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Gender Bias in Teacher Interactions with Students

Abstract

This action research study investigated the presence of gender bias, in the form of more teacher attention, in a Christian middle school in southwestern British Columbia, Canada. Eight teachers of grades six to eight participated in the study. Teachers were observed for two 20-minute lessons. Each interaction between teacher and student was coded as either academic or behavioural in nature, as well as either positive, negative or neutral. The results of this study suggest that boys receive more teacher attention than do girls in the school. As well, girls tend to receive fewer behavioural type interactions with teachers than boys. Both boys and girls receive a similar amount of neutral interactions with their teachers.

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Action Research Report Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Education

Gender Bias in Teacher Interactions with Students

By

Kaily Stevens

BEd. University of Victoria, 2006

Action Research Report
Submitted in Partial Fulfillment
Of the Requirements for the
Degree of Master in Education

Department of Education
Dordt College
Sioux Center, Iowa
April, 2015

Gender Bias in Teacher Interactions with Students

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Abstract

This action research study investigated the presence of gender bias, in the form of more teacher attention, in a Christian middle school in southwestern British Columbia, Canada. Eight teachers of grades six to eight participated in the study. Teachers were observed for two 20-minute lessons. Each interaction between teacher and student was coded as either academic or behavioural in nature, as well as either positive, negative or neutral. The results of this study suggest that boys receive more teacher attention than do girls in the school. As well, girls tend to receive fewer behavioural type interactions with teachers than boys. Both boys and girls receive a similar amount of neutral interactions with their teachers.

In the 1970s and 80s, gender bias in the classroom was an important issue in education. Educators were concerned that girls were not receiving an equal education to boys. Not only were boys surpassing girls in Maths, Sciences and Geography, but they were also significantly surpassing women in the workplace, in both remuneration and job status. Much research was conducted at this time that demonstrated that boys received more teacher attention than girls, and the kind of attention they received was generally better quality, (Baker, 1986; Becker, 1981; Jones, 1989; Sadker & Sadker, 1986). This difference in attention may be connected to the differences in educational standings between boys and girls.

As society slowly made gains in reducing this bias, a shift took place in education. Rather than focusing on gender discrimination against girls in school, educators began focusing on the gender gap in literacy between boys and girls. According to some, boys were then being short-changed in the classroom, being given literacy instruction that was not adequate for their gender. The pendulum swing went so far that some even claimed there was a boy crisis in literacy, and that the previous focus on girls had led to a massive gender bias against boys (Beaman, Wheldall & Kemp, 2006; Myhill, 2002). Due to this pendulum swing, little research has been completed in the past twenty years concerning the educational experience of girls. National statistics continue to demonstrate that women continue to struggle to find equality in the workplace (Cool, 2010) and tend to be more passive learners in education than their male counterparts (Sadkar & Sadkar, 1986). It seems as though many of these gender bias issues were not solved in the 1970s and 80s, as was thought.

The purpose of this study was to investigate gender bias in the classroom; more specifically, whether boys and girls at a Christian middle school in southwestern, British Columbia, Canada, receive similar amounts and kinds of attention from their teachers. Through a

quantitative analysis of observations from many different teachers, the researcher sought to address the following questions:

1. Do boys receive more teacher attention than girls?
2. What kinds of attention do teachers generally give boys—either positive, negative, or neutral, academic, or behavioural?
3. What kinds of attention do teachers generally give girls—either positive, negative, or neutral, academic, or behavioural?

Definitions of Terms

For the purpose of this study, the researcher provides the following definitions. All definitions are the researcher's unless otherwise noted.

Academic feedback: the teacher makes either a negative, positive or neutral comment to a student in reference to an academic subject, (e.g. “Don’t forget to place the decimal in the correct position.”).

Behavioural feedback: the teacher makes either a negative, positive or neutral comment to a student in reference to the student's particular behaviour (e.g. “Great job at getting ready for Bible class.”).

Bias: a tendency to believe that some people, ideas, etc., are better than others. This usually results in treating some people unfairly.

Interaction: where a teacher talks with a student about either an academic topic or about behaviour, giving positive, negative or neutral comments in response to the student.

Negative feedback: Any feedback that would discourage a particular behaviour or correct or change a particular understanding of a concept (e.g. “Please stop interrupting, and instead, put your hand up if you have something to say.”).

Neutral comment: Any feedback that cannot be categorized as either positive or negative. It neither discourages nor encourages (e.g. “O.K.” or “uh-ha, or “oh yeah”).

Positive Feedback: Any feedback that would encourage a particular behaviour or reinforce an understanding of a concept (e.g. “Excellent response Peter; you were thinking outside the box.”).

