

Running head: SCHOOL CONNECTEDNESS

The Impact of School Connectedness on High School Students' Academic Achievement

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Action Research

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Professional Responsibility: This project has been reviewed by collegial professional peers and has been submitted for on-line publication before being evaluated by faculty members from Portland State University. I am the author and take full responsibility for the project's contents and quality. This work serves as a baseline for my professional school counselor skills and demonstrates what I have done to develop and/assess my actions directed toward serving students and schools. In other words, this is a snapshot or one indicator of my work at this stage of my career.

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The Impact of School Connectedness on High School Students' Academic Achievement

Abstract

This action research project is an examination of the relationship between school connectedness and academic achievement in students in grades nine through twelve at Rolling Hills High School.

Introduction

Rolling Hills High School (RHHS) is a public high school located in a Pacific Northwest city, which has a population within the city limits near 540, 000 and a metropolitan population approaching 2,000,000. RHHS is approximately six miles southwest of the city center in a wealthier section of the city and is comprised of 249 students. Of these 249 students, approximately 40 percent reside within the district boundaries, and the remaining 60 percent are transfers from other districts. Families of RHHS students appear to be predominately white and of upper-middle class socioeconomic situations. RHHS students also tend to be high achieving with an average Grade Point Average (GPA) of 3.27 and 68 percent of the student body having a GPA of 3.0 or better.

The overriding mission of RHHS is to teach students to be deliberate about their educational experiences and to care for each other and for their community. To that end, RHHS offers smaller class sizes and seeks to offer more opportunities for leadership than may be available in a larger school setting. Additionally, RHHS seeks to keep students engaged in the learning process through experiential learning and group projects when appropriate. Fostering connections is key to keeping students engaged in the educational process, and RHHS seeks to connect students to each other and their community through its curriculum. All students are required to fulfill a minimum number of community

service hours each school year. RHHS also offers Field Studies experiences every year that consist of varying opportunities for students to focus on connecting with each other, the school, and the community.

Currently, politicians, parents, and educators alike are concerned with the level of violent behavior in schools. Additionally, due to the recent emphasis on test scores as a measurement for both student and school success, all school activities must be justified to an academic purpose. In order to address these issues, many factors are being studied to help determine what impacts students' abilities to be successful. School connectedness is among the factors being examined. With these factors in mind, this project was developed to assess what impact feeling connected at school has on the academic achievement of RHHS students.

Literature Review

Due to the variety of factors that can contribute to school connectedness, it may come across as an elusive concept and, over the years, has been referred to as school engagement, school attachment, and school bonding (Libbey, 2004). However, school connectedness can be summarized as the extent to which students feel cared for in school and the extent to which students care about their school (Whitlock, 2006). School connectedness crosses cultural barriers and has been shown to have an impact on student success regardless of race, ethnicity, sex, or socioeconomic situation.

There are a myriad of factors that contribute to feelings of connection, including behavioral and academic expectations, a general feeling of belonging at school, acceptance of differences, perception of discipline, support from teachers, school climate, connection to peers, feeling safe at school, communication, enjoying school, school

traditions, respect, and school involvement, both in the classroom and in extracurricular activities. There are also factors that are detrimental to the development of school connectedness. For the most part, these issues are the lack of the presence of the factors that contribute to a positive school environment, specifically, peer harassment, physical aggression, relational aggression, students not liking school or not feeling supported or successful at school, violence, isolation, absenteeism, and students feeling unsafe at school.

Current research (Blum, 2005) demonstrates that nearly one half of all high school students feel disconnected from school and feel disenchanting with their school experiences. Factors that contribute to these feelings include isolation from peer group and feeling unsafe at school. Feeling connected to the primary learning environment is important at any school level, but it is especially important during adolescence. Given that so many changes are occurring within adolescents during these years, it is very important that other forces in their lives be stable so that they may have meaningful and educationally purposeful experiences. So much of adolescents' lives are spent in school, and, for many, much of their senses of self worth comes from their feelings about their success or lack thereof in the school setting. Students will carry forward what they learn during this time in their lives, so it is crucial to their development that they learn how to connect with others, that they are valuable and capable members of society and that they can be successful.

