

Bridging the Gap:

Are Alternate Accommodations Academically Effective for Students with Learning  
Disabilities?

Ashley P. Roberts

Grenfell, Memorial University

### Abstract

Alternate accommodations have been put in place in order to bridge the gap between achievement levels and intelligence levels for students with learning disabilities. In this paper I used results from various studies to find out if alternate accommodations are academically effective for students with learning disabilities. I will do this by comparing studies that look at different types of accommodations, and how they affect students academically. I will also suggest future improvements that can be made to better address the needs of students with disabilities. The results from the studies showed that not all accommodations are beneficial, and even though many accommodations improved student test scores, there was no significant relationship between accommodations and grades. Noise reduction, visual aid and computer based accommodations were the only types of accommodations that had a significant effect on test scores for students with learning disabilities. The findings and suggestions for future accommodation improvements are discussed further in the paper.

### Bridging the Gap:

#### Are Alternate Accommodations Academically Effective for Students with Learning Disabilities?

The number of students with a learning disability is steadily increasing in Canada. According to *Statistics Canada* (2013), more children in this country have a learning disability than all other types of disabilities combined, and 3.2% of Canadian children have a learning disability. That's the equivalent of one child in every school bus full of children. With the number of students with learning disabilities increasing, academic accommodations have been put in place in order to bridge the gap between achievement and intelligence. A very important question still remains unanswered, are alternate accommodations academically effective for students with learning disabilities? This is the question I plan on exploring in my paper.

Accommodations are provided for students with learning disabilities to benefit them academically, by allowing them to reach their full potential. These accommodations give students a better environment to write exams in, along with the tools that they may need. Accommodations are put in place with the assumption that they aid in the student's achievement and give them the right amount of support to meet their needs.

In my paper I will be looking at academic accommodations for elementary and high school students with learning disabilities, and whether or not they prove to be academically beneficial. I will be using studies that explore the relationship between accommodations and grades. A variety of studies that I will be using look at different types of accommodations, which include allowing students to write in a reduced noise environment, oral testing, giving students extended time, using visual aids, and allowing

students to use a computer. I will also be using studies that look at students with reading and mathematical disabilities. After looking at the results found in these studies, I hope to find out how effective these accommodations are and elaborate on how they can be improved to better suit students with learning disabilities. I believe that these studies will support my hypothesis, that alternate accommodations are academically effective for students with learning disabilities.

### **Learning Disabilities**

According to *The Diagnostic and Statistical Manual of Mental Disorders* (5th ed.), learning disorders/disabilities are a heterogeneous group of disorders characterized by persistent difficulties with learning academic skills in a variety of domains, including reading, spelling, written expression and mathematics, for at least six months.

Furthermore, the affected academic skills must be substantially below levels expected for the person's age and cause interference with academic or occupational performance or with activities of daily living (American Psychiatric Association, 2013).

**Diagnostics.** In order for a student to receive academic accommodations they must be examined and found to have a learning disability. This allows students the right to receive special accommodations while in grade school and post-secondary programs. *The Diagnostic and Statistical Manual of Mental Disorders* (5th ed.) created a diagnostic criterion for learning disabilities. It starts with an examination of information, which includes development, medical history, family circumstances, and educational reports, in addition to the administration of standardized psycho-educational assessment tools (American Psychiatric Association, 2013). Then there are four diagnostic criteria that need to be met for the diagnosis to occur. The first is difficulty learning academic skills

for at least six months. The second is that the affected academic skills are substantially below expectations for the individual's age. The third is that the learning disorder is apparent in early years, even though individuals are not diagnosed until the onset of school. The fourth is that the academic and learning difficulties occur in the absence of intellectual disabilities, visual or hearing impairments, mental disorders, neurological disorders, psycho-social difficulties, language difference or lack of access to adequate instructions. Once all of these criteria are met an individual is placed into a category of learning disability, and they are eligible for academic accommodations.