Literature Review

The 1980s are known for the application of feminist theory in the work place and society at large. Feminist theory works to analyze the status of women and men in society with the purpose of using that knowledge to better women's lives. In education, many researchers, such as Sadker and Sadker (1986), investigated gender bias in the classroom. Their research suggested that gender bias was alive and well in the classroom. They revealed that male students received more attention from teachers and were given more time to talk in classrooms than female students. Not only did male student receive more interaction time with teachers, but also the types of interactions they had were quite different. The researchers stated that interactions involving precise feedback such as praise, criticism or help/correction were more likely to be with male students, while female students were statistically more likely to receive a fourth, less-specific type of interaction, such as a simple acceptance like “okay,” or “uh-huh.” Males were most likely to be rewarded for a correct answer or given feedback to enhance their learning than females (Baker, 1986; Becker, 1981; Jones, 1989; Sadker & Sadker, 1986).

Becker (1981), using the Brophy-Good Teacher-Child Dyadic Interaction System, found similar results (p. 45). While studying teacher and student interactions in high school Math classes, the researcher found that teachers afforded more response opportunities in whole group teaching situations with males (males 57%, females 43 %); teachers initiated more individual academic contact with males students (63% male, 37% female); while females and males asked for help in equal numbers, teachers approached male students more often to check work and give

help; teachers engaged in more non-academic conversations with males than females (74% males, 26% females); teachers provided more praise to males than females, (65% males, 35 % females); teachers engaged in more critical interactions with males than females (73% males, 27% females); male students received more feedback on their work; male students received more praise (65% male, 35% female), and criticisms (73% male and 27 % female). Overall, the researcher found that male students were given more opportunities for responding, questioning, being encouraged or criticised, received more individual help, and even had greater social connections with their teacher, than did females students in the Math classes.

Many studies (Beaman, et al., 2006; Lundeberg, 1997; McCaughtry, 2013; Sadker, Sadker & Klein, 1991) seemed to be pointing to the idea that schools reinforce stereotypical gender roles where girls are meant to be quiet and compliant, while boys more actively participate. Some have even gone as far as to state that females are the ideal student due to their greater ability to stay on task, to have greater compliancy and greater willingness to please. Sadker and Sadker (1984) found that males in elementary and secondary schools are eight times more likely to call out and demand a teacher's attention than females. When males called out, teachers tended to accept their answers, while females are more likely to be criticized for the same behaviour. Sadker and Sadker (1986) wrote that males were trained to be assertive learners, while females are being trained to be passive spectators in classrooms (p. 513).

This female compliancy or passiveness is a greater benefit to their teachers than to the learners. Learned passiveness does not prepare women for their future careers. Compliant workers do not get promoted. Mayhill (2002) wrote that few company executives, politicians or lawyers would be described as conformist [compliant], though their personal assistants may very well be.

What about the opposing side of gender bias? Are boys receiving the wrong kind of attention from teachers? How could this bias be affecting male students? According to Cullingford (1993), students feel that boys are more likely to get into trouble than girls, for behaving in the same manner. Boys receive more negative attention from teachers. He wrote “There is also evidence that boys have more volatile relationships with teachers, both positive and negative...” (Cullingford, 1993, p. 556).

Unfortunately, the patterns of gender inequality in the classroom do not stop after high school. College and universities have been found to continue these similar patterns with males interacting more, and creating a chilly environment for women to participate in (Crawford & MacLeod, 1990). From grade school to university, Crawford and MacLeod (1990) found that biased classroom interaction decreases women’s self-confidence in their intellectual abilities.

Interestingly, teachers tend to be unaware that gender bias exists in their classrooms (Lundeberg, 1997). Not all teachers have the same kinds of bias. Gender bias, while evident in all K-12 classrooms, seems to be more prevalent in high school classrooms. Merrett and Wheldall (1992) did not find significant differences in the way that teachers interacted with males and females in elementary schools, but they did find differences between male and female teachers at the secondary school level. They found that male teachers responded significantly more positively towards boys’ academic as well as social behaviour. Female teachers tended to treat boys differently. Overall, they gave significantly more negative responses to males than to females and specifically for negative responses to social behaviour. Like previous research, Merrett and Wheldall’s (1992) research continued to demonstrate that males, in general, receive more teacher attention. Their research differs from other research in that it shows that male and female teachers may interact with students of different genders in diverse ways.

The question of why males seem to receive more attention in the classroom than females remains. Beaman, et al. (2006), and Myhill (2002) believed that an important aspect of why boys receive more attention is due to the fact that a much greater percentage of students with special behaviour and learning needs are boys. As well, males tend to shout out significantly more than females in the classroom, focusing the attention more on the males than on the females.

Concerned about national (UK) reports of boys' underachievement, Myhill (2002) studied what the roots of boys' underachievement are by looking at teacher's perceptions, children's perceptions and patterns of interaction and response. Contrary to earlier research, Myhill (2002) found that in terms of children's willingness to participate in positive classroom interactions, boys did not dominate classroom talk. Instead, she found that the student's status as a learner (underachiever versus overachiever), was a significantly greater indicator of whether a child would interact in the classroom. According to Myhill (2002), the underachievers, boys and girls alike, are the reluctant participators and gender has much less of a role to play.

