

A Quantitative Study of Middle School Students' Perception of the Impact of Parent Involvement on Academic Intrinsic Motivation

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Abstract

Motivation plays a crucial role in student's academic growth and research shows that students who are intrinsically motivated tend to achieve higher academic growth (Mendoza, 2012). Self determination theory (Gagne & Deci, 2005) proposes a continuum that shows the connection of intrinsic motivation with extrinsic motivation. Studies show that parental involvement is one of the factors that results in academic achievement of the student (Hill & Tyson, 2009; Cheung & Pomerantz, 2012), however, not enough research has been done to establish its connection with academic intrinsic motivation. Proposed research helps to investigate the relationship between perceived parental involvement of middle school students on their academic intrinsic motivation. A convenient sample of approximately 700 middle school students of an urban district in mid-western part of the United States was used. 50 students with both student and parent consent form were allowed to participate in the research. A quantitative study was conducted using a Likert scale survey to measure the impact of students' perceived parental involvement on their academic intrinsic motivation. A linear regression analysis helped to establish a positive significant relationship between parental involvement and academic intrinsic motivation which help to create awareness among parents regarding their impact on children's academic growth.

Keywords: Intrinsic Motivation, Middle School, Parental Involvement

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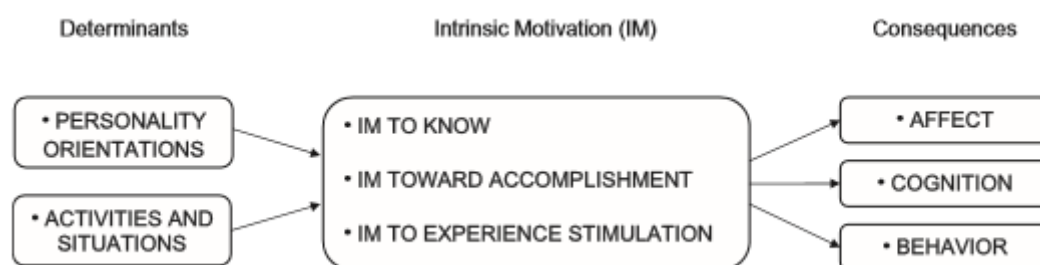
Introduction

Motivation that helps the individual experiences satisfaction by discovering, exploring, learning concepts and solving problems rather than extrinsic rewards or benefits. The extrinsic motivators are offered in association, but not directly related to a task, such as good grades or acceptance into academic honors societies. Intrinsic motivation is also identified as a goal-oriented motivation (Woolley & Fishbach, 2018). Intrinsic rewards in an academic setting can help students become more motivated to study more, turn in work on time, and do well on assessments and assignments, which may lead to transfer those practices to other settings.

Intrinsic Motivation

Intrinsic motivation can be described as the degree of individual participation since interest and satisfaction are derived from participation (Gagne & Deci, 2005). Other studies discuss high correlation between individual interest and intrinsic motivation (Smith & Darvas, 2017; Jungert et al., 2020). It is important to define intrinsic motivation because oftentimes motivation is discussed as a general term, encompassing qualities of both extrinsic motivation and intrinsic motivation. Extrinsic motivation is usually related with receiving a reward or consequence from participation. These could be tangible or intangible but does not encompass the personal satisfaction of the individual. Without careful consideration, these extrinsic motivators can be harmful. Students can be led to believe school conditions, test scores, etc. determine their self-worth (Ginsberg and Raymond, 2019). Intrinsic motivation has a more positive correlation with academic achievement.

Figure 1 explains the causes of intrinsic motivation (determinants), which includes personality orientations and activities and situational factors. A student's preference for any activity or the experience from a particular situation will result in building an inner drive in the student to be involved (maybe to know something, to accomplish something or to experience stimulation, or to avoid harm). The consequence of the IM results in creating various cognitive and behavioral patterns in the student which can benefit or harm them in future, depending on what they are (Carbonneau et al., 2012).