In a 2003 study of peer harassment, school connectedness, and academic achievement, Eisenberg, Neumark-Stainer, & Perry found that adolescents who experience maltreatment from their peers at school are less likely to want to be in school,

and therefore less likely to experience school connectedness. That same study also suggested that those students who do not like school are more likely to be subjected to peer harassment and that 'B' students are among the least likely to experience mistreatment at school. This further illustrates that feelings of safety and belonging at school are key to student success. Safety, whether it is physical or emotional, is key to feeling connected to any environment, and school is no exception. If students do not feel safe at school, they will not feel connected to the school, and this will lower the likelihood that they will be able to focus or be engaged in the learning process.

Students who feel more connected to school tend to perform better in the classroom. Just as societal interactions impact the success of adults in the working world, the school atmosphere impacts students' ability to be academically successful. Booker (2004) states that "student academic achievement is a direct result of dynamic interactions occurring between individuals in their social contexts." In the case of students in school, the school setting is the social context. One's sense of self-worth has been shown repeatedly to have an effect on one's ability to be successful, and this is no different in the school setting. The school environment has an impact unmatched by any other on students' sense of belonging and, therefore, will affect their academic success.

In addition to impacting classroom performance, school connectedness also has an impact on other aspects of life including school behavior, attendance, and involvement, as well as potential to engage in behavior that may compromise one's health. Furthermore, the presence of physical aggression, relational aggression, and victimization in schools has also been linked to school connectedness, and the higher the presence of these destructive forces, the lower the feelings of school connectedness

(Wilson, 2004). Additionally, the presence of aggression at school, regardless of the form, detracts from the safety of school. Blum (2005) further states that students who feel connected at school are not as likely as their less-connected counterparts to use substances, demonstrate emotional anguish, be involved in violent or deviant behavior, attempt suicide or entertain suicidal thoughts, use a weapon, engage in sexual intercourse at an early age, or become pregnant.

There is a need for educators to put school-based programs and policies in place that will address the specific factors that contribute to or detract from school connectedness. These programs should be directed to the whole student body in order to increase awareness among all students. Through this type of student body approach, well-connected students may have opportunities to reach out to other students who are not as connected, and students receive the message that they are a valued part of the school. In terms of school policy, it is important to have policies that make students feel safe at school. However, zero-tolerance policies often serve to alienate students and create unwelcoming school environments. Since the purpose of schools is to educate and prepare students for life beyond the classroom, school policies should be educationally purposeful and not just punitive in nature so that students can learn valuable lessons that will stretch beyond the situation should they be found in violation of these policies. Otherwise, they learn that there is no hope (Blum, 2005).

In addition to programs and policies, there are other avenues that could be explored as well. While smaller class size makes sense so teachers are able to offer students more individualized attention, class size is not as important as the environment within the classroom. The size of the class does not matter if the teacher is not able to

connect with the students and keep them engaged. There are many ways that teachers can keep their students engaged. Throughout the educational process, it is important that teachers seek to meet their students where they are and keep the individual needs of their students in mind (Blum, 2005).

Educators can work to help foster school connectedness in students. They can do this by encouraging students to be creative and by providing significant opportunities for participation and for growth and development. They can also infuse the curriculum with stimulating and engaging activities. Teaching styles can be adjusted to better meet different student learning styles. In terms of presenting information to students, teachers can incorporate team teaching and group work, providing different ability levels are represented throughout all groups, and make the learning process more interactive. Making learning applicable and meaningful for the students so that they may be able to make a connection between what they are learning and their own lives will also help to keep students engaged in the learning process. Teachers can further enhance feelings of school connection by keeping parents well-informed and recognizing good behavior and classroom accomplishments among students, parents, and fellow educators. Additionally, by paying close attention to the students, teachers are better able to connect with students and to recognize and encourage student potential. School connectedness can also be developed through consistent communication between teachers and students. This begins with teachers presenting unequivocal goals for the learning process and consistent classroom expectations and routines. Teachers have an amazing and extraordinary opportunity to connect with students and to enhance their school experiences (Blum, 2005; Eisenberg, Neumark-Sztainer, & Perry, 2003; Whitlock, 2006; Wilson, 2004).

