



2011 Report of LearningRx Training Results



based on 2009 data

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Whereas other programs will not guarantee gains for individuals participating in their programs, LearningRx will. Individual results, however, can vary from the averages presented in this report and from student to student.

INTRODUCTION FROM DR. KEN GIBSON



Dr. Ken Gibson is founder and CEO of LearningRx, a company with over 70 centers across the country specializing in making kids and adults of all ages measurably smarter through research-based programs that train the brain.

Nearly 3,000 children and adults received training in 2009 at our 70 brain training centers throughout the United States. Some were college students seeking greater academic success. Others were career or senior adults wanting to stay mentally sharp, or accident victims wanting to regain skills they had lost due to an injury.

The majority, however, were students struggling to do better in school.

Why did their families choose brain training over tutoring? Perhaps it's because, dollar for dollar, brain training is 7 times more effective than tutoring. (Want dollar figures? *See page 18*).

Here's why brain training is so effective:

Brain training doesn't re-teach information, like tutoring does. Instead, brain training strengthens the underlying brain skills that make learning possible. Since weak cognitive skills account for about 80% of all learning difficulties, you can't imagine how life-changing this can be for a struggling student!

Tutoring asks students to simply work harder with the weak cognitive skills that were unable to fully grasp the information the first time it was taught. But LearningRx brain training takes a different approach. We eliminate the cause of the learning struggle by targeting weak cognitive skills and making them stronger. (How much stronger? *See page 7*).

Furthermore, LearningRx brain training is research-based. We are constantly evaluating

our results, and applying the latest research to modify and improve our programs.

Not only that, but at LearningRx we measure the gains of every student using the gold standard of cognitive skills testing. This means that LearningRx not only gets unmatched results, we can measure those results scientifically.

In the following report, you'll see some of the impressive results of our brain training programs. (Like 2.9 years of reading gains in as little as six months. *See page 12*).

What you can't see in these pages are the life-long benefits our students enjoy as a result of brain training. LearningRx students don't just get better grades and greater IQ; they get faster, sharper brains that help them succeed in every area of life, over the course of their entire life. (Did you know that LearningRx brain training raises IQ by an average of 15 points or more, which statistics link to higher salaries? In fact, statistics prove that a 15-point increase in IQ can result in as much as \$20,000 more in earnings per year! *See page 19*).

The results are in. Brain training changes lives. Will it change yours?

A handwritten signature in black ink, appearing to read 'Ken', written in a cursive, stylized script.

Dr. Ken Gibson
Founder & CEO, LearningRx

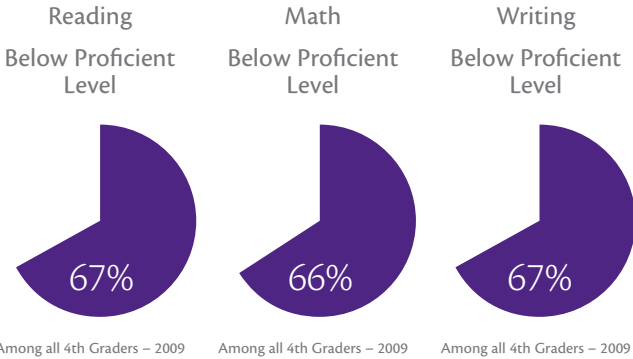
WHO BENEFITED FROM LEARNINGRX IN 2009?

In 2009, nearly 3,000 children, teens and adults received training at one of LearningRx's 70 Brain Training Centers across the country. They came to LearningRx from every age and stage of life, all of them seeking the life-changing benefits of a faster, smarter brain.

The majority of our students were school-aged children and teens struggling to succeed in school—particularly students with reading and attention difficulties. And it's easy to see why they came to us for help: According to the National Report Card, less than 1 out of 3 students in America are proficient in reading and math. To make matters even worse, more than 25% are functioning two or more years behind expected levels.

In addition, many of our students came to us reporting various learning issues or diagnoses as reported below.

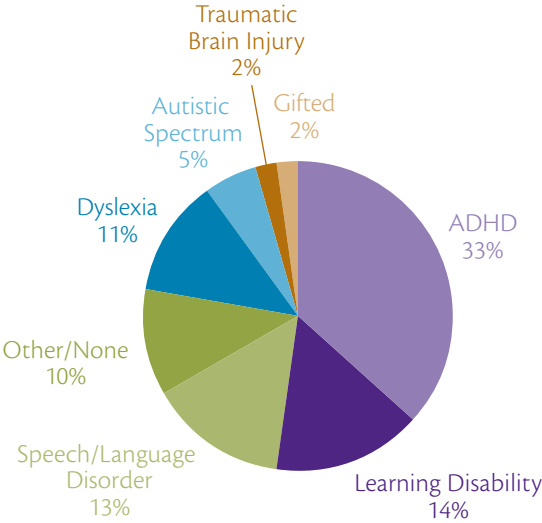
The Nation's Report Card
US Scores for Reading, Math, and Writing



Percentage of students who came to us reporting the following symptoms:

Attention issues	67%
Reading struggles	54%
Poor comprehension	51%
Writing struggles	50%
Working slowly	47%
Low math skills	46%
Poor spelling	38%
Avoiding schoolwork	38%
Poor memory	36%
Motivation/behavior issues	36%
Low self-esteem	34%
Loses place/skips words	24%
Reverses letters	22%
Other	12%
Overly active	11%
Works too hard	9%

Percentage of students who came to us having been identified within one of the following categories:





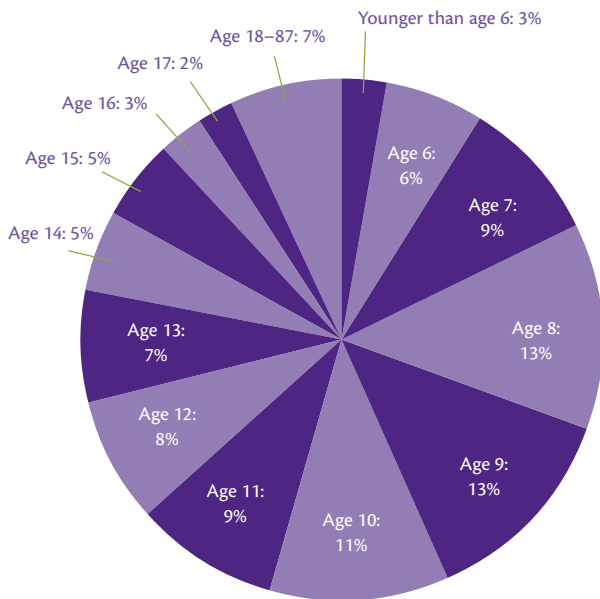
“I feel like I can achieve my goals on my own.”

“LearningRx has helped me in academics and athletics. Before, I would become confused with football play assignments. Since LearningRx, I know not only my own assignments, but those of my teammates as well. Plus, it used to take me hours to do my homework. Even then I needed my mom to help. I worked hard to get B’s and C’s. After LearningRx, I started high school. Now I have more assignments, yet I’m done in half the time—and my mom rarely helps me anymore. I’m getting mostly A’s. My confidence has shot up. Before, my goals were achieved with someone holding my hand. Now I feel like I can achieve my goals on my own, and I like that.”

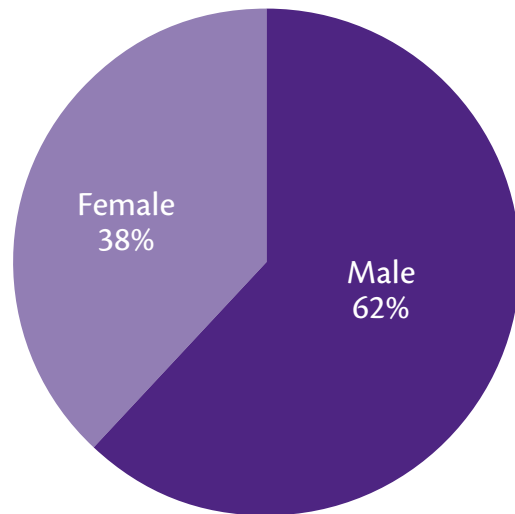
— D. (Age 16), Akron-Bath, OH

Finally, the following charts show the distribution of students who received training at our centers in 2009 according to age and gender:

Ages of LearningRx Students in 2009
Average age: 11.4 years



Gender of LearningRx Students in 2009



In summary, the average age of our students was 11.4 years, with the majority of our students between the ages of eight and thirteen. Male students outnumbered female students 62 to 38 percent.

STEP ONE: FINDING THE CAUSE

People come to us for help because they want to read better, learn faster, increase attention skills, develop a sharper memory or simply process information more quickly. But before we can address any of these issues, we need to know which underlying cognitive skills are weak and causing the problem.

ABOUT OUR TESTS:

LearningRx uses the gold standard of assessment tools, including the Woodcock-Johnson Tests of Cognitive Abilities, (WJ III-COG) and the Woodcock-Johnson Tests of Achievement, (WJ III-ACH). These nationally standardized tests are used across the country by educators and psychologists to measure cognitive skills and academic abilities.