Note: From "Toward a Tripartite Model of Intrinsic Motivation," by N. Carbonneau, R. Vallerand, and M. Lareniere. 2012, *Journal of Personality*, 80 (5), p.1148. Copyright 2011 by Wiley Periodicals, Inc.

Figure 1: Tripartite Model of Intrinsic Motivation

Parental Involvement

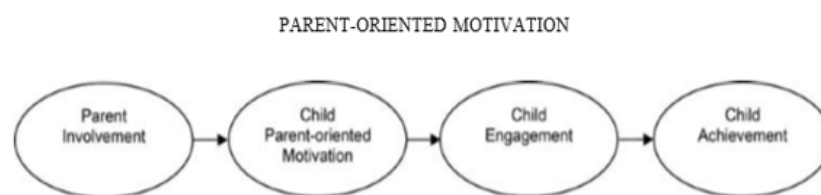
Parent involvement in academics has been identified as critical influence on children's education, and has been related to their academic participation and success. Oswald et al. (2017), found that the student's cognition and behavioral development is high when there

was an increase in parental involvement. When parents are involved with a student's academics, there is a positive impact on their social-emotional development including self-esteem, emotional self-regulation, and self-perceptions of academic competence (Wang & Sheikh-Khalil, 2013).

Parental involvement can have a variety of definitions, however, here it is defined as "parents' interaction with schools and with their children to benefit their children's education success" (Hill et al., 2004, p. 1491). This specific definition is simple and allows for multiple ways parents can be involved in their students' educational success. The only change made is that the term adult is substituted for parent. Research by Hill and Tyson (2009) suggests parental involvement is related to academic performance and engagement of students in middle and high school. Pomerantz et al., 2007 categorized parental involvement into home-based and school-based involvement. In school-based practices, the parents are directly involved with the school which includes attending parent-teacher conferences, participating in school activities and talking to teachers while home-based involvement includes practices that take place outside of school, often in the home which include assisting their student with school-related tasks, such as homework (e.g., creating an appropriate environment to study or helping students complete their homework), responding to a student's academic endeavors (e.g., performance on a test), and having discussions about academic challenges (e.g., what happened in school or the importance of academic participation for their future development) (Pomerantz et al., 2007).

There are few studies that shows that negative impact of parent involvement on student learning, but many have mentioned the positive relationship of motivation with academic success. Self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000) mentioned that children experience parent-oriented motivation as more controlled than autonomous (Cheung & Pomerantz, 2012). Cheung and Pomerantz (2012) found that as parent involvement in children's learning increased, the student's motivation to succeed in school also increased with enhanced self-regulated learning and higher grades. Children motivation was driven by parent approval.

Figure 2 elaborates the parent involvement on student achievement and motivation through parent-oriented motivation. However, the model does not establish the influence of parental involvement on a student's own intrinsic motivation.



Note: From "Why does parents' involvement enhance children's achievement? The role of parent-oriented motivation," by C. Cheung & E. Pomerantz, 2012, *Journal of Educational Psychology*, 104 (3), p.821. Copyright 2012 by American Psychological Association.

Figure 2: Parent-Oriented Motivation

Fan and Chen (2001) connected relationships between parent involvement and student characteristics like, achievement motivation, task persistence, and receptive vocabulary. Another study (Hill and Tyson, 2009) also discusses the use of family-school relationships and parental involvement as a method to close achievement gaps. It has been witnessed that

parent involvement during middle school tends to decrease. There could be many reasons for the reduction in parent involvement which includes unable to help their kids in school-work or extending their child's learning (Dauber & Epstein, 1989). Seginer (2006) supports that there is a negative relationship of effective home involvement and middle school motivation which lowers the student's learning. It can be inferred from various research that parent involvement during elementary education still has an evident impact.