### **Academic Accommodations**

Accommodations have to be provided for all students with a learning disability in the school system. In 1975 *The Education of the Handicapped* passed a law stating that all school districts are required to provide free and appropriate education to children with identified learning disabilities (Torgesen, 1991). The passing of this law has brought on much debate regarding the effectiveness of these accommodations, and what accommodations are appropriate. Test accommodations include accommodations to test presentation (allowing someone read the test aloud or using larger print on test), test equipment and material (allowing students to use a calculator or a computer), test response (allowing someone to write out test responses, or allowing students to point to the answer), test settings (allowing students to write a test in a quiet place or separate room), and test scheduling (allowing student to have extra time to write a test)(Huggins, & Elbaum, 2013). Accommodations are based around each type of learning disability, and are designed to provide support in the areas that the student struggles with. They are put in place to allow students with learning disabilities to reach their full potential and to

bridge the gap between the student's intelligence level and their achievement level. In my paper I will be looking at a number of different accommodations, these will include reduced noise environment, oral testing, extended time, visual aids, and computer based testing.

### **Types of Accommodations**

There are various types of accommodations that are put in place in order to support the needs of students with learning disabilities. I will be looking at the outcomes between a number of different studies in order to find out how each type of accommodation affects students academically, and which accommodations are the most effective. Looking at the results from different types of accommodations will provide a good understanding of how each accommodation works in a school setting.

**Noise Reduction.** Students with learning disabilities often are allowed to write exams in separate room, so they can write in a quiet area away from distractions. A study conducted by Smith and Riccomini (2013) looked at a reading comprehension task completed by elementary students with and without learning disabilities, while wearing and not wearing noise-reducing headphones. Their results showed that students with learning disabilities profited the most from the noise-reducing headphones. Findings demonstrate a significantly positive relationship between wearing noise reducing headphones and comprehension scores for students with learning disabilities. The results from this study suggest that allowing students to use sound reducing devices may help students academically by lessening distractions.

**Oral Test.** Students with learning disabilities can be given an oral exam or provided with a reader. The read aloud accommodation is intend to provide access to the

content so students can demonstrate their achievement without interferences from deficiencies in the skills of reading, decoding and comprehension (Meloy, et al., 2002). A study conducted by Meloy, et al. (2002) looked at how read aloud accommodations affect test scores. The results in this study showed that students with and without learning disabilities achieved significantly higher test scores with the read aloud administration. This defeats the purpose of accommodations, because they designed to provided support for students with learning disabilities, and not the entire student body. Accommodations are meant to benefit students with learning disabilities without giving them unfair advantages.

Another test conducted by Elbaum (2007) looked at the effects of oral testing on mathematical performance. This study found that the mean scores for students with and without learning disabilities were higher with oral testing, but students without disabilities benefited significantly more from the accommodations. This suggests that the accommodation did not address a specific need for the students with learning disabilities.

Elbaum, et al. (2004) also conducted a study that looked at the effects of read aloud accommodations on reading comprehension. Their results showed that the relationship between accommodations and comprehension were not significant. Students with learning disabilities showed greater variability in their responses but did not benefit more than students without learning disabilities from the accommodation. The accommodation did change the students' comprehension but it was not significant enough to be considered effective.

All of the studies that were conducted on the effects of oral test accommodations resulted in the same findings. The accommodation did not significantly affect test scores,

but each study had slightly different results. This may be due to the fact that all three of the studies tested oral accommodations on different grades and different types of test. Meloy, et al. (2002) looked at the effects of read aloud accommodations on students in grades six to eight, and how the accommodations effected test scores for reading comprehension, problem solving, science and written expression. Elbaum (2007) looked at the effects of read aloud accommodations on students in grades six to ten, and how the accommodations affected reading comprehension. Elbaum, et al. (2004) looked at the effects of read aloud accommodations on students in grades seven to twelve, and how the accommodations affected reading comprehension. The variation in types of test subjects and test material could have been contributing factors in the different findings.

