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# The Effects of Extended School Year on Students with Mild Disabilities and its Relationship to Regression Rate

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Running head: EXTENDED SCHOOL YEAR/REGRESSION RATE

The Effects of Extended School Year on  
Students with Mild Disabilities  
and its Relationship to Regression Rate

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**Abstract**

This study is an historical study comparing the spring and fall test scores of students who attended the summer academic program of one particular private school for students with learning differences, including autism, Asperger's Syndrome, dyslexia, attention deficit disorder, and nonverbal learning disabilities. This study concluded that there was a statistical significance between the regression rates in both reading vocabulary and reading comprehension among those who attended the summer program and those who did not attend the summer program. Those students who did not attend the summer program regressed in skills significantly. Those students who attended the summer program maintained or improved their skills.

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**The Effects of Extended School Year on  
Students with Mild Disabilities  
and its Relationship to Regression Rate**

**Introduction**

***Case Study I***

Sally Banks is a bright-eyed fourth grader who attends a private school for students with learning differences. She has been diagnosed with Attention Deficit Disorder, auditory processing deficits, and a learning disability in reading and math. She was evaluated by the local public school in first grade when she was not keeping up with the other students in her class. Her IQ is average and her reading and math achievement scores are below average. Her parents chose a private special education school placement because of their smaller classrooms and more intensive remediation program. Sally was tested in the beginning of the year, about three weeks after school has begun in reading, math, and vocabulary, and again at the end of the school year in May. Sally's achievement scores on the pre- and post-testing showed that she had improved in reading and vocabulary one and a half grade levels and her math has improved one grade level. Her parents were pleased with these results. When asked if they wanted Sally to attend summer school, they declined because they felt that she deserved a break from academics because she had worked so hard throughout the school year.

September arrived and Sally returned to school. She had grown an inch over the summer and looked rested. She was excited to tell her new fifth grade teacher about her travels and time spent at the neighborhood pool. Sally was again tested in September, about three weeks after school started. These test results showed that Sally's achievement

had regressed six months in reading, four months in vocabulary, and three months in math.

### *Case Study II*

Todd Gardner is a ninth grade student at the same school that Sally attends. He too has an average IQ and deficit areas in reading, math, and written expression. He also has an Attention Deficit Disorder. He is on medication to assist him in paying attention in the classroom. Todd loves skateboarding and enjoys showing off his tricks by riding up and down the handicapped ramp in the front of school. Last summer he took a trip to the I Games and has decided that he would like to be a professional skateboarder. He is tall and at times clumsy because his body is going through a growth spurt. Todd wants to please his peers and his teachers. He is well liked despite his impulsivity. During the year according to pre- and post-testing Todd improved in reading by one grade level and math by eight months. His parents are proud of his achievement and want him to continue to improve. Mr. and Mrs. Gardner both work and were somewhat concerned about Todd staying home by himself all summer. They decided to enroll him for summer school for the month of July. They figured that summer school would help him keep up the skills he learned during the school year and keep him out of trouble in the neighborhood for a couple weeks.

Todd arrived on the first day of summer school, skateboard tucked under his arm and a pencil behind his ear. He worked on academics three hours a day, four days a week for four weeks.

When September came Todd returned to school having made new friends from summer school and, of course, with his skateboard tucked under his arm. Pre-testing

showed Todd had maintained his levels in reading, improved by two months in vocabulary, and improved by one month in math when compared to the previous year's post-testing.

Each spring parents of special needs children have a difficult time deciding what to do when it comes to summer activities. Many activities are limited due to the child's learning differences. Also these children need additional tutoring or schooling to further their skill training. Thus, parents are required to make the tough decision about summer school.

"Do I enroll my child in a summer school placement to continue to work on academic skills? Do I enroll my child in a summer camp program which will provide them opportunities to be with their peers? If I don't enroll my child in summer school for continued academic remediation, what skills will they lose over summer? How long will it take to recoup this loss? Can I afford summer school or tutoring?" These are all questions that parents ask themselves.