There is a considerable amount of research based on parental involvement with middle school students but does not provide any conclusive evidence about the directionality, or lack of its impact on intrinsic motivation. These research investigations examine the achievement, using academic success and learning in the school environment but none reveals a direct connection between student intrinsic motivation and parent involvement. Therefore, it becomes important to investigate the impact of parent involvement on middle school students' intrinsic motivation.

Statement of Purpose

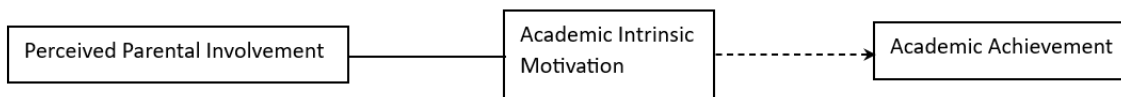
John Hattie spent more than a decade researching the effects of various influences on student achievement (Arnold, 2011). Each factor had a calculated effect size measuring the level of influence on student success (Visible Learning, n.d.). For reference, the lowest score is -0.90, which is the effect size of attention-deficit/hyperactivity disorder (ADHD), while the highest is collective teacher efficacy at 1.57. According to Visible Learning, motivation has an effect size of 0.42 on student achievement and parental involvement is 0.50, suggesting these two have an independent impact on student achievement. Although many studies have examined the relationship between motivation and student achievement, few consider the factors that relate to the development of student intrinsic motivation. A few studies have found that there is a strong correlation between intrinsic motivation and academic success (Jungert et al., 2020; Lacaille et al., 2007). A meta-analysis emphasized the lack of research on the link between intrinsic motivation and variations in performance based on demographic or environmental conditions (Cerasoli et al., 2014). It is important to identify the factors that contribute to the development of intrinsic motivation in a school setting so that all students can achieve academic success. To ascertain the extent to which there is a link between academia and demographic or environmental conditions, such as parent involvement, the following research question was developed:

Research Question - What is the relationship between student perceived parent involvement and their academic intrinsic motivation?

Null Hypothesis 1: There is no significant relationship between perceived parent involvement and academic intrinsic motivation.

Directed Hypothesis 1: There is a significant relationship between perceived parental involvement and academic intrinsic motivation.

The purpose of the current research is to determine if perceived parental involvement and academic intrinsic motivation influence each other, and to what extent.



Note: The bold lines represent the variables under investigation and the dotted line represents the possible extension of the current research.

Figure 3: A proposed relationship of possible variables that may connect intrinsic academic motivation with academic achievement.

Theoretical Framework

Self-Determination Theory (Gagne & Deci, 2005), Social Cognitive Theory (Schunk & DiBenedetto, 2020), Achievement Motivation Theory (Elliot & Harackiewicz, 1996), and Ecological Systems Theory of Development (Leonard, 2011) each address the impact of environmental factors like parental involvement on academic intrinsic motivation.

Methods

Research Design

A quantitative study with a survey design was used to understand the relationship between students perceived parental involvement and their intrinsic motivation. According to Creswell (2008), survey design provides a trend, attitudes of the population or the tests for associations of the population by studying a sample of population. A Likert Scale survey was used to measure the quantitative variables of perceived parental involvement and intrinsic academic motivation. The need to understand the relationship between the two variables and the time effectiveness of the survey design becomes some of the reasons for selecting this as a research design method.

To investigate the impact of parent involvement on intrinsic motivation, a linear regression analysis was used. It was challenging to find a statistical method to analyze these two variables, a parallel study was found and used as a model for research methods. Jungert et al. (2020), applied a multiple regression analysis to find the relationship between parent and teacher enthusiasm with intrinsic motivation and academic achievement of students.

Setting and Sample Population

A convenience sample of approximately 700-800 students attending a Midwestern suburban public middle school were asked to serve as the research population. This school serves 7th and 8th grade academic levels of 12-15 age. The student population consisted of 50% male and 50% female students. All students were given an equal opportunity to participate in the survey. Students were given an assent form (Appendix B) to sign if they chose to participate. Before conducting the survey, a consent form (Appendix C) was sent to parents/guardians of those students. Students had one month to get both forms signed and only those students with both parental permission and their own consent participated in the study. The entire class received a snack box if 50% of the students participated in that class. A sample pool of N=50 was targeted from the convenience pool of 700-800. The survey was administered by the advisory teachers of the students. The advisory class did not interrupt instructional hours.