These tests, combined with learning skills rating scales, measure the strengths of these key cognitive skills:

Long-term memory: The ability to recall information that was stored in the past.

Processing speed: The ability to perform simple or complex cognitive tasks.

Logic & reasoning: The ability to reason, form concepts, and solve problems using unfamiliar information or new procedures.

Short-term memory: The ability to apprehend and hold information in immediate awareness while simultaneously performing a mental operation.

Visual processing: The ability to perceive, analyze, and think in visual images.

Auditory processing (phonemic awareness): The ability to analyze, blend, and segment sounds.

Attention (three types): Sustained attention is the ability to stay on task; selective attention is the ability to not be

distracted; divided attention is the ability to handle more than one task at a time.

Our tests also measure word attack, which is the ability to apply phonic and structural analysis skills to pronounce unfamiliar printed words.

The WJ III-COG testing also generates a General Intellectual Ability (GIA) score, which represents the g factor (often referred to as general intelligence or IQ). We will commonly refer to the GIA score as IQ throughout this report.

ABOUT OUR SCORES:

As you look at the information in this report, you'll see that test scores are commonly presented in three forms:

Age Equivalent Scores indicate how one student's scores compare with the average scores of other age groups.

Percentile Scores indicate where a student would rank in a hypothetical group of 100 students. (For example: If a student ranked in the 25th percentile, it would mean that he scored as well or better than 25% of students in the group. If a student ranked in the 87th percentile, it would mean that he scored as well as or better than 87% of students in the group.)

Standard Scores indicate how far above or below average an individual score falls, using a common scale (ex: "average" of 100). IQ is normally presented as a standard score with "100" being average.

STEP TWO: ADDRESSING THE PROBLEM

Once we identify which cognitive skills are weak, our trainers provide intense one-on-one training designed to target and strengthen weak skills. Here are our five core programs:

ThinkRx is a fully integrated system of cognitive training exercises delivered in an intense, one-on-one environment. ThinkRx quickly identifies and corrects weak skills including: attention, short-term and long-term memory, processing speed, logic & reasoning, and visual and auditory processing.

ReadRx is a revolutionary ‘sound-to-code’ accelerated reading program modeled after the process by which spoken language is first learned. ReadRx includes the ThinkRx program.

MathRx is a unique program that tests, trains, and strengthens the core mental skills necessary for overall math success, critical thinking and problem solving. MathRx includes ThinkRx.

Einstein combines our ThinkRx, ReadRx and MathRx training programs.

LiftOff is a school-readiness program designed for preschool, kindergarten, and first grade students. Brain training builds a strong foundation of brain skills for long-term academic success.

In 2009, more than 85% of students participated in either ThinkRx or ReadRx programs, with the average length of training running about 18 weeks.

Parents of school-aged children can choose how involved they want to be in their child's training. Parental involvement can range from very little to providing about 80% of the training.

About a third of parents (35%) selected our “Pro Program,” where the full 5–6 hours of weekly training is done by the center staff. Roughly 3 out of 5 families (61%) opted for our “Partner Program” which allowed parents to provide about half the training at home. Four percent of parents went with the “Directed Program,” in which they provided the majority of weekly training at home, with 1 hour provided by the center staff.

Percentage of students by program

Program	Percentage	Program Length
LiftOff	8%	12 weeks
ThinkRx	41%	12 weeks
ReadRx*	45%	24 weeks
MathRx*	3%	20–24 weeks
Einstein*	3%	32 weeks
*Includes ThinkRx		



“I stumbled across LearningRx while looking for cognitive testing required by my college. I have seen such great improvement within

myself I don't even know where to begin. I've seen a difference in day to day activities as well as my abilities in reading and math. I can now go back to school confident in my ability to do well! Thanks guys!”

— E.S. (age 21)

Percentage of parental participation

Parent Participation Per Week	Percentage
5 hours (via the Directed Program)	4%
3 hours (via the Partner Program)	61%
0 hours (via the Pro Program)	35%

STEP THREE: MEASURING THE RESULTS OF LEARNINGRX BRAIN TRAINING

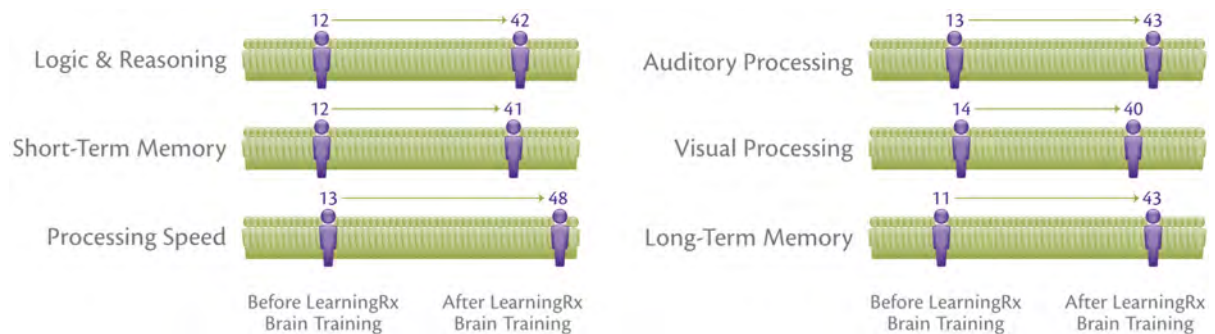
RESULT: STRONGER COGNITIVE SKILLS

The following graphs show before- and after-training results for more than 2,900 students who underwent an average of 18 weeks (90 hours) of training.

The graphs show changes in percentile rank. As we've mentioned, percentile rank indicates where a student would rank in a group of 100 students, with 50 being average. If 100 students lined up according to how well they performed on a test, a student in the 25th percentile, for example, would be number 25 in the line, having scored equal to or better than 25% (and not as well as 75%) of the other students.

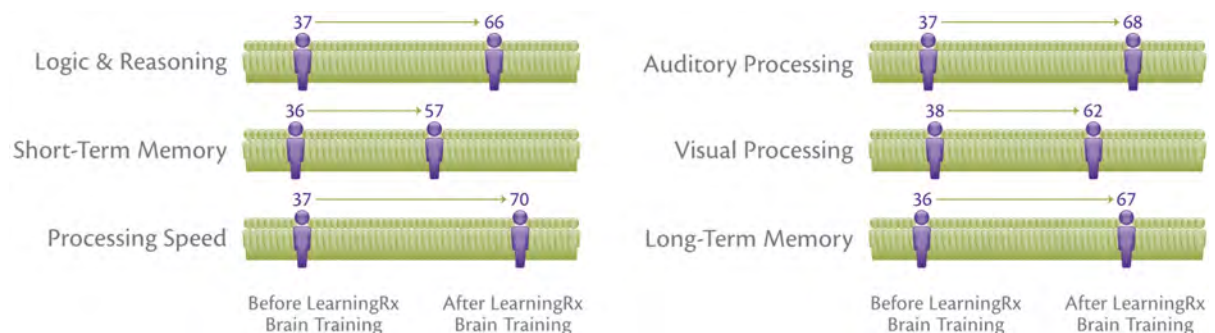
The following chart shows improvements in students who initially tested in the lowest percentile (24th percentile or lower). After brain training, students with severe cognitive weaknesses "moved up in line" an average of 30 percentile points:

Percentile Improvements among Students with Severe Cognitive Weakness

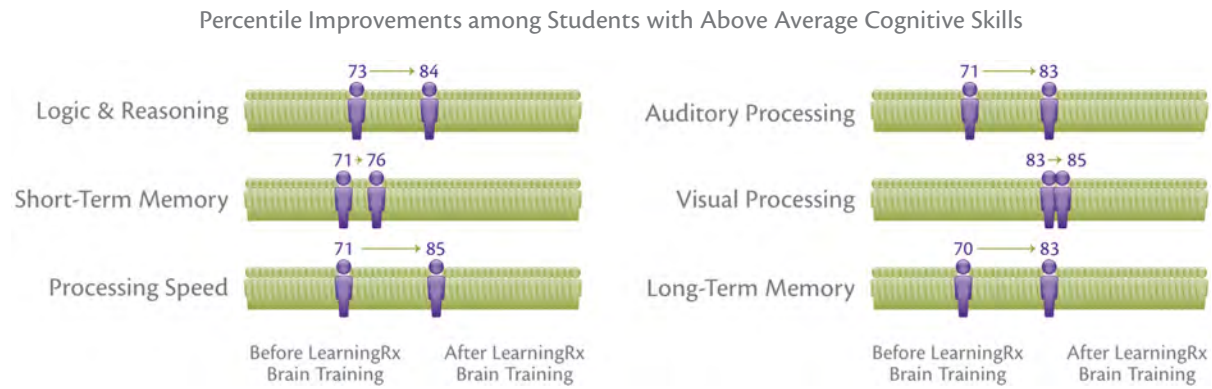


This chart shows improvements in students with moderate cognitive weakness who initially tested between the 25th and 50th percentile. After brain training, these students "moved up in line" an average of 28 percentile points:

Percentile Improvements among Students with Moderate Cognitive Weakness



Finally, this chart shows improvements in students with above-average cognitive skills who initially tested in the 51st to 100th percentile. These students “moved up in line” an average of about 10 percentile points:

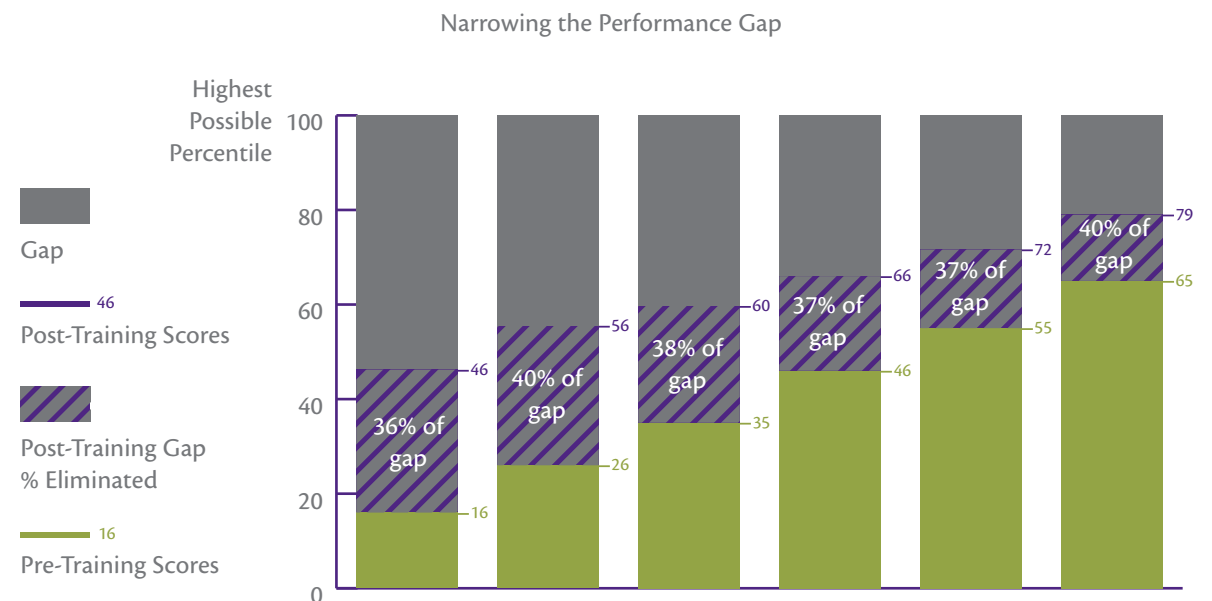


RESULT: NARROWING THE PERFORMANCE GAP

Another way to measure the overall results of LearningRx brain training is to consider the gap between how well a student performed in cognitive function prior to brain training and the highest possible performance.

Our goal is to eliminate 35% or more of that gap by the time that student completes the prescribed LearningRx training program (an average of 18 weeks of training). And if the same student participates in follow-up training a year later, our goal would be to eliminate 35% or more of the remaining gap, and so on.

The following chart shows, on average, how much of the gap was eliminated in 2009 based on how big the gap was to begin with:

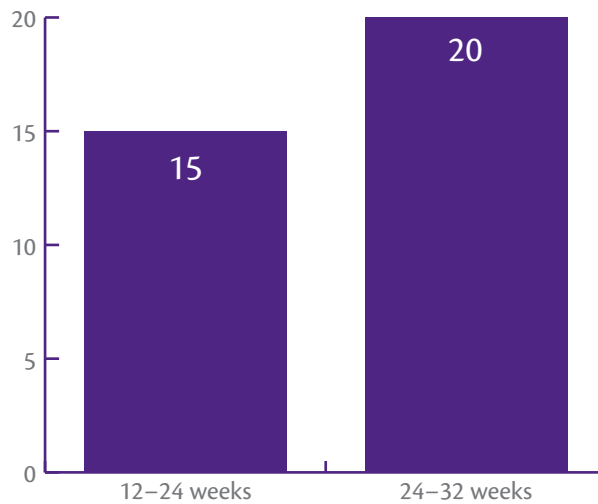


RESULT: HIGHER IQ

Yet another way to measure the improvements made by our students is by tracking gains in overall IQ (measured as General Intellectual Ability [GIA]).

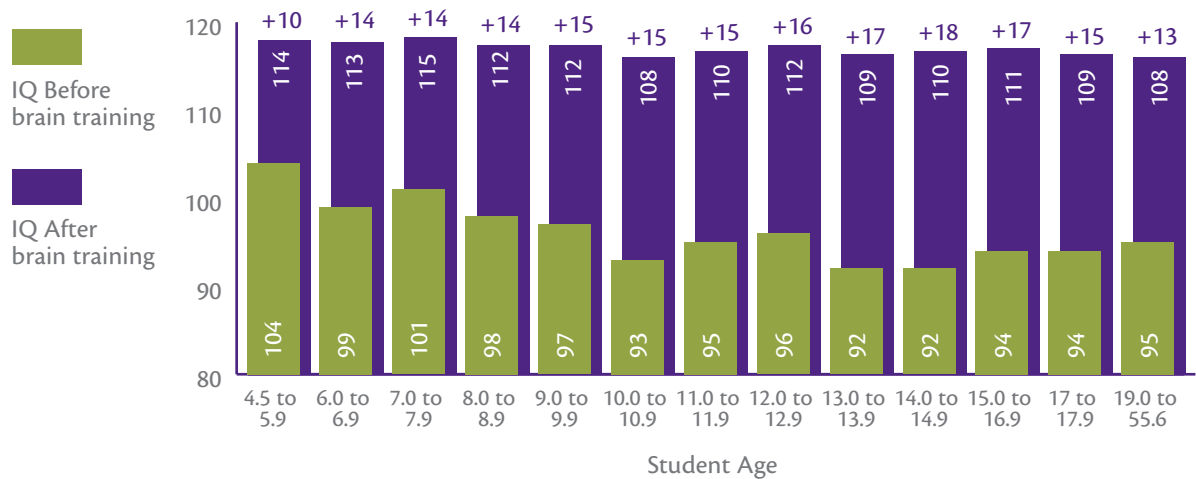
Gains in IQ differ depending on the length of time a student participates in our brain training programs. As you can see, the longer the training, the greater gains in IQ:

Average Gain in IQ Points Based on Length of Brain Training



Also, IQ gains are achieved across all age groups. As this chart shows, brain training students from 4 years old to 56 experienced significant gains in IQ:

Average Gain in IQ Based on Age of Student





“LearningRx changed my life.”

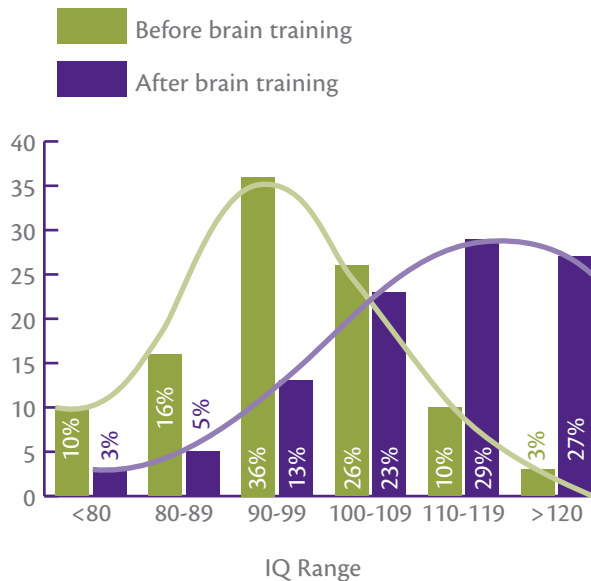
“As a kid I struggled in school. When I reached adulthood I continued to struggle. I lacked confidence and always thought of myself as a little behind everyone else. Then I found LearningRx. LearningRx changed my life. After the intense training, my brain felt like it was awake for the first time in my life! I feel like a successful adult now. My memory is so much better that I can go to the store now without a list! I also enjoy playing games with my family more because I understand the game strategies and can actually beat my husband! Thank you, LearningRx, for waking up my brain!”

— C.B., Chandler, AZ

Here’s another way to look at the gains that LearningRx students make in IQ. Bell curves show the distribution of scores in a given population. In the following chart, you can see that more of our students score higher in IQ after brain training than before brain training.