So, why does this matter? Some may argue that the issue of gender inequities is no longer relevant. For instance, there are more women in undergraduate and graduate study programs than there are men today (Employment and Social Development Canada, 2014). While women are succeeding in many arenas, there are still large disparities between genders, most notably in the kinds of work and the salaries paid to men and women. According the government of Canada, in 2008, Canadian women's wages were still on average almost \$20,000 below that of men (Cool, 2010). This means that for every dollar that men make, women make on average, \$0.76. This demonstrates that there is still a large disparity between men and women's salaries. According to Sadker and Sadker (2009), men are still more likely to dominate conversation,

interrupt others (particularly women), and emerge as group leaders in the workplace. These dynamics in the workplace are the same dynamics that have been observed in the classroom.

More importantly, gender bias matters because it matters to God. Galatians 3:28 states that we are all equal. “There is neither Jew nor Greek, there is neither slave nor free, there is no male and female, for you are all one in Christ Jesus.” Additionally, Genesis 1:27 states a similar message: “So God created man in his own image, in the image of God he created him; male and female he created them.” Men and women deserve an equal opportunity to be educated, one that will equally help each of them grow into the man or woman that God has designed them to be.

As gender issues continue to push their way to the spotlight, more research needs to be completed on teacher interactions with students today. There is not enough conclusive evidence to suggest that gender inequalities no longer exist in teachers’ interactions with students.

Methods

Participants

In this study, the research participants were eight middle school teachers from a private Christian school in the southwestern part of the province of British Columbia, Canada. Five of the participants were male, and 4 female. The participants had between 3 and 24 years of experience in teaching. Seven of the eight teachers were Caucasian and grew up in Canada. The classes that these eight teachers lead were made up with close to an equal balance of male and female students between the ages of 11 and 14 years old.

Materials

This study was conducted through observational research. The camera function in an iPad was used to capture two lessons of the participants choosing. The iPad was set up in the corner of the classroom. The researcher used a frequency chart to document the different kinds of

feedback each teacher made, making a distinction between what gender the teacher was interacting with, and then what kind of feedback was being given. This observational frequency chart can be found in Appendix A.

Design

The research was conducted over a period of one month. The participants were informed that although the purpose for researching could not be revealed, the participant's general teaching strategies would not be analyzed. The consent form for participation can be found in Appendix B. Participants were asked to choose two lessons that had lots of teacher-student interaction to film, using the camera. Each participant was filmed for two, 20-30 minute-long lessons. Before the observed lesson began, students were made aware of the iPad, and were told that it was there to help the researcher collect some data for her study. Students were asked to give a silly smile for the camera, and then ignore it. The iPad was set up some minutes before the observation began to allow students time to forget the camera was there.

Procedure

The researcher immediately took each filmed lesson and analyzed it using the frequency chart found in Appendix A. Each time a participant gave any kind of attention to a student, (either academic or behavioral, and negative, positive or neutral), the researcher made a note of the feedback on the frequency table. Separate data was collected for interactions with female and male students.

The data was then analyzed to see if the participants gave more attention to either male or female students, as well as what kinds of attention was given. Appendix C illustrates how the researcher coded the interactions. The data was presented as aggregated average percentages of differences in interactions between male and female students. The data shows the averages of all

eight teachers together. The data shows whether male or female students receive more attention from teachers, and if so, what particular types of attention they received.

Results

Data Analysis

To analysis the data to answer the first question, “Do boys receive more teacher attention than girls?” the researcher first found the percentage of each gender in each classroom observation. She then calculated the percentage of overall interactions that each gender received in that observation. The percentage of interactions was then subtracted from the percentage of that gender. The difference showed the percentage difference between boys and girls for that observation. The P value of the average difference between boy and girl interactions was then calculated. This is shown in Table 1.