Instrumentation

A 5-point Likert scale survey was used to measure perceived parental involvement and academic intrinsic motivation (Appendix A). One survey with two parts (A and B) was used to measure the impact of perceived parent involvement on student intrinsic motivation and assess the students' own perceived intrinsic motivation. Part A measures parental involvement (Mendoza, 2012). Part B measures motivation with the American Motivation Scale (AMS) first validated by Vallerland et al., 1992. The survey asked students to rank their perspective of various ways their parents/guardians are involved in their schooling using a five-point Likert scale ranging between strongly disagree to strongly agree. To maintain the anonymity of the students /participants, the survey was collected with no student identification.

Data Collection

Before collecting data, students received and then submitted both signed parent's consent and student's assent forms. Advisory teachers were given the log to keep the records of the students submitting both the forms. Once forms were collected with the teacher's log, surveys were given to the advisory teachers for those who submitted both forms.

All 7th and 8th grade students completed the survey at the same time in their advisory class without any interruption. Part A of the survey contains 17 questions and Part B contains 16 questions. The advisory class is 30 minutes long. To maintain the authenticity of the students' perception on parental involvement, no student was allowed to take the survey home, even if they are not finished. The advisory teacher did not paraphrase or help the students while filling out the survey to maintain the reliability and truthfulness. Data was collected once in an academic year from all the students. The survey was reviewed by IRB to protect the rights and the welfare of the students involved in the research.

Results

Descriptive statistics were calculated using the program SAS (SAS on demand for academics). AVGPI (average parental involvement) shows the average score for perceived parental involvement for each involvement. The same calculation was completed for the responses to the AMS survey (Vallerland et al., 1992) and labeled was AVGAIM (average academic intrinsic motivation).

Three participants' surveys were excluded as they were left incomplete. The remaining 47 surveys were used to calculate the mean and standard deviation of AVGPI and AVGAIM. A linear regression analysis was conducted with AVGAIM as a dependent variable and GUARDIAN (the primary guardian who is involved in the student's schoolwork) as a classification variable and AVGPI as continuous variable using the program SAS.

The descriptive statistics for average perceived parental involvement score and academic intrinsic motivation score are shown in Table 1. The mean for AVGPI is 4.34. The mean for AVGAIM is 3.80. Graphs showing the distribution of each variable are shown in Appendix D. Average perceived parental involvement scores are skewed to the right and average academic intrinsic motivation has a normal distribution.

Table 1: Descriptive Statistics

Variable	Mean	Std Dev	Minimum	Maximum	N
AVGPI	4.34	0.51	3.25	5.00	47
AVGAIM	3.80	0.66	2.00	5.00	47

A linear regression analysis was run using AVGAIM as the dependent variable, GUARDIAN as the classification variables, and AVGPI was a continuous variable.

The linear regression model has one intercept (β_0) and two slopes (β_1 -2):

$$\text{AVGAIM} = \beta_0 + \beta_1 * \text{AVGPI} + \beta_2 * \text{GUARDIAN}$$

The least squares summary and analysis of variance are shown in Appendix E. The p value from the analysis of variance was 0.06 which is greater than 0.05. This means the null hypothesis cannot be rejected. However, since it is close to 0.05, the parameter of estimates, shown in Table 2 was required.