Since it is so multifaceted, the idea of school connectedness speaks directly to developing the academic, social, and personal aspects of students under Oregon's Framework for Comprehensive Guidance and Counseling Programs [OFCGCP] (2003). Schools should be safe places where students can develop holistically. According to Oregon's Framework, one component of this is having "guidance and counseling as an integral part of the educational program in promoting student learning and transitions to a student's next steps" (OFCGCP, 2003). An overriding goal of the entire educational system is to provide *all* students with opportunities for growth and development. School connectedness serves to enhance students' abilities to be fully involved in the classroom and to have positive interactions with peers, and prepares students to be successful, functioning members of society, furthering its advancement clearly fulfills the Learning to Live, Learning to Contribute, and Learning to Learn domains of student development of Oregon's Framework.

Development, Implementation, and Analysis

The researcher developed an instrument designed to assess school connectedness. This instrument itself consisted of 33 items. Twenty-five of these items were scored using a five-point Likert Scale as follows: Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), and Strongly Disagree (1). The remaining eight items required respondents to provide demographic information (see Appendix).

Information regarding execution of this study was disseminated to parents and guardians of all 249 students at RHHS. All parents and guardians were mailed information about the study along with consent forms. Of the possible 249, 48 students returned parental consent forms and gave their assent to participate in the study. These

students were then entered into a secure online database containing their names and email addresses. They were then emailed an invitation containing a link to the survey. Of these 48 students, 33 completed the entire survey and two completed the demographic information, but did not answer any of the scored items. This group of 35 respondents consisted of 19 girls and 16 boys, 12 ninth graders, seven 10th graders, 10 11th graders, and six 12th graders. Ages of participants ranged from younger than 14 years old to 18 years old. A majority of these students (94 percent) considered themselves to be average or above average students, and only seven said they had moved or changed schools within the last 12 months.

Through management of the secure online database, student responses were able to be tracked for scoring and pairing of scores with cumulative GPAs. Once scores were paired with respective GPAs, all identifying information was deleted and respondents were assigned pseudonyms. For graph comparison purposes, GPAs were converted to a 125-point scale by multiplying each one by 31.25 (see Figure 1).

Scores were computed and analyzed to determine descriptive statistics and significance. GPAs of the participants ranged from 1.982 to 4.0 on a 4.0 scale, with a mean of 3.528, modes of 3.9 and 4.0, a median of 3.804, and a range 2.018. Scores ranged from zero (zeroes accounted for by two respondents who completed the demographic portion of the survey, but did not answer any of the 25 scored items) to 121 out a possible 125. The average score was 92.6, the mode was 108, the median was 98, and a range of 121. Pearson-Product Moment Bivariate Correlation Coefficient was .377 with an alpha level of .013 (1-tailed).

Discussion

Based on the range of scores and GPAs, the students at RHHS seem to be relatively well connected to their formal educational environment and high achievers. However, the researcher noticed that the results are skewed due to a non-representative sample. No grade level was proportionately represented in the sample. The ninth and 11th grade students were overrepresented and the 10th and 12th grade students were underrepresented. The average GPA of the respondents was 3.528 while the school's average GPA is 3.27. Only 17 percent of sample had lower than 3.0 compared with 32 percent of the total student body.

In addition to having a non-representative sample, the response rate was lower than what the researcher had anticipated. Only 19.3 percent of the potential respondents agreed to participate, and 73 percent of those did so, resulting in an overall response rate of 14 percent. One possible reason for this was that the researcher was out of town for the last few days that students could return their permission slips and thus unavailable to answer questions about the study. The low response rate may also be contributed to the method used to get consent. Due to available technology, most communication from the school is electronic so the students and families are not accustomed to receiving mail from the school the school. Thus, it is possible that information from the researcher may have been overlooked thinking that it was a duplicate of something that had already been received electronically. Another factor to consider is that the principal was having the students fill out a student satisfaction survey around the same time, and that could have caused some confusion. The response rate may also be able to be increased by modifying the survey so that no identifying information is used and the results are not tracked to the

respondents, and the researcher instead relies on the students to self report their GPAs so parental consent may not be necessary.

While the participants appear to be well connected to the school, the researcher noticed several statements with multiple Neutral, Disagree, or Strongly Disagree responses:

- I feel like my contributions to this school are valued.
- I feel like my teachers let me know my contributions are valued.
- I enjoy school.
- I feel like I am part of this school.
- I can be successful at this school.
- Adults at this school listen to student concerns.
- I feel supported at school.
- I have pride in this school.
- Adults at this school respond to student feedback.
- I feel like I fit in at this school.