### **Review of Literature**

When regular education students learn skills, they are able to apply and generalize these skills as the last level of "learning". When they are able to apply and generalize skills, mastery occurs. Most students then will be able to recall information and perform skills after a period of time lapses from mastery to recall. Students identified with special needs have a greater than average difficulty in recalling "mastered" skills. While they at one time were able to perform this skill and prove mastery, their disabilities often fall in the areas of retention and recall. Students identified with these weaknesses and other learning difficulties have a greater than average chance of "losing" skills acquired during

the school year over the summer vacation (Koegel & Rincover, 1977) as well as other long vacations during the school year. This loss is called regression. Browder and Lentz (1985) defined regression as a "failure to maintain previous performance levels across time".

Once these students regress in their skills over the summer months the next concern is the ability to recoup this loss over a reasonable amount of time. Tilley, Cox, and Staybrook (1986) stated that typical students' average regression is four percent over a three-month period. They also stated that students with mild/moderate disabilities regress at a faster rate than their peers. Tilley, Cox, and Staybrook (1986) also stated that these children's rate of recoupment is slower than their typical peers. Recoupment is the period of time it takes a student to recoup the skills to the level just before the long break. The acceptable time for recoupment, however, varies from researcher to researcher and school system to school system. Many school systems have stated that acceptable recoupment time is the first marking period. In some systems that is the first six weeks of school, one sixth of the year. Other systems' first marking period is nine weeks. This is one fourth of the school year.

Regression/recoupment has been the subject of several federal court cases which established the parameters of extended school year for students in the public schools. Extended school year can take on many forms. For this paper, only a summer academic program will be discussed as extended school year. *Armstrong v. Kline* (1979) (Olmi, 1995) paved the road for extended school year, setting legal precedent. In this case the courts determined that, in order to comply with public law 94-142 and provide a free and appropriate education, extended school year (ESY) was necessary to meeting the



individual needs of the child. Further cases clarified the regression/recoupment issue. In *Anderson v. Thompson* (1980) (Olmi, 1995) a student with learning disabilities was denied ESY because regression would not be severe enough. In *the Stacy G. v. Pasadena Independent School District* (1982)(Olmi, 1995) case, this child with autism was found eligible for ESY because her academics would regress and possibly develop behavioral difficulties if there was a long vacation period in her schooling. Her need for consistency allowed her to receive ESY.

Although these court cases helped define and set guidelines for eligibility for extended school year, they did not set specific measures for regression/recoupment. Individual school districts are left to interpret legal precedent and further define the parameters for eligibility. One public school official stated in an interview, "when determining eligibility for extended school year the IEP [individual education plan] committee must define individually what would be appropriate for each child" (Brown, 2002). He went on to state that, in some counties, the standards can sometimes vary widely from committee to committee. It is important, he stated, that the IEP committee considers what the parent wants, however, but rely more on past experiences with this child and his/her disabling condition.

Another concern is the ability to measure regression/recoupment. According to Sargent and Fidler (1987), few researchers were able to validate the regression/recoupment phenomenon. They stated that these researchers failed in their attempts to prove that regression could not be recouped at similar rates as normal peers. However, Tilley, Cox, and Staybrook, (1986) used a more controlled approach. They concluded that non-disabled children took approximately seven weeks to recoup losses, and moderately

disabled students regressed faster than non-disabled peers on cognitive items and their recoupment was slower.

Very little other research has been done with any validity. One difficulty in researching this topic is the way in which the testing is done and reported. Many teachers can state that among students with mild disabilities regression does occur and occurs at a significant rate which affects their time for learning the following year; however, research does not seem to support this finding. One reason for regression could be the idea that these children may never be truly mastering these skills when originally taught. Research may never be able to identify whether regression is occurring or mastery had never truly happened for students with mild disabilities.

Researchers do agree that copious testing is imperative to measure regression/recoupment. One research group, Edgar, Spence, and Kenowitz (1977) noted the four-point method for collecting data: 1) at the end of the regular school year; 2) at the beginning of summer school; 3) at the end of summer school; and 4) at the end of the following school year. They felt that by evaluating the student at the end of the following school year they would be able to more accurately assess the effects of summer school. McMahon (1983) also tested students eight weeks into the school year following the summer school session. McMahon felt that this was the best way to determine regression/recoupment time. Macy Research Associates (1988), in their review of literature, stated that a series of measurements should be used. The three agreed-upon time periods were 1) at the end of instruction; 2) at the beginning of the subsequent instruction; and 3) at the time of recoupment. They stated that any loss between the first two time periods showed regression and the third period would show the time of recoupment.