Table 2: Parameter Estimates

Parameter Estimates					
Parameter	DF	Estimate	Standard Error	t value	Pr > t
Intercept	1	0.740721	1.033956	0.72	0.4786
Guardian Father	1	0.074793	0.545416	0.14	0.8917
Guardian Mother	1	0.002515	0.515335	0.00	0.9961
Guardian other	0	0	-	-	-
AVGPI	1	0.657512	0.193439	3.40	0.0017

For all tests a Type 1 error rule of 0.05 or 5% was used. If p-value < 0.05 then reject the null hypothesis (Ho). Overall, AVGAIM does not have a significant relationship with GUARDIAN since each p value for guardian higher than 0.05 which means that the academic intrinsic motivation of the students is not related to the relationship type of the guardian. However, AVGPI has a p value of 0.0017, which is less than 0.05 and positive. This suggests there is a positive relationship between perceived parental involvement and academic intrinsic motivation. The tests for the individual variables show the following results:

Test for the Slope of AVGPI:

Ho: $\beta_1 = 0$

Ha: $\beta_1 \neq 0$

Conclusion: Since $p = 0.0017 < 0.05$, Ho is rejected and conclude the slope is significantly different from zero. The positive parameter estimate = 0.657512 means that AVGAIM increases as AVGPI increases.

The overall result of the research question is there is a positive significant relationship between students perceived parental involvement and their academic intrinsic motivation.

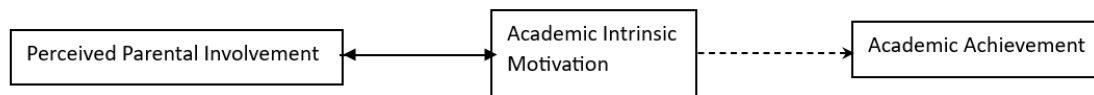


Figure 4: Actual relatedness of the variables.

Conclusion

Limitations and Delimitations

One of the limitations was the convenience sample used as one of the researchers was teaching in that school. Due to this narrow sample, the result of the study cannot be considered generic. Another limitation was a possible self-selection of higher academic intrinsically motivated students since this survey was not a part of a grade assignment and purely voluntary.

Several delimitations are considered. Student perspectives on their parental involvement and academic intrinsic motivation were considered as variables which might change with time. To increase the participation of students, an incentive was given to them.

Implications for Practice

This study can help to strengthen relationships and bring awareness between schools, families, and communities. Communicating the impact of parental involvement in student's academic intrinsic motivation helps to create awareness among them and might encourage them to get involved with the teachers to attain the academic goal of the child. The increase in the levels of academic achievement can increase the state funding to public schools and increase the value of homes in the community.

Appendices

Appendix A

Student Survey

The University of Missouri-St. Louis

STUDENT SUCCESS SURVEY

Part A- Parent Involvement Survey

Think about the person who LIVES WITH YOU IN YOUR HOME and helps you the most with school. Who is this person? PLEASE SELECT ONE.

- a. _____ Mother b. _____ Father c. _____ Grandmother
 d. _____ Grandfather e. _____ Stepfather f. _____ Stepmother
 g. _____ Aunt h. _____ Uncle i. _____ Other

Read the following questions carefully. Answer the questions about the person YOU IDENTIFIED ABOVE. Mark the choice that describes your answer the best. PLEASE SELECT ONE NUMBER PER ITEM USING THE KEY BELOW.

17. This person thinks I should be concerned about what kind of career I may					
16. This person thinks that getting ahead is very important					
12. When I ask for help with my homework, this person gives it to me.					
14. When I get poor grades, this person offers help.					
13. Hard work is very important to this person.					
15. This person thinks I should go to college.					
11. This person knows the grades I get.					
9. When I get poor grades, this person encourages me to try harder.					
8. This person thinks homework is a very important part of school.					
7. This person is involved in school programs for parents.					
6. It really matters to this person what grades I get.					
2. This person looks at my tests and papers from school.					
4. This person sets high standards for me to meet.					
3. This person goes to parent-teacher conferences.					
5. This person thinks that education is a very important part of what I do.					
1. This person tries to get me to do my best on everything I do.					
	1	2	3	4	5

1 = Never 2 = Very seldom 3 = Sometimes 4 = Usually 5 = Always

Part B - Academic Motivation Survey: Intrinsic Motivation measurement

WHY DO YOU GO TO SCHOOL? Using the scale below, indicate to what extent each of the following items presently corresponds to one of the reasons why you go to school. PLEASE SELECT ONE NUMBER PER ITEM USING THE KEY BELOW.