Table 1

The Difference in Teacher Interactions with Male and Female Students

	% of each gender in class		% of total interactions for each gender		% difference between total teacher interactions with boys and girls
	boys	girls	boys	girls	boys
Teacher 1 A	48%	52%	61.2 %	38.9%	13.3%
Teacher 1 B	50%	50%	64.7%	35.3%	14.7%
Teacher 2 A	58.3%	41.7 %	87.9%	12.1%	29.6%
Teacher 2 B	50%	50%	71.2%	28.8%	21.2%
Teacher 3 A	62.5%	37.5%	86.95%	13%	24.5%
Teacher 3 B	60%	40%	92.9%	6.7%	32.9%
Teacher 4 A	50%	50%	55.6%	44.4%	5.6%
Teacher 4 B	52%	48%	78.3%	21.7%	26.3%
Teacher 5 A	46.2%	53.8%	41.3%	56.3%	2.5%
Teacher 5 B	46.2%	53.8%	48.7%	51.3%	-2.5
Teacher 6 A	54.2%	45.8%	68.2%	31.8%	14%
Teacher 6 B	50%	50%	62.5%	37.5%	12.5%
Teacher 7 A	55%	45%	71.0%	29.0%	16%
Teacher 7 B	60%	40%	72.2%	27.7%	12.2%
Teacher 8 A	54.5%	45.45	58.6%	41.4%	4.1%
Teacher 8 B	56%	44%	45.7%	54.3%	-10.3
Average Total	53%	47%	66.68%	33.14%	13.58%

To answer question two, “What kinds of attention do teachers generally give boys—either positive, negative, or neutral, academic, or behavioural?” and question three, “What kinds of attention do teachers generally give girls—either positive, negative, or neutral, academic, or behavioural?” the researcher totalled the number of each type of interaction per gender and then found the percentage of that type of interaction compared to all other interactions of that one gender only. This is shown in Table 2 and Table 3.

Table 2

Individual Teacher Interactions with Boys

	% of academic interactions compared to total interactions	% of behavioural interaction compared to total interactions	% of total positive interactions compared to total interactions	% of total negative interactions compared to total interactions	% of total neutral interactions compared to total interactions
Teacher 1 A	76.3%	23.7%	52.6%	31.6%	15.8%
Teacher 1 B	81.8%	18.2%	36.4%	45.5%	18.2%
Teacher 2 A	96.6 %	3.4%	34.5%	3.4%	62.1%
Teacher 2 B	86.5%	13.5%	13.5%	18.9%	67.6%
Teacher 3 A	85%	15%	25%	20%	55%
Teacher 3 B	92.3%	7.7%	38.5%	7.7%	53.8%
Teacher 4 A	93.3%	6.7%	40%	0%	60%
Teacher 4 B	94.4%	5.6%	16.7%	5.6 %	77.8%
Teacher 5 A	89.5%	10.5%	47.4%	5.3%	47.4%
Teacher 5 B	100%	0%	42.9%	0%	57.1%
Teacher 6 A	100%	0%	0%	26.7%	73.3%
Teacher 6 B	85%	15%	5%	25%	70%
Teacher 7 A	95.5%	4.5%	4.5%	9.1%	86.4%
Teacher 7 B	100%	0%	7.7%	0%	92.3%
Teacher 8 A	70.6%	29.4%	17.6%	23.5%	58.8%
Teacher 8 B	93.8%	6.3%	0%	12.5%	87.5 %
Average	89.92%	9.98%	23.81%	14.68 %	61.44%

Table 3

Individual Teacher Interactions with Girls

	% of academic interactions compared to total interactions	% of behavioural interaction compared to total interactions	% of total positive interactions compared to total interactions	% of total negative interactions compared to total interactions	% of total neutral interactions compared to total interactions
Teacher 1 A	79.2%	20.8%	66.7%	20.8%	12.5%
Teacher 1 B	83.3%	16.7%	50%	17.7%	33.3%
Teacher 2 A	100%	0%	0%	0%	100%
Teacher 2 B	93.3%	6.7%	6.7%	13.3%	80%
Teacher 3 A	100%	0%	66.6%	0%	33.3%
Teacher 3 B	100%	0%	100%	0%	0%
Teacher 4 A	100%	0%	41.7%	0%	58.3%
Teacher 4 B	100%	0%	20%	0%	80%
Teacher 5 A	100%	0%	45%	15%	40%
Teacher 5 B	88.9%	11.1 %	33.3%	33.3%	33.3%
Teacher 6 A	100%	0%	0%	14.3%	85.7%
Teacher 6 B	91.7%	8.3%	0%	16.7%	83.3%
Teacher 7 A	100%	0%	11.1%	11.1	77.8%
Teacher 7 B	100%	0%	0%	0%	100%
Teacher 8 A	91.7%	8.3%	0%	8.3%	91.6%
Teacher 8 B	84.2%	15.8%	10.5%	5.3%	84.2 %
Average	94.52%	5.48%	28.22%	9.74%	62.1%

The data was then compiled into overall averages for all eight teachers, for all 16 observed lessons as well as the range. This is shown in Table 4.

Table 4

Average Kinds of Attention Teachers Give Boys and Girls

	Academic interactions compared to total interactions for that gender		Behavioural interactions compared to total interactions for that gender		Positive interactions for that gender		Negative interactions for that gender		Neutral interactions for that gender	
	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls
Average	89.92 %	94.5%	9.98%	5.48%	23.81%	28.22%	14.68%	9.74%	61.44%	62.1%
Range	29.4%	21%	29.4%	20.8%	52.6%	100%	45.5%	33.3%	76.5%	100%

Findings**Research question one.**

The first research question asks the following: Do boys receive more teacher attention than girls? The researcher found that on average, boys received 13.58% more teacher attention than girls, over the course of the study. The percentage difference between boys and girls in the observed lessons ranged by 43.2 %. The lowest percentage difference was girls receiving 10.3 % more attention than the boys. The highest percentage difference was boys receiving 32.9 % more teacher attention than girls.