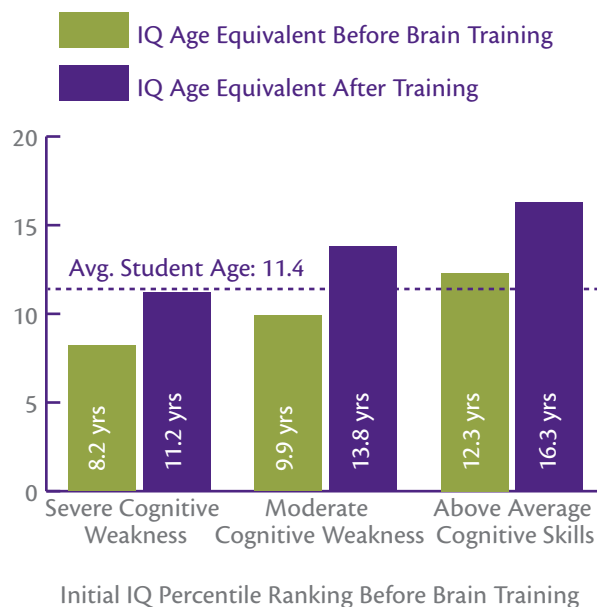
Also, you can see that after brain training, 56% of our students scored above 110 in IQ, whereas prior to brain training, only 13% of our students scored in this range.

More Students Scored Higher in IQ After LearningRx Brain Training Than Before



Finally, based on average IQ scores by age, this chart shows the gains our students experienced in terms of IQ “age equivalent.” For example, before brain training, students (average age 11.4) who had severe cognitive weaknesses had IQ scores equivalent, on average, to that of an 8-year-old. After brain training, these same students had IQ scores equivalent to that of an 11-year-old. That’s a 3-year gain in age-equivalent IQ!

IQ “Age Equivalent” of Students with Severe Cognitive Weakness, Moderate Cognitive Weakness and Above Average Cognitive Skills Before and After Brain Training



HOW BRAIN TRAINING HELPS SPECIFIC DIAGNOSES

LearningRx does not assign diagnostic labels to students. Our students, however, often report having received a diagnosis prior to coming to LearningRx. In the following pages, we'd like to share statistics as they relate to specific diagnoses.

How Brain Training Helps ADHD

The most common diagnosis with which students come to LearningRx is Attention Deficit Disorder and Attention Deficit Hyperactivity Disorder (referred to here as ADHD).

ADHD begins in childhood, with up to 70 percent of children with ADHD continuing to struggle into adolescence and adulthood.

LearningRx offers a promising solution to ADHD students and their parents. The exercises in our program target the underlying cognitive skills—including sustained attention, divided attention, selective attention, and processing speed—that strengthen attention skills.

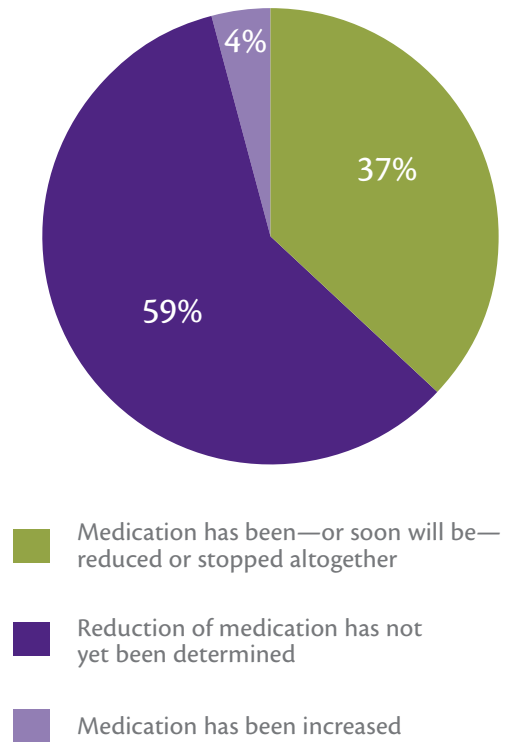
The following chart shows overall post-training gains made by students who came to us with a prior diagnosis of ADHD and who tested at or below the 50th percentile. On average, these students moved up between 23 and 35 percentile points, which represents a 3.1 to 5.7 year gain.

Skill Tested	Percentile Gain
General Intellectual Ability (GIA)	31
Logic & Reasoning	28
Processing Speed	35
Auditory Processing	30
Long-Term Memory	30
Short-Term Memory	23
Visual Processing	23

Another common result, while not reflected in test scores, has to do with a reduced need for medication following brain training.

Before training, 1,512 students who came to us with a prior diagnosis of ADHD also reported being on medication. Within six months of the start of training, parents of 37% of these students told us that their child's medication had been or was about to be reduced or stopped altogether.

Need for Continued Medication as Reported by Parents



How Brain Training Helps Reading Problems and Dyslexia

Reading, perhaps more than any other academic challenge, depends on strong cognitive skills for consistent success. Efficient auditory processing is at the core of all reading success. Studies by the department of education have suggested that poor auditory processing skills contribute to over 88% of the nation's reading problems!

LearningRx testing quickly identifies specific auditory processing deficits. Of all the improvements that LearningRx brain training consistently produces, nothing changes lives quite as dramatically as the improvement in reading that comes from cognitive skills training.

Dyslexia is another learning disability that hinders a person's ability to read, write, spell, and sometimes speak. The most common learning disability in children, dyslexia can persist into adulthood, although the sooner dyslexia is treated, the more favorable the outcome.

The following chart shows post-training gains made by students who came to us with a prior diagnosis of dyslexia and who tested at or below the 50th percentile. On average, these students moved up between 19 and 31 percentile points in cognitive skills but, more importantly, had a 2.9 year gain in reading after just 6 months of brain training.

Skill Tested	Percentile Gain
General Intellectual Ability (GIA)	29
Logic & Reasoning	28
Processing Speed	31
Auditory Processing	29
Long-Term Memory	29
Working Memory	19
Visual Processing	22

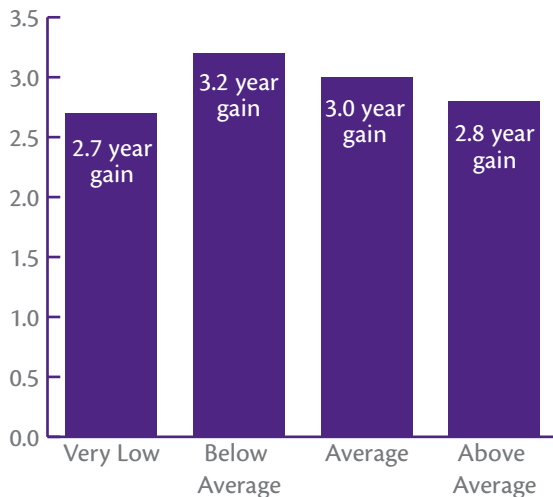
During 2009, 1,343 students were enrolled in the ReadRx training program. After less than six months in the program, these students gained between 2.5 to 3.2 years in age-equivalent reading skills. The average reading improvement was 2.9 years in less than 6 months. These students also gained an average of 18 percentile points in reading. Reading improvement is measured using word attack, which is the ability to apply phonic and structural analysis skills to pronounce unfamiliar printed words.

Average Gain in Reading After 6 Months
For All ReadRx Students

+2.9 years

What's significant is that these gains were consistent regardless of where a student initially ranked in reading. Students who tested significantly behind their peers—and students who tested at average or even above average—still experienced gains in percentile ranking and reading “age” after participating in ReadRx for less than six months.

Average Age Equivalent Gains in Reading After Brain Training By Severity of Reading Problem



Another interesting trend is that, the older the student, the greater the improvements. This is because older students with weak reading-related cognitive skills have had more time to fall farther behind their peers, creating a greater gap—but also a greater window of opportunity for improvement. In 2009, for example, our average 8-year-old student initially tested at six months behind in age-equivalent scores, our average 11-year-old student initially tested 2 years behind, and our average 15-year-old student initially tested 3.5 years behind. (See chart at the top of the next page)

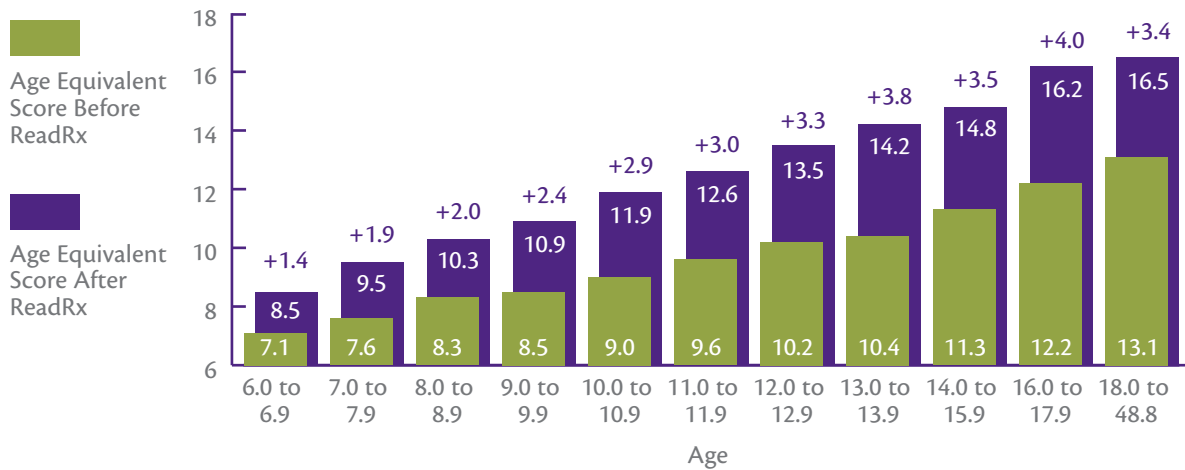


“Mekyla’s personality has changed since LearningRx.”