1 = Not at all 2 = Not very much 3 = A little 4 = Certainly 5 = Definitely

	1	2	3	4	5
1. I need at least a high school diploma in order to find a high-paying job later on.					
2. I experience satisfaction while learning new things.					
3. I think that a school education will help me better prepare for the career I have chosen.					
4. I really like going to school.					
5. I really feel that I am wasting my time in school.					
6. For the pleasure I experience while performing better than my expectations.					
7. To prove to myself that I am capable of completing my high-school diploma.					
8. Eventually it will allow me to enter the job market in a field that I like.					
9. For me, school is fun.					
10. I once had good reasons for going to school; however, now I wonder whether I should continue.					
11. When I succeed in school I feel important.					
12. For the pleasure that I experience in broadening my knowledge about subjects which appeal to me.					
13. It will help me make a better choice regarding my career orientation.					
14. For the pleasure that I experience when I take part in discussions with my teachers.					
15. For the satisfaction I feel when I am in the process of accomplishing difficult academic activities.					
16. In order to have a better salary later on.					

Appendix B

Assent to Participate in Research Activities (Minors)

The Perception by Middle School Students of the Impact of Parent Involvement and Socioeconomic Status on Their Intrinsic Motivation

1. Hi, our names are Pallavi Aggarwal and Taylor Lawson-Smith. We are college students.
2. We are asking 800 students, including you, to take part in a research study because we are trying to learn more about how the involvement of your parents/guardians and social standing impact your motivation in school work.
3. If you agree to be in this study, you will be asked some questions that affect your motivation in school. The questions include how involved your parent(s) or other adult is in your school work, how much you think your parents make, and the education background of your parent/guardian. It will take about 30 minutes. You will take it one time during the advisory class.

4. Being a part of this study should not harm you in any way. Your schooling and grades will not be impacted by choosing to participate in this study.
5. You will probably not get any direct benefits from being in this study but you might enjoy knowing that your honest answers will help teachers teach class in ways that help you to learn.
6. Please talk this over with your parents before you decide whether to participate. We will also ask your parents to give their permission for you to take part.
7. If you don't want to be in this study, you don't have to. Being in this study is up to you, and no one will be upset if you don't want to participate or if you change your mind later and want to stop. Your schooling and grades will not be affected by choosing to not participate in this study.
8. You can ask any questions that you have about the study. If you have a question later that you didn't think of, you can call us at 636-290-6891(Taylor Lawson-Smith) or (252)-290-0478 (Pallavi Aggarwal).
9. Signing your name at the bottom means that you will be in this study. You will be given a copy of this form after you have signed it.

Participant's Signature	Date	Participant's Printed Name
Participant's Age	Grade in School	

Appendix C

Parent Informed Consent Form

Informed Consent for Participation in Research Activities

The Perception by Middle School Students of the Impact of Parent Involvement and Socioeconomic Status on Their Academic Intrinsic Motivation

Participant _____ HSC Approval Number _____
 _____ Principal Investigator: Pallavi Aggarwal / Taylor Lawson-Smith PI's
 Phone Number:(252)-290-0478) / (636)-290-6891

Summary of the Study

The general purpose of this study is to identify the factors that lead to the development of the academic intrinsic motivation in middle school students.

Neither the statistical analyses of anonymous survey rankings by the researchers nor the completion of an open-ended questionnaire by participants poses a significant risk to the physical, psychological, social, economic, or legal well-being of the participants.

We will take multiple precautionary measures to protect the privacy of participants. As part of this effort, the identity of participants will not be revealed in any publication or presentation that may result from this study. No identifying information will be collected

by the survey and questionnaire so that at no time will the researchers be able to identify a particular student, their responses, or their participation in this study.