Figure 1 shows visually, the percentage of interactions that boys receive more than girls, taking into consideration the number of boys and girls in each class.

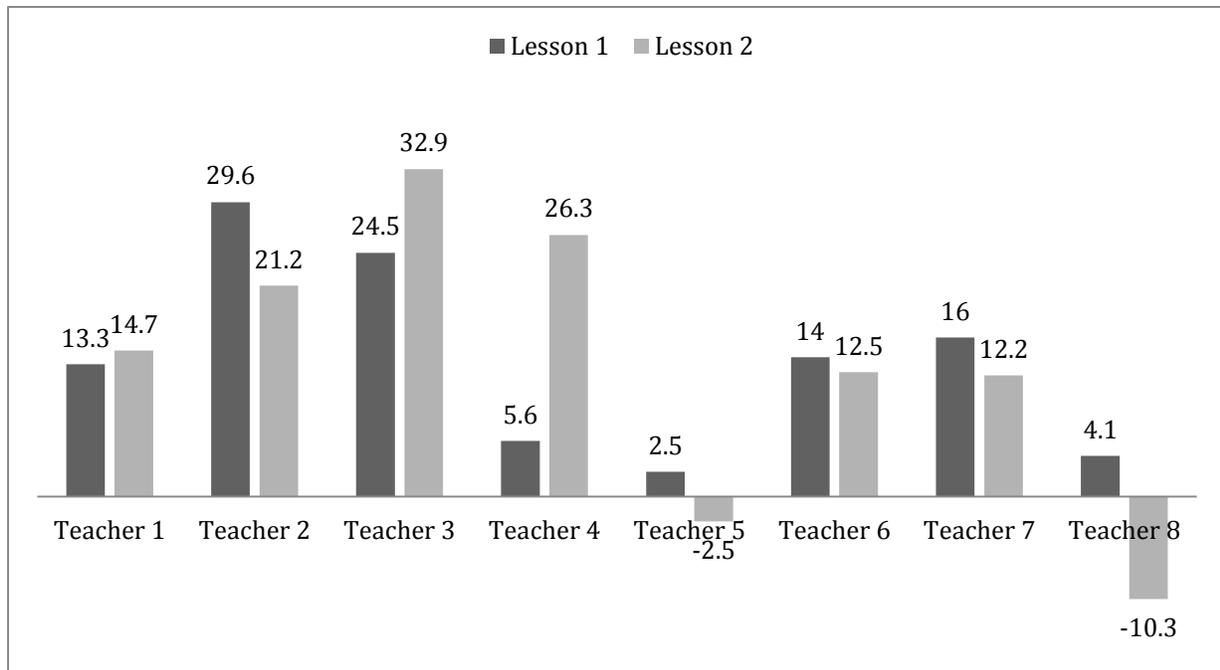


Figure 1 Percentage of interactions that boys receive more than girls

To find the validity of the results of question 1, the researcher calculated the P value for the overall average difference between the number of interactions of the gender and the percentage of students of that gender. The average is 13.58 %. The P value for the average is 0.004445, which makes the results statistically significant. See Table 1.

The total number of interactions that each gender had with a teacher was also calculated. Overall, boys received 310 interactions during the 16 observed lessons. Girls received 167 interactions. These results can be seen in the Figure 2:

