3-5 times
- 5+ times

To what extent do you agree with this statement: Gender stereotypes can be damaging for individuals with regards to career paths and subject selection

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Which of these gender stereotypes are you aware of/ have heard before? (select all applicable)

- More scientists are males
- English is a female subject
- More pilots are males
- Nursing is a female career
- Air hostesses' are female
- Police are men, that's why they're called policemen
- None of the above

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10/12/2020 Qualtrics Survey Software

To what extent do you agree with this statement: I am comfortable with challenging gender stereotypes if they were to become present within primary school students

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

To what extent do you agree with this statement: I believe gender stereotypes can have a negative impact on a student's academic attainment in primary school

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

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Appendix 2 Story for students and table

Student Task Sheet

Year group:

Gender:

Character in the story	Gender identity you imagined for the character	Any other features/ characteristics you thought (i.e. hair colour, clothes) This can be anything!
Flight attendant		
Pilot		
Nurse		
Scientist		
Police officer		
English student		

Task for students -

*I will be on a virtual platform, with the teacher present at all times. Students will be in their usual classes. Teachers will distribute the pre-prepared sheets, and when complete scan these and send them to me. *

I will begin by explaining a little bit about my project.

Hello everyone, I am Ella and today we will be doing a short activity to explore your thoughts about gender. I know all of you have had the opportunity to read the information sheet, and I hope you understand what we are doing today. If at any time you need some help, you can pop your hand up - and either myself or your teacher will be able to answer your question.

Just to quickly remind you what will happen today:

First I will read out a very short story, and I want you to imagine all of the people you see! Think about the gender identity of these individuals and any other features you have thought about. Then, once I have finished the story, I will give you some time to note down these thoughts on your paper. As you can see, these are labelled for you.

This task should take less than 20 minutes. If anyone would like me to read the story again, just pop up your hand at the end and ask.

Does anyone have any questions before we begin?

Story:

You wake up early, excited for the adventure to begin. All night you've been tossing and turning, waiting for your holiday to be here. When the alarm goes off, you're wide awake and ready to go.

In the car you get, the boot packed high with suitcases and luggage. It is only a short ride to the airport, but your excitement keeps you alert. Once you arrive, the airport is lively and loud. You manage to get your boarding passes checked, and suitcases weighed, and make your way to wait at the departure seating area.

Finally, your flight is called. You race to the front of the queue, and get welcomed by a flight attendant. Their smile is beaming and they welcome you aboard with excitement. You wonder what it would be like to be a flight attendant, getting to travel across the world as your job.

As you step onto the plane, you are welcomed by the pilot. They say hello with a big smile, and help you on board. They begin preparing the plane for takeoff, ensuring all controls are in place. You rustle to your seats and prepare yourself for the flight ahead.

Whilst on the flight, you notice such a mixture of people around. There's a baby in front, cooing and their mother quietly hushing them, and there's another young child behind you kicking your seat... typical!