1. Your child is invited to participate in a voluntary research study conducted by Pallavi Aggarwal and Taylor Lawson-Smith, and it is under the supervision of Dr. Charles Granger.

2. a) Your child's participation will involve completing a survey that asks students to respond to the impact of their perceived parental involvement and socioeconomic status on their intrinsic motivation. This is a Likert Scale survey with open-ended questions after the rankings. The survey will be administered during one advisory period to limit the disruption of the school day. There will be no incentive to those who choose to participate, but this information could be used in the future to help educators build classroom environments that will be more equitable in advancing student academic intrinsic motivation. There is no foreseeable risk. Approximately 800 students may be involved in this research at the University of Missouri-St. Louis.

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b) The amount of time involved in your student's participation will be 30 minutes during one advisory period.

3. There is a loss of confidentiality risk in that names of students who have both sign parent consent forms and their own student assent forms will be collected. No names or other identifying information will be collected on surveys. Student names are only collected so researchers can distribute surveys to students who have permission.

4. There are no direct benefits for your child participating in this study, however their participation may lead to benefits to education. The results of this study may reveal information that educators can use to improve behavioral, social and academic interventions for all students.

5. Your child's participation is voluntary and you may choose for them not to participate in this research study or withdraw your consent at any time. Your child will NOT be penalized in any way should you choose not to allow them to participate or withdraw.

6. We will do everything we can to protect your child's privacy. As part of this effort, your child's identity will not be revealed in any publication that may result from this study. In rare instances, a researcher's study must undergo an audit or program evaluation by an oversight agency (such as the Office for Human Research Protection) that would lead to disclosure of your data as well as any other information collected by the researcher.

7. If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Pallavi Aggarwal at (252-290-0478), Taylor Lawson-Smith at (636-290-6891) or the Faculty Advisor, (Dr. Charles Granger at (314-516-6220). You may also ask questions or state concerns regarding your rights as a research participant to the Office of Research, at 314-516-5897.

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I hereby consent to my participation in the research described above.

Participant's Signature _____ Date _____

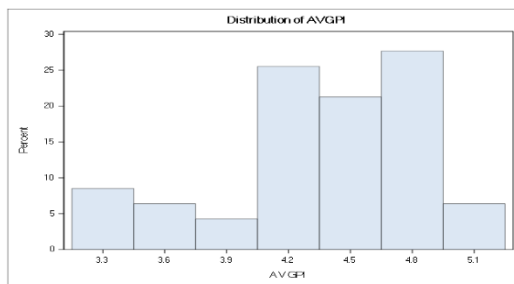
Signature of Investigator or Designee _____ Date _____

Appendix D

Distribution of Variables

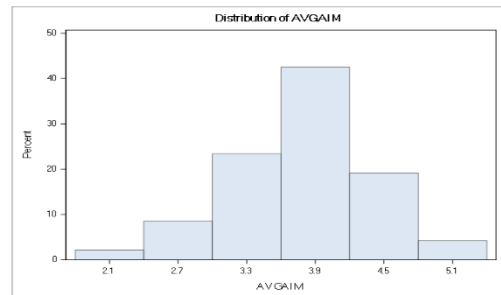
Graph 1

Distribution of Average Perceived Parental Involvement



Graph 2

Distribution of Average Academic Intrinsic Motivation



Appendix E

Table 3

Least Squares Summary

LEAST SQUARES SUMMARY			
STEP	Effect Entered In	Number <u>Parms</u> In	SBC
0	Intercept	1	-36.8617*
1	Guardian	3	-29.8282
2	AVGPI	13	15.3394

*Optimal Value of Criterion

Table 4

Analysis of Variance

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F value	Pr>F
Model	12	8.07423	0.67285	1.96	0.06
Error	34	11.69128	0.34386		
Corrected Total	46	19.76551			

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