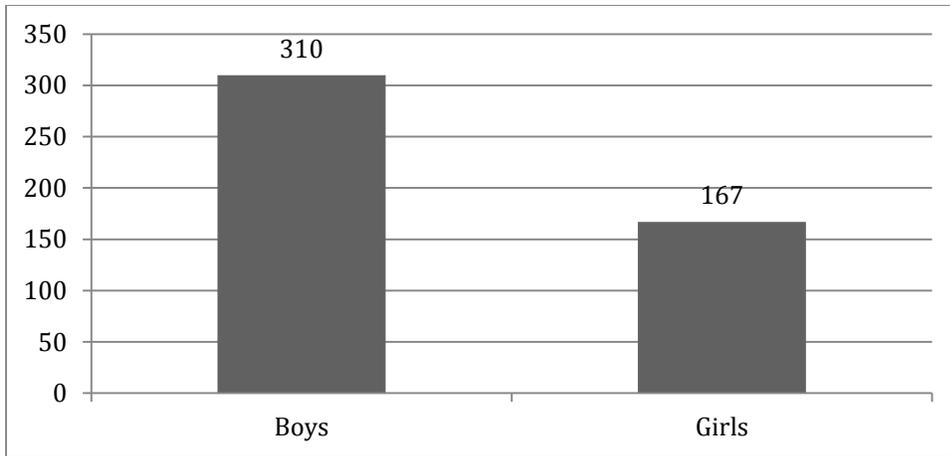


Figure 2. Total interactions of each gender

Teachers were generally fairly similar in the way that they interacted with their students for each of the two lessons. Of the 8 teacher participants, 6 teachers had a difference of less than 9 % between each lesson. Two participants had a difference of 20% or greater. Table 5 shows the consistency of the teachers in the amount that they interact with each gender during their two observations. It can be stated that most teachers generally interacted with boys and girls in a similar manner on both of the interactions. The average range between the two observations of each teacher is 8.63.

Table 5

Consistency of Teachers of Interactions with Each Gender in Lessons

	Lesson 1 – percentage of feedback given to boys	Lesson 2- percentage of feedback given to boys	Difference between the 1 st observation and 2 nd
Teacher 1	13.3%	14.7%	1.4
Teacher 2	29.6%	21.2%	8.4
Teacher 3	24.5%	32.9%	8.4
Teacher 4	5.6%	26.3%	20.7
Teacher 5	2.5%	-2.5%	5
Teacher 6	14%	12.5%	1.5
Teacher 7	16%	12.2%	3.8
Teacher 8	4.1%	-10.3%	20.6
Average			8.63

Note the percentages of feedback given to boys in the above columns is the percentage of feedback they received that was above their percentage of population in the class.

Research question two and three:

The second research question asks the following: What kinds of attention do teachers generally give boys—either positive, negative, or neutral, academic, or behavioural? The third research question asks: What kinds of attention do teacher generally give girls—either positive, negative, or neutral, academic, or behavioural? The researcher found that during the observations of boys, on average, 89.9% of the interactions were academic in nature, and 9.98% were behavioural. For boys on average, 23.81% were positive interactions, 14.68% negative, and 61.44% neutral. For girls, 94.52% were academic and 5.48% behavioural. 28.22% of girl interactions were positive, 9.74% negative and 62.1% were neutral. Tables 6 and 7 show the results for question 2.

Table 6

Academic and Behavioural Interactions of Boys as a Percentage

	Academic Interactions of Boys	Behavioural Interactions of Boys
Average %	89.92%	9.98%

Table 7

Positive, Negative and Neutral Interactions of Boys as a Percentage

	Positive Interactions of Boys	Negative Interactions of Boys	Neutral Interactions of Boys
Average %	23.81%	14.68%	61.44%

Tables 8 and 9 show the results for the girls, answering the third research question:

Table 8

Academic and Behavioural Interactions of Girls as a Percentage

	Academic Interactions of Girls	Behavioural Interactions of Girls
Average %	94.52%	5.48%

Table 9

Positive, Negative and Neutral Interactions of Girls, as a Percentage

	Positive Interactions of Girls	Negative Interactions of Girls	Neutral Interactions of Girls
Average %	28.22%	9.74%	62.1%

Of the interactions with their teachers, girls received a higher percentage of academic type interactions with their teachers (4.6 %), than boys. Boys receive a higher percentage of

behavioural feedback (4.6%). On average, the girls received a higher percentage of positive interactions than the boys (4.41 %). Boys received 4.94% more negative feedback than girls. Neutral feedback was marginally more prevalent for the girls, (0.66%). A comparison between the types of feedback given to each gender can be found in Table 10:

Table 10

Average Types of Interactions Received by Each Gender from Teacher Interaction

	Academic interactions compared to total interactions for that gender		Behavioural interactions compared to total interactions for that gender		Positive interactions for that gender		Negative interactions for that gender		Neutral interactions for that gender	
	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls
Average	89.92 %	94.52 %	9.98%	5.48%	23.81 %	28.22 %	14.68 %	9.74 %	61.44 %	62.1%

Table 11 shows the total raw number of interactions each gender received over the course of the 16 observations.

Table 11

Total Raw number of Interactions Received from Each Gender

	Number of Academic Interactions	Number of Behavioural Interactions	Number of Positive Interactions	Number of Negative Interactions	Number of Neutral Interactions
Boys	275	35	76	49	185
Girls	150	13	44	20	99

Discussion

Overview of the Study

The 1970s and 80s were a time where society was undergoing huge cultural transformation around gender bias. In the educational world, much research was conducted to see if and what kinds of gender bias were found in schools in that day. Research points to the

fact that boys received a lot more interactions from their teachers than girls, and in general, better quality interactions (more positive or negative, and less neutral) (Baker, 1986; Becker, 1981; Jones, 1989; Sadker & Sadker, 1986). Consequently, many believe that girls learned to become more passive participants in their education, due to the lack of teacher interaction. Little research has been conducted recently, on the topic, and what research there is, often focuses on the idea that boys are the recipients of bias in the classroom today. This study sought to find out if gender bias in the form of more or less teacher interactions does in fact, still exist today, and if so, what does it look like?