Although pre-existing literature shows otherwise, this particular study did not find any direct correlation between students' feelings of connectedness to their school and their respective GPAs. This could be attributed to flaws in with the survey or to the fact that the population examined is not representative of the general high school student population. However, based on the responses, there are still things that can be done to increase students' feelings of connection to school. At RHHS, the researcher recommends that a formal process for soliciting and analyzing student feedback be developed. It is also recommended that Field Studies be reevaluated. If getting students

connected to the school, each other, and the community is to continue to be the goal of the experience, it would make sense to do it early in the school year, to have everyone participate in the same Field Studies experience, and to spend a portion of the time doing community service in the community around the school. Reevaluating the extracurricular activities offered at RHHS in conjunction with a student interest survey would also be recommended to be sure that the available activities are of interest to the student population. Advisory, weekly classroom guidance sessions conducted by all teachers, is another area at RHHS the researcher would recommend undergo further examination. Currently, there is no consistent curriculum used in Advisory. It is recommended that the counseling office be more directly involved in the evaluation and planning of Advisory since it is a prime opportunity to engage students in a non-academic setting and really connect with their experiences.

If ever given the opportunity to repeat this type of study, the researcher would approach it differently. The instrument would be modified to include items regarding race, ethnicity, school attendance, and substance use. Timing, communication style, and other factors that could affect the response rate would also be more heavily considered in implementation. Replicating this study with a more heterogeneous population would give the researcher valuable data for comparison and a better idea of any flaws in study design.

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Appendix
School Connectedness Survey

School Connectedness Survey

The following data is being compiled as part of Sherlive Swanson's Portland State University Graduate School of Education School Counseling action research project.

This questionnaire has been designed to try to measure RHS students' feelings about their school environment and whether or not any connection can be made between those feelings and how students do in class.

Please tell us a little about yourself.

I am in grade _____9 _____10 _____11 _____12

I am _____ younger than 14 years _____14 years _____15 years _____16 years

_____17 years _____18 years _____ older than 18 years

I am _____Female _____Male

I consider myself to be a(n)

_____Above average student _____Average student _____Below average student

During the past 12 months, I have moved

_____0 times _____1 time _____2 or more times

During the past 12 months, I have changed schools

_____0 times _____1 time _____2 or more times

Overall, my grades are

_____As _____As & Bs _____Bs _____Bs & Cs _____Cs

_____Cs & Ds _____Ds _____Ds & Fs _____Fs

I estimate my GPA to be _____.

Please respond to the following statements based on whether you Strongly Agree (SA), Agree (A), are Neutral (N), Disagree (D), Strongly Disagree (SD) with each one.

1. The teachers at this school treat students fairly.

SA A N D SD

2. I feel my contributions to this school are valued.

SA A N D SD

3. I feel safe in this school.

SA A N D SD

4. I feel like my teachers let me know my contributions are valued.

SA A N D SD

5. I am involved in extracurricular activities through this school.

SA A N D SD

6. I have friends at this school.

SA A N D SD

7. I feel close to people at this school.

SA A N D SD

8. I feel like I can be myself at school.

SA A N D SD

9. I am happy at this school.

SA A N D SD

10. I feel going to school is important.

SA A N D SD

11. I am learning useful information in school.

SA A N D SD

12. I enjoy school.

SA A N D SD

13. I feel like I am part of this school.

SA A N D SD

14. I can be successful at this school.

SA A N D SD

15. Adults at this school listen to student concerns.

SA A N D SD

16. Teachers at this school care about me.

SA A N D SD

17. I want to do well in school

SA A N D SD

18. I feel supported at school.

SA A N D SD

19. I have pride in this school.

SA A N D SD

20. I participate in class.

SA A N D SD

21. I get along well with my school peers.

SA A N D SD

22. Adults at this school respond to student feedback.

SA A N D SD

23. There is at least one adult at this school who believes I will be successful.

SA A N D SD

24. I find my coursework challenging.

SA A N D SD

25. I feel like I fit in at this school.

SA A N D SD

Figure Captions

Figure 1. Comparison of GPA and total school connectedness scores using a 125-point scale for both scores.

Figure 2. Total responses by category as follows: Strongly Agree (25.8%), Agree (52.9%), Neutral (14.5%), Disagree (4.7%), Strongly Disagree (2.1%)

Figure 3. Summary of survey responses for items one through eight.

Figure 4. Summary of survey responses for 25 scored items.