**Extended Time.** Students with learning disabilities can often be given extra time to complete exams, this allows them time to fully understand the material. Cohen, et al. (2005) conducted two studies to see how extended time influenced test scores of ninth grade students with and without learning disabilities, who took statewide math test. They found that difficulty with types of math content had no relationship with students receiving accommodations. Accommodations did little to help the performance of both students with and without learning disabilities. The underlying cause of underachievement had nothing to do with having a disability or receiving accommodations, but was because students didn't have math skills mastered. This study suggests that the accommodations and students' reading levels had no effect on the test scores.

Another study carried out by Lindstrom, and Gregg (2007) looked at the role of extended time on the SAT (Scholastic Aptitude Reasoning Test, 2005) for students with

learning disabilities. In this study they focused on the critical reading, math and writing sections of the SAT. Their results showed that there was a slight difference in the mean scores for both students with and without learning disabilities when given extra time, but it was not significant enough to suggest that it was an effect of extended time.

Both studies that looked at the effects of extended time on test scores showed that the accommodation did not significantly improve students' scores. Test scores slightly increased but it did not reach significant, so we are unable to conclude that it was a result of the extended time. These two studies had slightly different findings; this could be a result from the different test subjects and types of test. Cohen, et al. (2005) looked at the effects of extended time on grade nine students math test scores, whereas Lindstrom, and Gregg (2007) looked at the effects of extended time on grade twelve students, and their test scores on the critical reading, math and writing sections of the SAT.

**Visual Aids.** Visual aids are often used on geometry tests for students with mathematical disabilities. Visual aid accommodations are when pictures are provided on test to allow students to better understand the material, or to be able to visually see what is being asked. Students with different types of learning disabilities may struggle with visual imagery skills and chunking visual information is often used as an accommodation (Zhang, et al., 2012). A study conducted by Zhang, et al. (2012) explored the effects of visual aids on geometry tests for students with math disabilities. The results from this study showed that students with learning disabilities performed better when visual aids were used as an accommodation. Students also revealed on a survey that they found this accommodation to be easier than the original test. The results from this study also show

that narrowing in on a specific type of learning disability and choosing an appropriate accommodation has positive benefits.

**Computer Based Testing.** Students with learning disabilities often write their exam on a computer to bridge the academic gap. Other technology may also be used as a tool for students with learning disabilities. Calhoon, et al. (2000) conducted a study that looked at the effects of computer based test accommodations for students with learning disabilities. In this study they looked at the effects of having a computer based reader, and a video of someone reading the test. The results from this study showed that both technology accommodations increased the scores for students with learning disabilities, and may have helped students uncover knowledge that was hidden by their disability.

### **Academic Benefits**

Alternate accommodations benefit the students in many different ways. After looking at a number of different studies we can focus on how each type of accommodation affected student's academic outcome. By looking at how much these accommodations improved the students' grades we have a better idea of which accommodations work. Many of the alternate accommodations did not benefit students academically.

**Test Scores.** By comparing and contrasting student outcomes in each type of accommodation we are able to see how beneficial alternate accommodations are and which accommodations worked the best. In summary, noise reduction accommodations had a significant benefit on students' test scores. Oral testing did have a significant benefit, but it benefited both students with and without learning disabilities, and in another study it did not benefit students academically. Extended time accommodations

also did not benefit students. Visual aids did benefit students' test scores, but this may be largely due to the fact that this type of accommodation was specific to students with mathematical disabilities. Computer based testing also benefited students academically, but the technology that was used also incorporated reading as an accommodation.

These results show that noise reduction, visual aids and computer based testing were the only accommodations that benefited students' academic outcomes. Noise reduction accommodations were the most effective, due to the fact that it was not narrowed in on one type of disability and it was the only accommodation used. The setting in which a student writes an exam has a major effect on their outcome, being away from distraction in a quiet space had the strongest outcome on students' academic scores.

### **Future Improvements**

After analysing the outcomes in the studies, I am able to suggested future improvements. There are several key assumptions made about test accommodations, which are that accommodations are helpful and will increase test scores, that accommodations based on a teacher judgement are correct and that they meet the needs of all students (Schulte, et al., 2001). By looking at several studies we know that these assumptions are wrong. Many improvements need to be made so that all accommodations are beneficial for students with learning disabilities. Some of these improvements include using multiple accommodations to benefit students academically. Accommodations should also be customized to individual needs, and different classroom placement options need to be a possible accommodation in order to allow students to learn and write test in

appropriate environments. The impacts of accommodations need to be further investigated.