This research sought to find the answers to the following questions:

1. Do boys receive more teacher attention than girls?
2. What kinds of attention do teachers generally give boys—either positive, negative, or neutral, academic, or behavioural?
3. What kinds of attention do teachers generally give girls—either positive, negative, or neutral, academic, or behavioural?

To find the answers to these questions, 8 middle school teachers from a Christian school in southwestern British Columbia were filmed for 20 minutes, twice each. The 16 observations were then watched and each individual interaction with the teacher was either coded as academic, or behavioural, positive, negative or neutral, for each gender, separately. The percentage of interactions that each gender received was then compared to the percentage of students of each gender was found in each class, and the average difference between total interactions with a teacher was found for each gender.

Summary of the Findings

The researcher found that on average, boys received 13.58% more teacher interactions than girls did, compared to their overall number of students of each gender. This is consistent with previous research (Baker, 1986; Becker, 1981; Jones, 1989; M. Sadker & Sadker, 1986). Similarly, the kinds of interactions each gender received was similar to previous research. This study found that of the interactions of each gender, girls tended to receive more academic interaction than behavioural, while boys receive more behavioural interactions than girls overall. However, according to past research, boys tend to get more specific feedback (positive and negative), than girls, while girls tend to get more neutral feedback from their teachers. This was not found in this study. This researcher found that boys and girls received similar amounts of neutral feedback from their teachers. This difference in results may do due to the fact that in some of the observed lessons, very few female interactions were observed. This therefore skewed the results, creating artificially high percentages that affected the overall average. If the study were repeated with longer observational periods (e.g. 40 minutes), the researcher believes that the results may demonstrate that in fact, girls do receive more neutral feedback than boys.

Implications and Recommendations

Based on the given data, the researcher is confident to state that gender bias does exist in the classroom today. Boys tend to get more teacher interaction time than girls. This is significant because over time, girls learn to be passive participants in their own education, while boys are more encouraged to actively participate in their own learning. The unintended message sent by teachers is that a girl's idea is less valuable than that of her male classmates.

In this study, the researcher also found that boys receive more behavioural feedback from teachers. Although most teachers will say that boys are often more challenging behaviourally, it

is worth considering that perhaps a negative teacher-student relationship could be damaging male students' ability to learn in the classroom. For example, educators are highly concerned by the attainment gap between males and females in literacy. Some may ask: Could a negative teacher relationship be adding to this problem? (Marshall & Reinhartz, 1997; Merrett & Wheldall, 1992).

While observing the lessons, the researcher noticed that the teacher participants were unaware that they were giving more attention to male students with more teacher time. As well, other examples of gender bias were also observed during the lessons that were not noted in the observational frequency charts, but were detailed in notes. For example, one teacher was observed during a class game, to choose a boy every time to be the key player, and then asked the boy to choose a female to play against. As well, a teacher asked all male students to come get a sheet of paper, and also get one for a female student. Overall, gender bias is alive and still working in middle school classrooms today.

There is evidence that teacher training can be effective in assisting teachers to interacting in a non-biased way with students of both genders. Lundeberg (1997), in her study of 48 pre-service teachers, saw a difference in the way that teachers were able to recognize gender inequality in the classroom, and change their belief systems about gender roles after they underwent specific teacher training.

This researcher recommends that all teachers receive up-to-date training about gender bias in education as part of their pre-service teacher education. As well, the issue of gender bias should be presently addressed in in-service training in schools. Although subtle and often even undetected, gender bias is still present in our schools. The cost of this bias to both boys and girls is often underestimated or even ignored. Educating teachers about the reality of this bias in the classroom is the only way that we can move forward to bring equality into the classroom.

Limitations of the Study

While the researcher took great care to plan and implement this action research, there are a number of factors that could have affected the findings. The data that served as the basis of this study was from only one school, with a fairly homogenous population. In order to better apply the findings, more research should be conducted in a variety of schools in the area, as well as in other locations.

As well, only middle school classrooms were used to conduct the research. In order to better apply the findings, a variety of grade levels, from kindergarten through to grade twelve should participate in the study.

Additionally, 20-minute observations were sometimes not long enough to find accurate results. In some of the observational cases, in twenty minutes, the girls had only received 4 overall interactions with their teacher. In one observation, the girls only received 1 interaction with the teacher in the entire 20 minutes. This is a significant limitation to the study, as it skewed the results, particularly in the findings of what types of interactions each gender has with the teacher. To make the results of the research more accurate, the researcher would need to observe the teacher interacting with the student until she observed a minimum amount of interactions with both genders, (e.g. at least 10 interactions).