“Mekyla’s personality has changed since LearningRx. Her self-confidence has increased 200%. Her reading has improved immensely. She no longer stops to sound out words. She sees and understands what she has read. I truly feel this experience has given her the tools to continue through life on any path she chooses. Thank you, LearningRx! “

— M.G., Lincoln, NE

Average Age Equivalent Gains in Reading Before and After ReadRx (By Age)



How Brain Training Helps Learning Disabilities

Anyone wanting to learn faster, easier, and better is a good candidate for LearningRx brain training. Any student who struggles to learn or read is an exceptional candidate.

The following chart shows post-training gains made by students who came to us with a prior diagnosis of a learning disability and who tested at or below the 50th percentile. On average, these students moved up between 18 and 30 percentile points in IQ, logic & reasoning, processing speed, auditory processing, long-term memory, short-term memory and visual processing, for an average percentile gain of 24 percentile points:

Skill Tested	Percentile Gain
General Intellectual Ability (GIA)	27
Logic & Reasoning	23
Processing Speed	30
Auditory Processing	26
Long-Term Memory	25
Short-Term Memory	18
Visual Processing	20

How Brain Training Helps Speech and Language Disorders

The following chart shows post-training gains made by students who came to us with a prior diagnosis of a speech or language disorder and who tested at or below the 50th percentile. On average, these students moved up between 19 and 28 percentile points in IQ, reason and logic, processing speed, auditory processing, long-term memory, short-term memory and visual processing, for an average

percentile gain of 24 points in IQ and cognitive skills. These students also gained 3.2 years in age equivalent scores.

Skill Tested	Percentile Gain
General Intellectual Ability (GIA)	26
Logic & Reasoning	24
Processing Speed	28
Auditory Processing	25
Long-Term Memory	25
Short-Term Memory	19
Visual Processing	21

How Brain Training Helps Autism Spectrum Disorders

Students who come to us with diagnoses in the Autism Spectrum—including Autism, Asperger's Syndrome, and Pervasive Developmental Disorder (PDD)—benefit from brain training in two ways. First, one-on-one brain training takes place in the kind of structured, positive environment in which these students truly thrive. Second, since these students often display weaknesses in short-term memory, processing speed, and logic & reasoning (cognitive skills that LearningRx programs target and strengthen) the impact of brain training on their quality of life can be significant.

The following chart shows post-training gains made by students who came to us with a prior diagnosis of Autism, Asperger's Syndrome or PDD who tested at or below the 50th percentile. On average, these students moved up between 20 to 30 percentile points in auditory processing with an average percentile gain of 24 points in IQ and cognitive skills.

Percentile Point Gains in Students Performing Below Average and Previously Diagnosed with Autism, Asperger's Syndrome or PDD

Skill Tested	Percentile Gain
General Intellectual Ability (GIA)	30
Logic & Reasoning	21
Processing Speed	25
Auditory Processing	23
Long-Term Memory	25
Short-Term Memory	22
Visual Processing	20

How Brain Training Helps Traumatic Brain Injury (TBI)

Every year, millions of people in the U.S. sustain head and brain injuries. In addition, a growing number of soldiers are returning home from Iraq and Afghanistan having sustained traumatic brain injuries from concussions caused by explosions. According to the Pentagon, an estimated one in five soldiers who regularly work away from base has suffered at least one concussion.

When the brain is injured, connections between cells are damaged and the processing of information is impacted. TBI patients struggle with cognitive functions such as thinking, memory, reason, information processing, and communication.

And yet, a miraculous feature of the brain is something called neuroplasticity, which is the brain's capacity to repair network connections between neurons, and even create new connections, re-routing information around damaged areas. For someone with TBI, the combination of neuroplasticity and brain training offer extraordinary hope for dramatic or full recovery.

“A brain injury was affecting my memory and processing speed, as well as my ability to function in a normal social environment. After an intensive 12 week program at LearningRx, I’m now able to carry on a normal conversation without losing my train of thought, recall the names of objects without having to stop and think, and perform tasks without getting side tracked. I can once again live a normal and productive life.”

—K., (Age 49), Denver, CO

The brain training programs developed by LearningRx stimulate the connection systems in the brain. Our programs, specially adapted for TBI patients, literally rebuild areas of the brain's neural connection network, enabling TBI and stroke patients to regain lost brain function.

The following chart shows the percentile gains experienced by adult students with TBI after participating in brain training with LearningRx:

Percentile Gains Made by TBI Patients After Brain Training

Skill Tested	Percentile Gain
Processing Speed	25
Long-Term Memory	24
Auditory Processing	26
Short-Term Memory	22
Visual Processing	21
Logic & Reasoning	14

In 2009, in one of our centers, we had the privilege of assisting fourteen soldiers who had recently returned from the war in Iraq and Afghanistan with traumatic brain injury. The majority of these injuries were sustained as a result of blasts from roadside bombs (also known as “improvised explosive devices” or IEDs).

The results charted below demonstrate the effectiveness of brain training for the 14 soldiers we had the honor of working with in 2009.

Percentile Gains in IQ and Cognitive Skills Made by 14 Soldiers with TBI

Skill Tested	Percentile Gain
General Intellectual Ability (GIA)	37
Short-Term Memory	35
Long-Term Memory	34
Auditory Processing	31
Visual Processing	26
Visual Comprehension	24
Logic & Reasoning	23
Executive Processing Speed	21

STEP FOUR: MEASURING THE VALUE OF LEARNINGRX BRAIN TRAINING

MEASURING VALUE BASED ON SATISFACTION

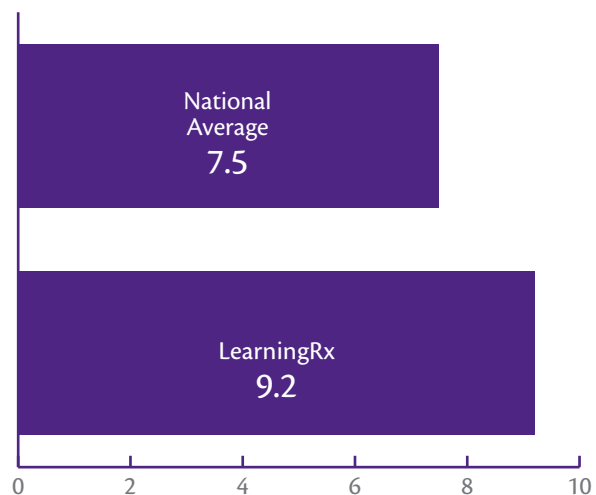
One of our very intentional goals as a company is to “WOW” our customers.

Every year, we receive thousands of testimonies from clients who are thrilled with the life-changing results they’ve experienced because of brain training at LearningRx (you’ve had a chance to read some of these real-life stories in the pages of this report). The stories shared by our students and their families are a powerful indicator of the value of the programs we offer.

We also take the time to measure the satisfaction of each and every LearningRx client using a well-known rating scale.

The Satisfaction Rating asks clients, “On a scale of 0 to 10 (10 being highest), how likely are you to recommend LearningRx to a friend or colleague?” Our 2009 satisfaction rating, based on over 3,000 customers, was 9.2 out of 10. This is nearly 20% higher than the national average and one of the highest ratings in the country.

“On a Scale of 0 to 10, How Likely are You to Recommend this Company to a Friend or Colleague?”



MEASURING VALUE BASED ON RETENTION OF GAINS

LearningRx students and their families are clearly happy with our training programs. But do the results last? Are the gains made in cognitive skills permanent?

Our method of brain training is designed to move new skills to a subconscious level for permanent results, and one-year follow-up studies confirm that this is indeed what occurs.

The following chart shows the retention of gains in two categories. The first category is General Intellectual Ability (or IQ), which is a composite score based on the core cognitive skills areas. The second category is Logic & Reasoning. In both categories, students tested higher, on average, a year later than they had immediately following brain training.



“We tried academic programs at Sylvan®, but Michael could never maintain the skills taught.