**Multiple Accommodations.** Calhoun, et al. (2000) study is a perfect example of how multiple accommodations can benefit students with learning disabilities. In their study they used computer based and oral testing as an accommodation, and this proved to increase students' scores. Using more than one accommodation at a time allowed many of the students' needs to be met. Multiple accommodations enable students to have a better test setting and provided them with more tools to help bridge the academic gap. By using this we can give learning-disabled students a fair opportunity.

**Custom Accommodations.** Accommodations need to be adjusted to meet the needs of students on an individual level. Determining accommodations for students with learning disabilities is especially difficult because of the heterogeneous nature of this population, which makes it difficult to group these students by characteristics of their disability (Lai, & Berkeley, 2012). An example of this was in Zhang, et al. (2012) study, making accommodations based on the students' disability improved test scores. In their study they used visual aids on geometry tests for students with mathematical disabilities. Matching the accommodations to a category of disability allows students to have the support in only the areas that they struggle with. Custom accommodations can be used to further this, by matching accommodations on an individual bases. Each type of learning disability is very unique, and every student with a learning disability is very different from one another. What works for one student may not work for the other. By customizing the test setting for students we can allow them the opportunity to receive the resources that they need.

**Placements.** Another possible improvement that could be made is placing students in different classroom settings. This would enable students with learning disabilities to have accommodations during testing and while they are learning. Students can be placed in a number of different accommodation settings that include regular classrooms, self-contained classrooms, resource rooms or special schools. This could improve students' educational achievement, but there are negative stigmas around the idea of separating students from their peers. The fear is that the separation will cause students with learning disabilities to have a negative self-image. A study conducted by Elbaum (2002) compared the self-concepts of students with learning disabilities in different educational placements. The finding from this study showed that there is no association between the self-concept of students with learning disabilities and their educational placement. Contrary to predication based on the stigmatization perspective, students with learning disabilities placed in regular classrooms for all their instruction did not exhibit higher self-concept than students placed in either part time or full time special education classrooms. Changing the placement settings of students with learning disabilities may be a possible way to bridge the gap between achievement and intelligence.

**Studies.** There is a major lack of information on alternate accommodations for students with learning disabilities, more studies need to be conducted in order to gather the information that is needed. Without knowing how each type of accommodations affects each type of learning disability, we will never be able to allow students with learning disabilities to reach their full academic potential. Unfortunately, even if research were to provide conclusive evidence about which test accommodations produce

differential benefits for students with learning disabilities, findings would apply only to the average performance of students with learning disabilities, because it is a heterogeneous group (Fuchs, et al., 2001).

### **Conclusion**

With the number of learning disabled students increasing, academic accommodations need to be improved to better suit the needs of students. Alternate accommodations are put in place to benefit students academically, and bridge the gap between achievement and intelligence.

The findings in this paper are limited because they only looked at a small number of studies, and only explore the effects on elementary to high school students. Accommodations made in post-secondary settings differ dramatically, and are better suited to individual needs. It is also important to consider the limitations in the various studies that I compared. All of the studies used had their own individual limitations that affect their overall findings.

The findings show that noise reduction, visual aids and computer-based accommodations significantly benefit students with learning disabilities, but oral testing and extended time did not. Contrary to my hypothesis, not all alternate accommodations benefit students with learning disabilities. Many improvements need to be made in order to allow students to reach their full potential. It is clear that further research linking diagnostic assessments to testing and course related accommodations are needed (Lindstrom, 2007). This type of information is important, because a lot of resources are used to provide accommodation and it impacts students' academic outcomes. Future research needs to take into account individual differences and how to base

accommodations around students' needs. In conclusion, accommodations are necessary for students with learning disabilities, but currently not all accommodation are useful. Students with learning disabilities deserve to have the same opportunities as students without learning disabilities, and should not be held back academically because accommodations do not meet their needs.

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