Figure 5. Detailed summary of participants' responses.

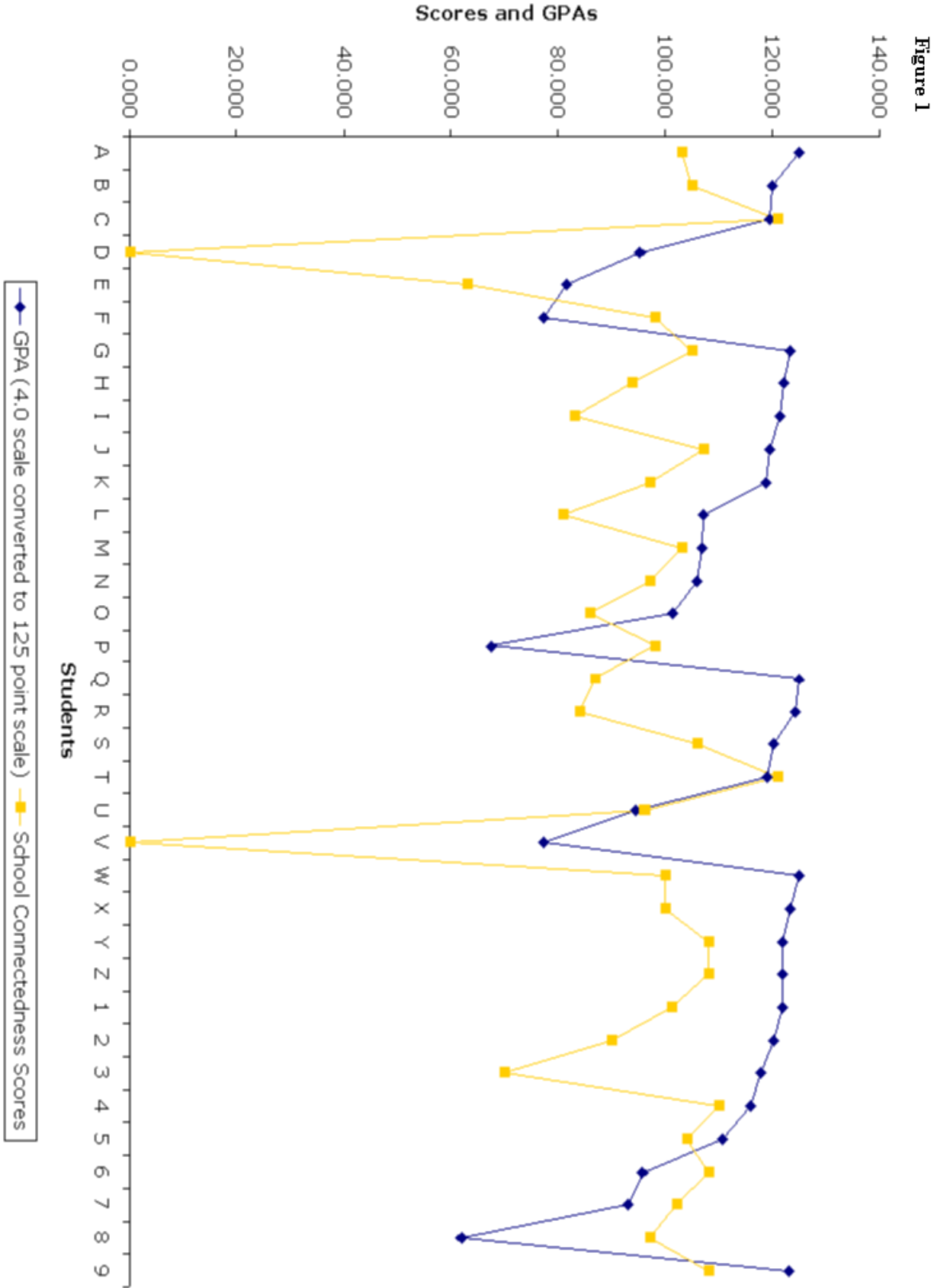


Figure 2

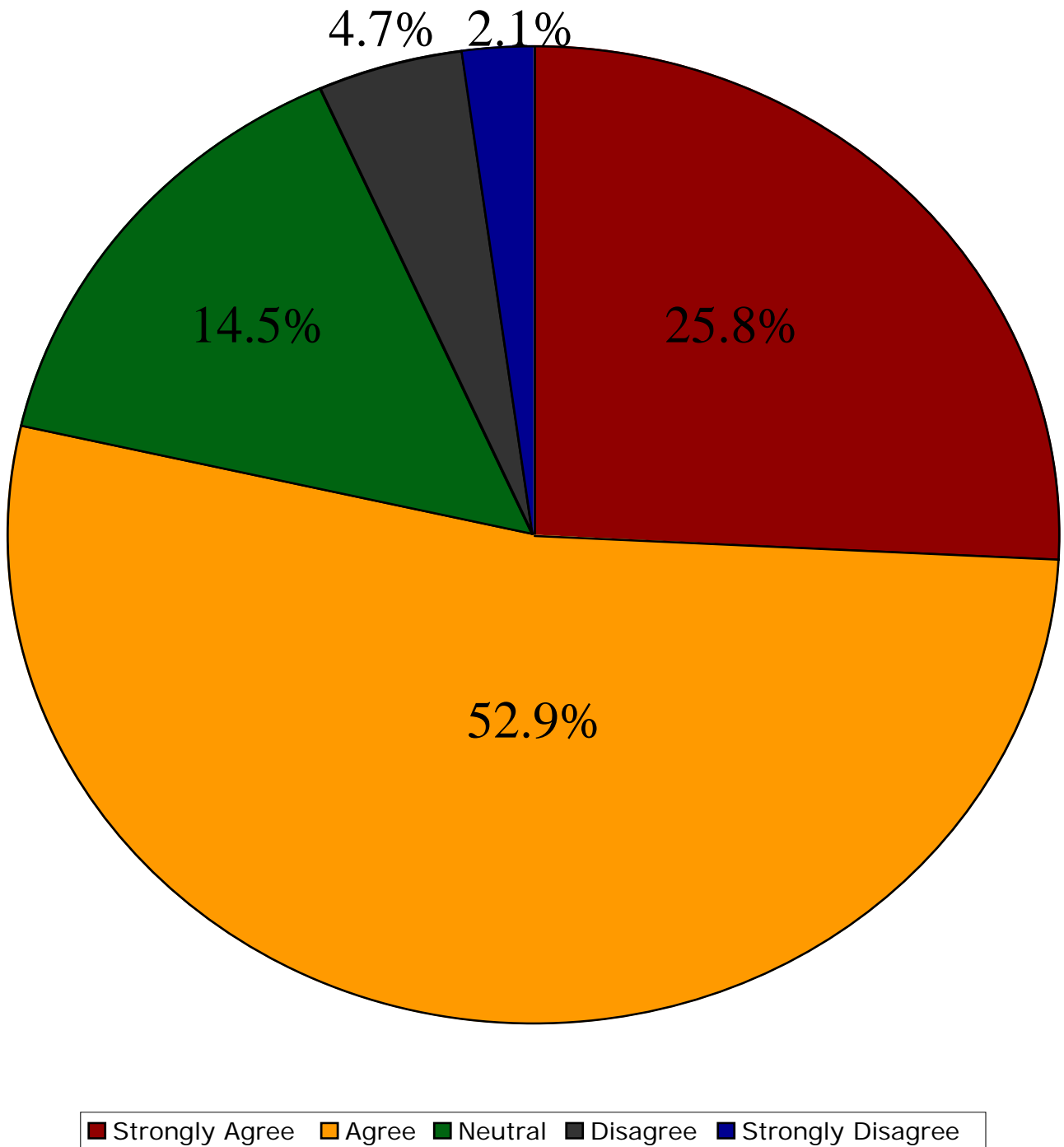


Figure 3

I am in grade	Response Total
9	12
10	7
11	10
12	6
I am	Response Total
younger than 14 years	1
14 years	3
15 years	10
16 years	8
17 years	10
18 years	3
older than 18 years	0
I am	Response Total
Female	19
Male	16
I consider myself to be a(n)	Response Total
above average student	19
average student	14
below average student	2
During the past twelve months I have moved	Response Total
0 times	33
1 time	2
2 or more times	0
During the past twelve months I have changed schools	Response Total
0 times	28
1 time	7
2 or more times	0
Overall my grades are	Response Total
As	16
As & Bs	8
Bs	3
Bs & Cs	6
Cs	2
Cs & Ds	0
Ds	0
Ds & Fs	0
Fs	0
I estimate my Grade Point Average (GPA) to be	Response Range
	2.0-4.0 (4pt scl)