Very little research exists that is conclusive or solid enough to show remarkable regression/recoupment in children both disabled and non-disabled. Macy Research Associates (1988) stated the most conclusive research was done by Tilley, Cox, and Staybrook (1986). Earlier studies had difficulties in consistency of testing measures, research design, and actually finding a pattern of regression in students with special needs. Kabler, Stevens, and Rinaldi (1983) stated that they couldn't even find any significant regression in students with special needs, as well as stating that teachers' beliefs that this phenomenon occurs was unfounded.

Macy Research Associates (1988) noted that regression does actually occur and that students with disabilities regress at a more rapid rate than their non-disabled peers; however, their findings suggested that recoupment varies among individuals. While this research group and others stated that those students with mild disabilities recoup skills within an "acceptable" amount of time (Macy Research Assoc., 1988; Allinder & Eicher, 1994), Allinder & Eicher stated that the time it takes to recoup lost skills takes away from the current year's learning time. This is the half-full, half-empty theory. Although students are able to recoup, they do not have all the necessary time to learn new skills (1994).

Since the federal court rulings concerning ESY, research has been done to justify and explain the extent of regression/recoupment in public school comparing disabled and non-disabled students. These studies determined which types of disabilities are most affected. However, it did not consider those children placed in private specialized educational facilities, nor those students who receive more intense treatments for their educational disabilities.

### **The Private School Thought**

Many private schools which specialize in students with mild disabilities offer a summer program. In several schools these summer programs are required for all their students. The premise behind this year round program is partly due to the regression/recoupment rate (Smieciuch, 2002). Oakland School, in Keswick, Virginia, requires their "winter" students to go year-round, while allowing others to come for just their summer program. The New Community School, in Richmond, Virginia, offers classes to help their students maintain skill levels and offers other courses the students can not take in the winter. Riverside School, also in Richmond, Virginia offers continued language fundamentals therapy as an option for students. Julie Wingfield, principal of Riverside School, stated in an interview that their students continue to require this reading therapy during the summer months specifically to counteract regression (Wingfield, 2002). She further stated that, although she had no specific data, teachers and therapists could see a marked regression in reading skills when students did not participate in their summer therapy.

This study examined the students of one particular private school and evaluated its summer program's effectiveness on regression rates of its students. Currently the summer program consists of five one-week sessions beginning the last week in June and ending in July. Students may choose as many weeks as they would like to attend, choosing as little as two weeks and as many as all five weeks. This summer program is optional for all students and requires additional tuition. Currently the summer program has two facets; academic and social/emotional. The academic portion consists of three hours classroom time, four days a week, with a teacher and a teacher assistant. The

student/teacher ratio is four to one. During this time, specific academic skills in the areas of phonics, reading comprehension, math, written expression, and problem solving skills are reinforced and maintained. Each child works at his or her academic levels according to their individual academic plan. For the past four years, the summer program has not been utilized by its' students. A majority of the students attending the summer program are new students who are transitioning to the school for the fall and those who attend other schools during the traditional school year. The results of this study will better help this particular private school in assessing the effectiveness of the summer program and provide data that will assist its parents in choosing to have their child participate in this program. It is believed that this summer program is essential in the progress of these students in order to maximize learning time and minimize their rates of regression over a summer vacation period.

## **Methods**

### ***Selection of subjects***

Students were chosen according to the following criteria: the student was enrolled at the school in the spring prior to the summer program and enrolled in the fall following the summer program, standardized test scores were available for that student from the spring prior and fall following the summer program. The students were then placed in two groups; those who attended the summer program for at least three weeks and those who did not attend the summer program at all.