In addition, the researcher had to make many subjective decisions regarding what kind of feedback the teacher was giving to his or her students. Due to different personalities and teaching styles, some teachers seemed to give significantly more positive feedback to his or her students, and some, a lot more neutral feedback. For example, one teacher was not observed giving any positive feedback at all during the two lessons. This does not mean that the teacher was negative. It means that the researcher's perception of what is considered positive or

negative affected the results of the research. To ensure greater accuracy, the researcher would need to have greater interrater reliability by having more than one person watch the films and code the results, and then find the average of the results between the different researchers.

As well, the students and teachers were aware of the cameras and the fact that they were being filmed. This was an unavoidable limitation in this study because it is possible that participants' behaviours were affected by the camera's presence.

Finally, the scope of this study was to only investigate the percentages of interactions between teachers and each gender, as well as the types of interactions. Future researchers might want to increase the scope of the research by investigating whether the gender of the teacher impacts gender bias.

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Appendix A

Observational Tally Chart

Teacher name: _____

Observational visit # _____

Number of students in class (on day of observation): _____

Number of boys present: _____

Number of girls present: _____

Feedback for Boys **Overall total number of interactions:** _____

	Academic	Behavioural	Percentage
Positive			
Negative			
Neutral			
Percentage			

Feedback for Girls **Overall total number of interactions:** _____

	Academic	Behavioural	Percentage
Positive			
Negative			
Neutral			
Percentage			

Appendix B

Consent Form for Voluntary Adult Participation

Study Title: Middle School Investigation

Investigator: Kaily Stevens, student in Masters in Education, Dordt College; (604) 812-9050

Purpose: You are invited to participate in a study that will examine ways in which teachers interact with students. You have been selected to participate in this study due to your extensive experience teaching middle school, your professionalism, and your willingness to keep making Langley Christian Middle School the best school for all students and teachers.

Procedures: The researcher will ask you to film two, 20 min portions of a lesson on an iPad. The iPad will be set up somewhere in the room where it is not overly noticeable. To prevent students from taking a lot of notice of the camera, the researcher will ask you to set it up the day before, and not film. After a few sessions of “fake” filming, the actual footage will be taken. Please choose a lesson where you and students are interacting as much as possible. A group discussion or questioning activity would be optimum. Once you have filmed two 20 minute sessions, the researcher will come collect the film from you.

Benefits/Risks: There are neither direct benefits for participating nor any foreseeable risks with any of the procedures described above. In general, the study will benefit the school because it will give insight into teacher and student interactions. There will be neither payment made for participation in this study nor any costs to you for participating.

Confidentiality: All information collected about you will be kept strictly confidential and accessible only to the investigator and faculty sponsor, except as may be required by law. If any publication results from this research, results will be written in a way that protects your identity. All films will be deleted as soon as the data is collected.

Your Rights: If you decide to participate, you are free to withdraw your consent and to stop participation at any time with no penalty to you. You may request a copy of this form to keep.

If you have any questions, please call me, Kaily Stevens at (604) 812-9050. If you have any further inquiries regarding your participation in this study, please contact my faculty advisor, Pat Kornelis at: pat.kornelis@dordt.edu

In conclusion, you are making a decision whether or not to participate. Your signature below indicates that you have decided to participate, having read the information provided above and having had your questions answered.

Signature of Participant

Date

Signature of Investigator

Appendix C

Examples of Different Types of Teacher Interactions

	Positive	Negative	Neutral
Academic	<p>The teacher called on a student to answer an academic question and the teacher responded with praise.</p> <p>Eg. “That’s excellent Brian.” “Great answer, Sally.”</p>	<p>The teacher called on a student to answer an academic question and the student’s response was incorrect. The teacher therefore corrected the student.</p> <p>Eg. “Good try Brian, but I want you to think through those calculations again.” “Interesting, but not quite correct, keep thinking about it Sally.”</p>	<p>The teacher called on a student to answer an academic question and the teacher’s response to the student was neither positive nor negative. For example, the teacher might have just repeated the student’s answer or said a non-committal phrase like, “Ok.” The teacher might have even not said anything, but just moved on to the next question or comment.</p>
Behavioural	<p>The teacher made a comment to a student about their good or desired behaviour.</p> <p>Eg. “You are very focused in your work today, Brian.” “Thank you for putting away the equipment, Sally.”</p>	<p>The teacher made a comment to a student about bad or undesirable behaviour.</p> <p>Eg. “Please put away your ruler, Brian, and focus on the board.” “Please use your inside voice, Sally.”</p>	<p>The teacher made a comment to a student about their behaviour that was neither positive nor negative.</p> <p>Eg. “Was that you, walking through the hallway, Brian?” “Do you need to get any supplies from your locker, Sally?”</p>