Figure 4

Scored Item	SA	A	N	D	SD
The teachers at this school treat students fairly.	5	22	8	2	1
I feel my contributions to this school are valued.	3	19	8	2	1
I feel safe in this school.	5	22	5	0	0
I feel like my teachers let me know my contributions are valued.	4	18	4	5	1
I am involved in extracurricular activities through this school.	10	16	4	1	2
I have friends at this school.	19	10	4	0	0
I feel close to people at this school.	15	11	5	2	0
I feel like I can be myself at school.	10	16	6	1	0
I am happy at this school.	6	19	6	2	0
I feel going to school is important.	13	14	4	0	1
I am learning useful information in school.	9	19	5	2	0
I enjoy school.	3	20	4	5	1
I feel like I am part of this school.	8	17	6	2	0
I can be successful at this school.	15	11	7	0	0
Adults at this school listen to student concerns.	5	20	3	2	3
Teachers at this school care about me.	6	19	5	3	0
I want to do well in school.	19	12	1	0	1
I feel supported at school.	5	19	7	2	0
I have pride in this school.	3	15	10	3	2
I participate in class.	12	17	4	0	0
I get along well with my school peers.	11	18	4	0	0
Adults at this school respond to student feedback.	2	17	9	3	2
There is at least one adult at this school who believes I will be successful.	18	14	1	0	0
I find my coursework challenging.	2	22	3	3	3
I feel like I fit in at this school.	7	19	6	1	0