### ***Procedure***

All years from 1997 to 2002 were used for the data collection where data were available. Once the data were collected, reading vocabulary and reading comprehension

grade equivalent scores were charted. These scores were derived from the Gates-MacGinitie Reading Tests standardized tests. This test is known and respected by schools for its high validity and reliability (MacGinitie & MacGinitie, 1989). The subjects were then divided into the two groups. A simple mathematical equation was used to determine the regression rate from spring to fall for each student. All rates were then averaged for the two groups. A comparison was made using the averages of the vocabulary test grade equivalent changes three different methods: 1) a comparison of regression from spring to fall according to individual child; 2) a comparison of the two groups' average regression rates; 3) a *t*-test for independent samples to determine the significance of the regression rates between the two groups. To insure the confidentiality of the students participating in this study, each student was be assigned a letter (A, B, C, etc.)

## **Results**

### ***Demographics of Subjects***

Fifteen students were selected for this study due to their test score availability. There were six students whose scores were recorded over two or more years. Three of these students were noted to have attended the summer program for one year and then not attend another year. These scores were also included and individually compared. The students participating in the study were in grades five through nine. Four students were diagnosed with Autism, four with dyslexia, two with Asperger's Syndrome, and two with non-verbal learning disabilities. All students had average IQs ranging from a standard score of 84 to a standard score of 112. Two children reported in their application that they were African-American, two reported Hispanic descent, and ten reported that they were Caucasian.

### *Data Analysis*

The data collected from available test scores were derived from raw scores and had been converted into grade equivalents by the teachers at the school at the times the tests were given. Although grade equivalents are typically not used when averaging scores collectively among groups, these scores were used to gain a regression rate for each child.

### *Reading Vocabulary*

The regression rate in vocabulary on the Gates-MacGinitie Reading Test for the summer program group (those who attended summer program) was an average 0.08 years. This shows that those who attended the summer program on average did not regress in their vocabulary skills during the summer months. The highest regression rate available for this group was 7 months and the highest progression rate for this group was 4 months. The median score was 0 months or no regression or progression. Three children scored 0 months on vocabulary in regression. Four children progressed over the summer months, while attending the summer program an average of 2.5 months. Two students regressed at the rates of 5 months and 7 months. It should be noted, however, that these two students had a progression rate in reading comprehension of 9 months and 2 months respectively, and showing in their individual academic plans the focus of the summer program was to increase comprehension.

The group who did not attend the summer program did not fair as well as those who did. Their average rate of regression was 1 year 2 months. The highest rate of regression was 2.7 years and the highest progression rate was 8 months. The median rate

was -1.25 years. Only one student progressed in vocabulary over the summer months without attending the summer program. Their progression rate was 8 months. It should be noted that this same individual regressed in comprehension 1 year 3 months over the same summer months. This was also the only incidence where an individual who did not attend the summer program increased skills in one or more areas of reading. All other subjects regressed in skills in all areas. One student though maintained the same grade equivalent in spring and fall testing, a regression rate of 0.

When applying the *t* test for independent samples to these two groups of students, the *t*-value of 3.06 is considered significant at  $\alpha 0.01$  ( $df = 15$ ). This means that there was only a 1 percent probability of chance.

#### *Reading Comprehension*

Data collected for reading comprehension among the group who attended the summer program using the Gates-MacGinitie Reading Test showed an overall mean of 0.26 years. The highest gain was 9 months and the highest regression rate (loss) was 1 month. The median rate was 2 months increase. The mode was 2 months and 0 months increase both appearing 2 times in this group. Only one student's scores showed a regression (of one month) but had improved in reading vocabulary 3 months over the summer. No evidence as to what the students' academic concentration was for that summer session was found.

The group who did not attend the summer program obtained a mean of -0.825 years of regression. The highest regression rate was 1 year 3 months and there was only one student whose scores did not regress over the summer months (change between



spring and fall scores of zero months). The median regression was 8.5 months within the group.

When comparing the two groups, those who attended summer program and those who did not engage in any academic therapy or tutoring during the summer months, the *t* test for independent samples was again applied. The *t*-value for reading comprehension was 5.25. This value is significant at  $\alpha 0.001$  ( $df = 15$ ).