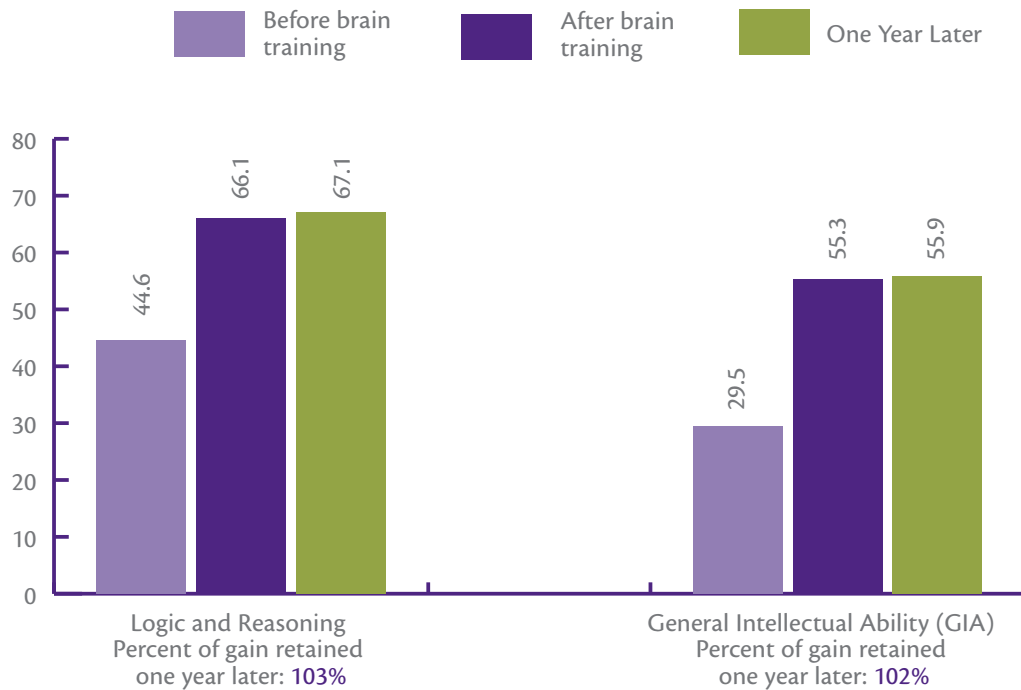
We knew the issue was deeper. At LearningRx, working one-on-one with his trainer, Michael developed the skills to strive for his fullest potential where, before, he found it easy to give up and hide. As his cognitive skills improved so did his approach to many things in and out of school. He is a much happier and confident child. His attitude is more positive. He welcomes challenges. He has

learned to learn! Michael is on his way to true success! We feel he can now achieve anything he desires!”

— A. and P., Verona, WI

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One-Year Retention of Gains based on Percentile Scores

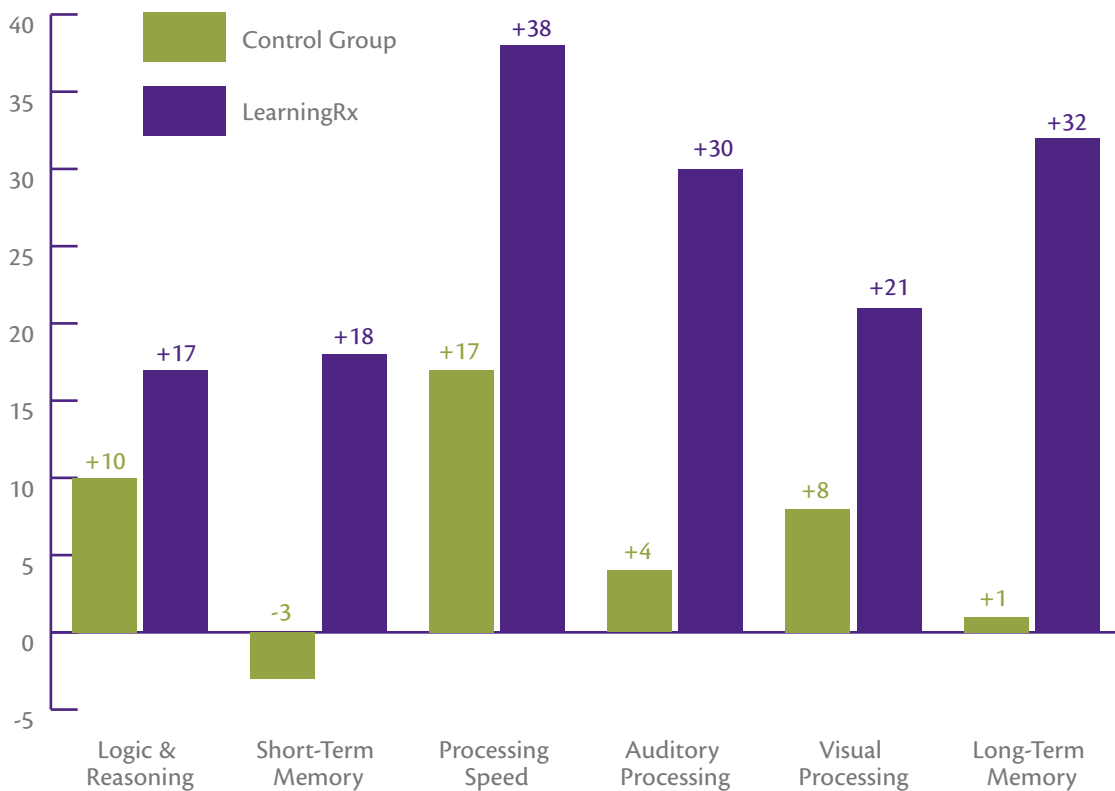


MEASURING VALUE BY COMPARISON TO CONTROL GROUP

LearningRx clients leave happy. The improvements they experience are lasting and, in some cases, even increase with time. But could the gains reported in these pages be simply the result of retaking a test? Could these gains have occurred on their own—without brain training?

Careful analysis of the test results would say no. But to further answer this question, we conducted a control study with 61 individuals. Thirty-one students received LearningRx brain training, while thirty (the control group) did not. Both groups had matching demographics. Both groups were tested and re-tested in the same manner and time frame. The only difference is that one group benefited from cognitive training. Are LearningRx brain training programs the cause of the lasting gains experienced by our students? The following charts tell the story:

Percentile Gains After Completion in Control Group vs. LearningRx



MEASURING VALUE BASED ON COST

It's good to know that LearningRx brain training programs create satisfied clients and lasting results. But for something to be of exceptional value, it also has to make sense financially.

Below are net reading gains reported by a 2005 Chicago Public School study on over 56,000 students after one year of tutoring. The following chart shows the average net gain in reading made by students enrolled in 30 different tutoring programs, as well as the average net gain made by students enrolled in the six best-performing tutoring programs. Finally, it shows the average net gain in reading for LearningRx students.

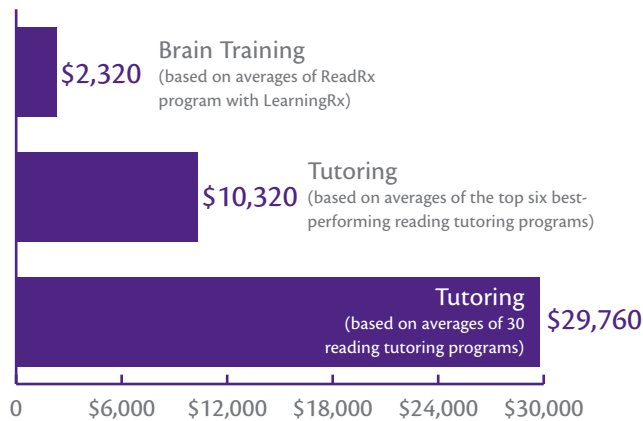
Based on regional hourly fees for group tutoring and one-on-one brain training (\$40 an hour for tutoring and \$80 per hour for LearningRx brain training), the following chart shows what it costs to obtain a one-year reading gain with LearningRx, as opposed to the average cost of obtaining the same gain with any of the thirty tutoring programs (including the six best-performing tutoring programs).

Cost Comparison Between LearningRx and Tutoring to Achieve a 1-Year Reading Gain

	Number of Students in Study	Net Reading Gains in Years	Sessions Required to Get Gains	Sessions Needed for a Year Gain	Likely Fee Per Hour Session	Investment Required for a Year Gain	Investment Required for a 3 Year Gain
LearningRx ReadRx training (2009)	1,453	2.9	84	29	\$80	\$2,320	\$6,960
Average of the top 6 of the 30 Reading Tutoring Programs (Chicago 2005)	1,983	0.24	62	258	\$40	\$10,320	\$30,960
Average of 30 Reading Tutoring Programs (Chicago 2005)	61,466	.09	67	744	\$40	\$29,760	\$89,280

Even calculating the hourly rate for brain training at twice the hourly rate for tutoring, LearningRx still costs less than half of what the very best tutoring programs charge—and only ten percent of what the majority of tutoring programs charge—for the same result!

Averages of Dollars Spent to Obtain a One-Year Gain in Reading Skills



Reading Improvements—Average Skill Years Gained



MEASURING VALUE BASED ON RETURN ON INVESTMENT

There is yet another way of measuring value, and it has to do with calculating financial returns received on your investment. According to the National Longitudinal Survey conducted by the US Department of Labor's Bureau of Labor Statistics, there is a significant relationship between IQ and earnings.