Figure 5

name	score	gpa	grade	I am	I am	I consider myself to be a(n)	moved	changed schools	Overall grades	I estimate my GPA to be	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	total	
A	103	4.000	12	17 years	Male	above average student	0 times	0 times	As	4.0+ 3.86 (unweighted) 4.03 (weighted)	4	3	4	3	4	5	5	5	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	103		
B	105	3.843	12	18 years	Female	above average student	0 times	0 times	As	4.03	3	4	5	4	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	105	
C	121	3.829	12	18 years	Female	above average student	0 times	0 times	As	4.03	5	5	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	121	
D	0	3.047	12	18 years	Male	average student	0 times	0 times	Bs & Cs	3.1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	
E	63	2.611	12	17 years	Male	below average student	0 times	0 times	Cs	2.59	1	1	3	1	2	3	2	3	3	4	3	2	2	3	3	2	2	4	2	3	3	2	4	1	3	63	
F	98	2.475	12	17 years	Female	above average student	0 times	0 times	Bs & Cs	2.95	4	4	4	5	5	5	4	5	5	3	2	4	5	3	1	4	4	3	4	4	5	4	4	4	4	98	
G	105	3.947	11	16 years	Female	above average student	0 times	0 times	As	3.96; weighted 4.04	4	3	4	4	3	5	5	4	4	5	4	4	4	5	5	4	5	3	4	4	5	4	4	4	4	105	
H	94	3.912	11	16 years	Male	above average student	0 times	0 times	As	3.9	4	4	3	4	1	5	5	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	94	
I	83	3.890	11	17 years	Female	above average student	0 times	0 times	As	unweighted: 3.85 weighted: 4.4	4	2	4	2	5	4	3	4	3	4	4	4	3	3	1	2	5	2	3	5	4	2	3	4	3	83	
J	107	3.830	11	16 years	Female	above average student	0 times	0 times	As & Bs	3.8	5	4	5	4	4	5	4	4	4	5	5	3	4	5	4	5	4	5	4	4	3	4	4	4	4	107	
K	97	3.804	11	17 years	Male	above average student	0 times	0 times	As & Bs	3.8	4	4	4	4	4	4	4	4	3	3	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	97	
L	81	3.430	11	17 years	Male	average student	0 times	0 times	As & Bs	3.4	2	3	3	2	5	5	5	3	3	4	1	3	4	1	2	5	3	1	5	5	1	5	1	4	81		
M	103	3.420	11	17 years	Female	above average student	0 times	0 times	As & Bs	3.42	4	4	4	4	4	3	3	4	4	5	4	4	5	4	5	4	5	4	4	5	4	3	5	4	4	103	
N	97	3.390	11	17 years	Male	above average student	0 times	0 times	As & Bs	3.65	4	4	4	4	4	4	4	3	4	4	4	4	4	4	2	4	4	4	4	5	4	2	5	4	4	97	
O	86	3.240	11	17 years	Female	below average student	1 time	1 time	Bs & Cs	3.4	4	3	3	3	4	5	4	4	3	3	3	2	3	3	4	3	4	3	3	4	4	4	4	4	3	86	
P	98	2.162	11	16 years	Female	average student	0 times	0 times	Cs	2	3	2	4	2	5	5	5	5	4	4	4	4	2	5	3	3	3	3	4	5	5	3	5	4	5	98	
Q	87	4.000	10	15 years	Female	above average student	0 times	0 times	As	4	4	3	5	4	4	3	2	3	2	3	5	4	4	4	5	4	5	4	4	3	4	4	4	4	3	87	
R	84	3.979	10	16 years	Female	above average student	0 times	0 times	As	3.8	4	3	4	2	3	3	2	3	2	4	3	3	3	4	4	4	4	4	4	4	4	4	4	4	3	2	84
S	106	3.852	10	16 years	Female	average student	0 times	0 times	As	3.9	4	4	4	4	4	5	5	4	5	4	4	4	4	4	5	4	4	5	4	3	4	5	3	4	4	5	106
T	121	3.808	10	16 years	Female	above average student	0 times	0 times	As	3.79	5	4	5	4	4	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	121	
U	96	3.031	10	15 years	Male	above average student	0 times	0 times	Bs	3.2	3	4	4	4	4	3	4	3	4	3	4	4	4	3	5	3	5	3	5	3	2	5	4	4	4	96	
V	0	2.472	10	17 years	Male	average student	0 times	0 times	Bs & Cs	duno																									0		
W	100	4.000	9	younger than 14 years	Female	above average student	0 times	0 times	As	4.0 unweighted 4.3 weighted	4	4	4	4	4	4	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	100	
X	100	3.950	9	15 years	Male	above average student	0 times	0 times	As	unweighted 3.9/4, Weighted 4.5/4,4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	100	
Y	108	3.900	9	14 years	Female	above average student	0 times	1 time	As	3.9	4	4	4	3	5	5	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	108	
Z	108	3.900	9	14 years	Female	average student	1 time	1 time	As	3.9	5	4	4	4	4	5	5	5	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	108	
1	101	3.900	9	15 years	Female	average student	0 times	1 time	As & Bs	3.8; 3.9 or 4.0	4	4	4	4	4	3	5	5	4	4	5	4	3	4	5	4	4	4	4	4	3	4	3	4	4	101	
2	90	3.850	9	14 years	Male	above average student	0 times	0 times	As	4.0 or 3.9	4	3	4	3	4	4	4	4	4	4	4	4	4	3	4	4	3	4	3	4	3	4	3	4	2	90	
3	70	3.770	9	15 years	Male	average student	0 times	1 time	Bs & Cs	I really don't know (nor do I care!)	2	3	4	2	1	5	5	4	2	1	2	2	2	2	3	2	3	1	3	1	4	4	3	5	2	70	
4	110	3.708	9	15 years	Female	average student	0 times	0 times	As & Bs	around 3.9	4	5	4	5	5	4	4	4	4	4	4	4	4	4	5	5	5	5	4	4	4	4	4	4	4	110	
5	104	3.540	9	15 years	Female	average student	0 times	0 times	As & Bs	3.5	4	4	4	4	4	5	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	104	
6	108	3.066	9	15 years	Male	average student	0 times	1 time	Bs	3-3.5	5	5	5	5	4	4	5	5	5	5	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	108	
7	102	2.980	9	15 years	Male	average student	0 times	0 times	Bs	3.75	4	4	4	4	4	5	4	4	4	4	4	3	3	4	4	4	4	4	4	4	4	4	4	4	4	102	
8	97	1.982	9	15 years	Male	average student	0 times	1 time	Bs & Cs	3	4	4	4	4	3	4	3	3	4	5	4	4	4	4	4	3	4	4	4	3	4	3	5	5	3	97	
9	108	3.940	10	16 years	Male	above average student	0 times	0 times	As	3.95	4	4	4	4	4	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	108	

mean	92.6	3.528
mode	108	3.9, 4.0
median	98	3.804
range	121	2.018
σ	26.13	0.574728
r	0.377	
alpha	0.013	
(1-tailed)		