Scores of two students were used twice in the study because they attended the summer program one year and then did not attend the program another year. In both cases the year they attended the program their skills were maintained at 0 progression or a positive progression was made. In the year that they did not attend the summer program the change between spring and fall testing showed a negative change (resulting in regression) in all areas. The greatest change was 2.7 years in vocabulary in the year this child did not attend the summer program. Specifically, this same child in the year he attended the summer program improved in vocabulary 2 months.

### **Discussion**

Students in this particular school show a regression rate that is statistically significant in both reading vocabulary and reading comprehension when they do not attend the summer program. These children would most possibly be eligible for extended school year in the public school system. When the children in this study regress a mean of 1 year, 2 months in a three-month period in vocabulary and 8.25 months in comprehension, it will take much longer to recoup this regression. Again, according to Tilley et al (1986), the average regression rate of non-disabled children is 4 % over a summer three-month period. This 4% of 10 months worth of learning in a regular school

year is 0.4 months. When compared to the students in this study who regressed an average of 1 year, 1.625 months and 8.25 months, there is a considerable difference. Students who participated in the summer program either maintained their skills or improved their skills in the areas of work during the summer program. The students who participated in the summer program but still showed a regression of skills did not show a consistent regression of skills in both noted areas (vocabulary and comprehension). It was found in their individual academic plans that concentration was to center around the area in which they improved not regressed. Those students who did not at all participate in the summer program showed a regression in all areas. Only one student showed an improvement in skills between the spring testing and the fall testing. The statistical significance of the data presented show a significant regression rate among these groups of students and that the rates are not due to chance.

#### **Limitations**

The most significant limitation was the amount of available data for this study. The school has been in existence for seven years and has had six summer programs. The scores available were for only 15 students and 17 available sets of scores. With a student population of 15 from year one of the summer program to 98 in year six of the summer program, it was expected that more scores would be available. This school had inconsistent testing procedures. For three years, fall and spring scores available but not all students were tested. Only newly enrolled students were tested in the fall of the school year and then all students were tested in the spring for four years. In 2002, an entirely different test was used to evaluate all students and the results from this test were not compatible with the spring 2001 testing. Thus, all scores from the 2002 summer program

were not eligible for this study. This occurred even more frequently in the mathematics testing to the extent that no available scores could be used to evaluate mathematics regression for any of the years that this school has been open.

Another limitation was the time between the end of the school year (two weeks) and the beginning of the summer program and more substantially the time between the end of summer program and the beginning of the next school year. This four-week period between the end of the summer program and the beginning of the school year may have an effect on the scores at the beginning of the year. A third and possibly fourth test, at the beginning and end of the summer program, may be needed to sufficiently consider all time out of school and the regression rates for these shorter periods as well as looking at the summer as a whole.

### **Conclusion**

Although the data pool was small in size, this study is meaningful for the purposes of this study. The purpose of this study was to evaluate the effectiveness of one private school's summer program on the regression rate of the students it serves. Although there were limitations to the data size, the data used showed statistically significant findings in the regression rates of those who did not attend and those who did. This significance proves the effectiveness and purpose of the summer program, which is to maintain the students' skills over the summer months. It even further shows, in the two children who attended one year and then did not attend the next, that the regression of skills does occur and is reduced or eliminated when that child attends the summer program.

### **Recommendations**

Recommendations for this school includes continued offering of the summer academic program to maintain skills. The results from this study can provide the parents making the difficult decision of enrollment in the summer program easier. Findings from this study should be made available to the parents. Consistent fall and spring testing using compatible scores and the same standardized tests will make future studies easier. Continued study of the regression rate of students attending this school will be helpful in providing information to parents and other research organizations.

Students with learning differences, including Autism, Asperger's Syndrome, and Non-verbal learning disabilities show regression of skills over a long vacation period and in this study show higher rate of regression than non-disabled peers. Because these students do regress in skills and take longer than non-disabled peers to recoup their loss as well as learn new concepts, it is important to provide these children with every opportunity to maintain their skills. Vacation time is important to the mental and emotional levels of people but there needs to be a medium between extended vacation time that is helpful in rejuvenating the soul and that which is harmful in academic regression.

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