Of course, factors other than IQ can influence how much money someone makes over a lifetime. Some of these factors are environmental, such as the socioeconomic status of parents and the quantity and quality of educational opportunities. In a fascinating study published in the *American Economic Review* in 2002, however, these environmental influences were largely removed by studying the IQs and incomes of 733 pairs of siblings.

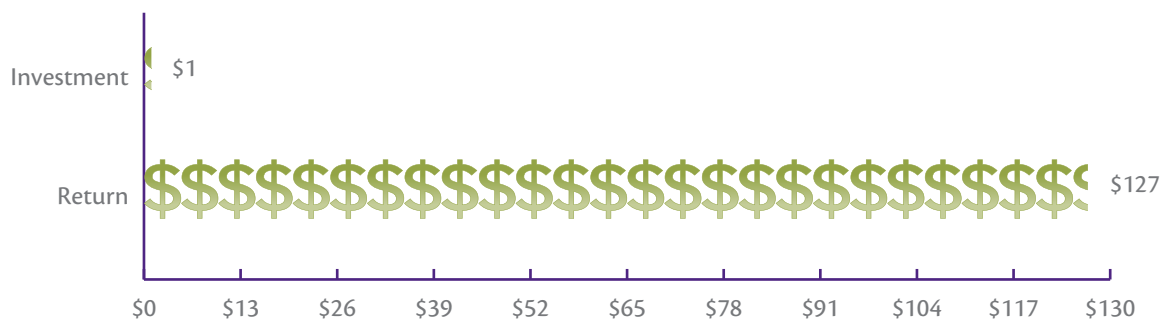
IQ Group Sibling Sample (733 pairs)

IQ Range	Income at age 30 (adjusted for 2010)	College Grads	Percentage with children born out of wedlock
120+	\$83,933	82%	3%
110–119	\$71,824	56%	6%
90–109	\$62,564	19%	14%
80–89	\$46,744	5%	33%
<80	\$28,017	3%	49%

The study showed that, other things being equal, a person's IQ significantly and directly impacts their lifetime earnings. Based on the study results, a gain of even ten IQ points can result in a \$9,000 to \$18,000 increase in annual earnings. Multiply that by 40 years of earnings and the numbers become even more significant.

Since LearningRx training results in higher IQ by an average of 15 points or more, this allows us to calculate a financial return on dollars invested at LearningRx, and is an important factor when measuring the value of brain training. Based on these numbers, the return in increased income over a lifetime is \$127 for every \$1 invested in brain training at LearningRx.

Return on Investment



CONCLUSION

The numbers tell the story. After brain training at LearningRx, our students of all ages really do experience the life-changing results of a faster, smarter brain.

APPENDIX

PERCENT OF STUDENTS INDICATING THE FOLLOWING INITIAL LEARNING CONCERNS:

Attention	67%
Reading	54%
Comprehension	51%
Writing	50%
Works slowly	47%
Math	46%
Spelling	38%
Avoidance of schoolwork	38%
Poor memory	36%
Motivation/behavior	36%
Low self-esteem	34%
Loses place/skips words	24%
Reversals of letters	22%
Other	12%
Overly active	11%
Works too hard	9%

LEARNINGRX STUDENTS BY AGE:

Age	Cumulative	Count	%
<6	75	75	3%
6	254	179	6%
7	513	259	9%
8	880	367	13%
9	1,249	369	13%
10	1,571	322	11%
11	1,833	262	9%
12	2,059	226	8%
13	2,257	198	7%
14	2,417	160	5%
15	2,570	153	5%
16	2,666	96	3%
17	2,714	48	2%
18 to 87	2,932	218	7%
Average Age	11.4		

PREVIOUS DIAGNOSIS BEFORE CONTACT WITH LEARNINGRX:

ADHD/ADD	33%
Learning Disorder	14%
Speech/Language	13%
Other/None	10%
Dyslexia	11%
Autistic Spectrum	5%
Traumatic Brain Injury	2%
Gifted	2%

PROGRAM PARTICIPATION BY PERCENTAGE OF STUDENTS AND LENGTH OF TRAINING:

Program	Count	%	Length of Program
LiftOff	227	8%	12 wks
ThinkRx	1,163	41%	12 wks
ReadRx	1,274	45%	24 wks
MathRx	76	3%	20–24 wks
Einstein	91	3%	32 wks

The average length of trainings was 18 weeks.

PARENT PARTICIPATION:

Program	Parent Participation Per Week	%
Directed	5 hours/week	4%
Partner	3 hours/week	61%
Pro	none	35%

PRE AND POST TRAINING STUDENT SCORES:

Scores By Initial Percentile Range	Pre Age Equiv Score	Post Age Equiv Score	Pre Percentile	Post Percentile	Pre IQ Score	Post IQ Score
<25	6.6	10.2				
Logic & Reasoning	6.8	10.6	12	42	80	96
Short-Term Memory	7.3	11.1	12	41	80	95
Processing Speed	8.7	12.4	13	48	81	99
Auditory Processing	7.6	12.1	13	43	80	96
Visual Processing	6.7	11.0	14	40	82	95
Long-Term Memory	6.8	11.1	11	43	78	96
General Intellectual Ability (GIA-Std)	8.2	11.2	11	39	78	94
25–50						
Logic & Reasoning	9.6	14.4	37	66	95	108
Short-Term Memory	9.5	12.7	36	57	95	104
Processing Speed	9.9	13.2	37	70	95	110
Auditory Processing	9.6	15.2	37	68	95	109
Visual Processing	9.4	15.9	38	62	95	105
Long-Term Memory	9.1	14.2	36	67	95	108
General Intellectual Ability (GIA-Std)	9.9	13.8	36	72	95	110
>50						
Logic & Reasoning	14.3	17.1	73	84	111	118
Short-Term Memory	14.0	15.7	71	76	110	114
Processing Speed	12.1	14.1	71	85	110	120
Auditory Processing	14.5	17.9	71	83	110	117
Visual Processing	18.6	20.2	83	85	115	118
Long-Term Memory	13.3	16.2	70	83	109	118
General Intellectual Ability (GIA-Std)	12.3	16.3	69	90	109	123

CHANGE IN IQ BY AGE OF STUDENT:

GIA Scores By Age	Pre Standard Score	Post Standard Score	Standard Score Gain	Count
4.5 to 5.9	104	114	10.0	11
6.0 to 6.9	99	113	13.6	39
7.0 to 7.9	101	115	13.8	90
8.0 to 8.9	98	112	13.2	158
9.0 to 9.9	97	112	15.0	138
10.0 to 10.9	93	108	15.3	131
11.0 to 11.9	95	110	15.4	97
12.0 to 12.9	96	112	15.9	81
13.0 to 13.9	92	109	16.6	76
14.0 to 14.9	92	110	17.5	66
15.0 to 16.9	94	111	16.6	91
17.0 to 18.9	94	109	15.2	40
19.0 to 55.6	95	108	13.3	54

[The GIA is a composite score that uses 7 cognitive subtest results]

SHIFT OF STUDENTS IN IQ RANGES AS A RESULT OF LEARNINGRX TRAINING:

General Intellectual Ability (GIA) Range	Percentage of students with pre-training GIA in this range	Percentage of students with post-training GIA in this range
<80	10%	3%
80 to 89.9	16%	5%
90 to 99.9	36%	13%
100 to 109.9	26%	23%
110 to 119.9	10%	29%
>120	3%	27%

CHANGE IN INTELLIGENCE (GIA) REPORTED IN AGES:

Initial IQ Percentile Range	Pre Age Equivalent	Post Age Equivalent
0 to 24.9	8.2	11.2
25 to 49.9	9.9	13.8
50 to 99.9	12.3	16.3

STUDENTS PREVIOUSLY DIAGNOSED WITH ADHD/ADD:

Completed training between 2004–2009

Skill Tested	All Scores		Lowest 50%		
	Percentile Gain	Client Count	Percentile Gain	Client Count	Age Equivalent Gain
General Intellectual Ability (GIA)	27	1,277	31	725	3.5
Logic & Reasoning	22	4,041	28	1,944	3.8
Processing Speed	26	3,241	35	1,718	3.4
Auditory Processing	22	3,997	30	1,962	4.9
Long-Term Memory	25	4,056	30	2,272	4.4
Working Memory	18	4,055	23	2,268	3.1
Visual Processing	16	4,034	23	1,559	5.7

All scores: All students with the above diagnosis whether or not the skill was deficient or trained

Lowest 50%: Students that ranked in the lower 50% on the pre test

Note: Since LearningRx training is normally focused on the most deficient cognitive skills, the gains listed in the columns “lowest 50%” would best reflect the results of LearningRx training

STUDENTS PREVIOUSLY DIAGNOSED AS DYSLEXIC:

Completed training between 2004–2009

Skill Tested	All Scores		Lowest 50%		
	Percentile Gain	Client Count	Percentile Gain	Client Count	Age Equivalent Gain
General Intellectual Ability (GIA)	27	437	29	279	3.2
Logic & Reasoning	21	1,319	28	651	4.0
Processing Speed	24	1,036	31	555	3.2
Auditory Processing	25	1,322	29	838	4.5
Long-Term Memory	26	1,325	29	874	4.2
Working Memory	16	1,326	19	849	2.7
Visual Processing	17	1,315	22	585	5.8

GAINS IN WORD ATTACK BY READRX STUDENTS:

	Pre Age Score	Post Age Score	Age Gain	Pre Percentile	Post Percentile	Percentile Gain	Count
All ReadRx Programs	9.6	12.4	2.9	35	53	18	1,343

1,343 students enrolled in ReadRx in 2009

GAINS IN WORD ATTACK BY READRX STUDENTS BASED ON PERCENTILE:

Results By Pre Percentile Range	Pre Age Equivalent Score	Post Age Equivalent Score	Age Gain	Pre Percentile	Post Percentile	Percentile Gain	Count
0 to 9.9	7.3	9.8	2.5	4	26	22	114
10 to 19.9	8.3	10.8	2.5	15	36	21	188
20 to 29.9	8.9	11.9	3.0	25	46	21	249
30 to 30.9	9.4	12.6	3.2	35	54	20	299
40 to 40.9	10.1	13.0	2.9	44	61	16	237
50 to 50.9	11.2	14.3	3.1	55	69	14	102
60 to 60.9	11.7	14.5	2.8	64	74	10	71

1,343 students enrolled in ReadRx in 2009

GAINS IN WORD ATTACK BY READRX STUDENTS BASED ON AGE:

Results By Age Range	Pre Age Score	Post Age Score	Age Gain	Pre Percentile	Post Percentile	Percentile Gain	Count
6 to 6.9	7.1	8.5	1.4	62	74	12	31
7 to 7.9	7.6	9.5	1.9	46	63	17	102
8 to 8.9	8.3	10.3	2.1	41	56	15	196
9 to 9.9	8.5	10.9	2.5	35	53	18	213
10 to 10.9	9.0	11.9	2.8	34	53	19	181
11 to 11.9	9.6	12.6	3.0	36	53	17	115
12 to 12.9	10.2	13.5	3.3	35	52	18	114
13 to 13.9	10.4	14.2	3.8	31	51	20	96
14 to 15.9	11.3	14.8	3.5	29	46	17	148
16 to 17.9	12.2	16.2	4.0	24	45	20	100
18 to 48.8	13.1	16.5	3.4	28	47	19	47

STUDENTS PREVIOUSLY DIAGNOSED WITH A LEARNING DISABILITY:

Skill Tested	All Scores		Lowest 50%	
	Percentile Gain	Client Count	Percentile Gain	Client Count
General Intellectual Ability (GIA)	25	510	27	386
Logic & Reasoning	20	1,592	23	965
Processing Speed	25	1,250	30	805
Auditory Processing	23	1,574	26	1,050
Long-Term Memory	23	1,601	25	1,129
Working Memory	16	1,597	18	1,093
Visual Processing	16	1,587	20	834

Note: Since LearningRx training is normally focused on the most deficient cognitive skills, the gains listed in the columns “lowest 50%” would best reflect the results of LearningRx training

STUDENTS PREVIOUSLY DIAGNOSED WITH A SPEECH OR LANGUAGE DISORDER:

Skill Tested	All Scores		Lowest 50%		
	Percentile Gain	Client Count	Percentile Gain	Client Count	Age Equivalent Gain
General Intellectual Ability (GIA)	24	483	26	331	2.7
Logic & Reasoning	20	1,492	24	852	3.3
Processing Speed	22	1,195	28	642	2.8
Auditory Processing	22	1,465	25	927	3.5
Long-Term Memory	22	1,495	25	955	3.5
Working Memory	16	1,485	19	913	2.4
Visual Processing	15	1,487	21	700	4.3

All scores: All students with the above diagnosis whether or not the skill was deficient or trained

Lowest 50%: Students that ranked in the lower 50% on the pre test

Note: Since LearningRx training is normally focused on the most deficient cognitive skills, the gains listed in the columns “lowest 50%” would best reflect the results of LearningRx training

STUDENTS PREVIOUSLY DIAGNOSED WITH AN AUTISM SPECTRUM DISORDER:

Skill Tested	All Scores		Lowest 50%		
	Percentile Gain	Client Count	Percentile Gain	Client Count	Age Equivalent Gain
General Intellectual Ability (GIA)	27	160	30	104	3.3
Logic & Reasoning	19	455	21	252	3.0
Processing Speed	22	376	25	229	2.6
Auditory Processing	19	445	23	232	3.6
Long-Term Memory	21	460	25	256	3.8
Working Memory	18	456	22	244	2.9
Visual Processing	16	459	20	198	4.4

STUDENTS PREVIOUSLY DIAGNOSED WITH TBI:

Skill	Adults				Under Age 14			
	Percentile Gain	SScore Gain	Pre Score Students <101	All count	Percentile Gain	Score Gain	Pre Score Students <101	All count
Processing Speed	25	15	17	41	9	7	8	21
Long-Term Memory	24	14	17	43	26	17	19	22
Auditory Processing	26	12	16	43	17	11	11	21
Short-Term Memory	22	13	16	43	13	8	12	19
Visual Processing	21	12	13	43	14	7	9	22
Logic & Reasoning	14	9	9	43	22	11	13	22

GAINS EXPERIENCED BY 14 SOLDIERS WITH TBI:

Test	Skill	Percentile Gain	Standard Score Gain	Count
General Intellectual Ability (GIA)	IQ	37	17	5
Numbers Reversed	Short-Term Memory	35	16	14
Visual-Auditory Learning	Long-Term Memory	34	16	14
Sound Awareness	Auditory Processing	31	14	14
Auditory Working Memory	Working Memory	31	14	12
Spatial Relations	Visual Processing	26	12	14
Verbal Comprehension	Verbal Comprehension	24	12	10
Concept Formation	Logic & Reasoning	23	12	14
Sound Blending	Auditory Processing	23	12	13
Pair Cancellation	Executive Processing Speed	21	16	14

GAINS EXPERIENCED BY ADULT STUDENTS:

Adults	Pre Training Percentile	Post Training Percentile	Percentile Rank Gain
General Intellectual Ability (GIA)	42	65	23
Logic & Reasoning	45	63	18
Short-Term Memory	40	56	16
Long-Term Memory	34	57	23
Processing Speed	47	69	22
Visual Processing	51	68	17
Auditory Processing	38	57	19
Word Attack	28	46	18

Data is based on 143 adult students (average age of 36) after 12 to 20 weeks of training

ELIMINATION OF GAP BASED ON PERCENTILE RANK:

Post Percentile	Rank Change	Pre Percentile Rank	Gap	Average Percent of Gap Eliminated
31	27	5	95	28%
46	31	16	84	36%
55	30	26	74	40%
60	25	35	65	38%
66	20	46	54	37%
72	16	55	45	37%
79	14	65	35	40%
83	8	75	25	33%

Based on 5,529 pre/post sets of test data (2009)

RETENTION OF COGNITIVE SKILLS GAINS:

Pre Tests	Percentile Rank			Percent of Gain from Post Test to 1 Year Follow-up Test Retained
	Pre Tests	Post Tests	1 Yr Tests	
Average Logic & Reasoning	44.6	66.1	67.1	103%
Average Pre General Intellectual Ability (GIA) below 51st Percentile	29.5	55.3	55.9	102%

RESULTS BASED ON COMPARISON TO CONTROL GROUP (PERCENTILE RANK):

	Control Pre	Control Post	LearningRx Pre	LearningRx Post
Long-Term Memory	53	54	45	77
Visual Processing	59	67	58	79
Short-Term Memory	45	42	44	62
Processing Speed	39	56	35	73
Auditory Processing	66	70	60	90
Logic & Reasoning	70	80	75	92

Test results from: Testing the Effects of LearningRx: 2009 Control Group Study
 Dick Carpenter, Ph.D., Associate Professor of Educational Leadership, Research, and Foundations, University of Colorado—Colorado Springs
 The full report can be found at: <http://www.learningrx.com/brain-training-research.htm>

**COMPARISON OF BRAIN TRAINING VS TUTORING AVERAGE
 COST TO OBTAIN A ONE-YEAR GAIN IN READING SKILLS:**

	Number of Students in Study	Reading gains in years	Sessions Required to Get Gains	Sessions Needed for a Year Gain	Likely Fee Per Hour Session	Investment Required for a 1 Year Gain	Investment Required for a 3 Year Gain
ReadRx Training (LearningRx 2009)	1,453	2.9	84	29	80	\$2,320	\$6,960
Average of the top 6 of the 30 Reading Tutoring Programs (Chicago 2005)	1,983	0.24	62	258	40	\$10,320	\$30,960
Average of 30 Reading Tutoring Programs (Chicago 2005)	61,466	0.09	67	744	40	\$29,760	\$89,280

RELATIONSHIP BETWEEN IQ AND EARNINGS:

IQ group Sibling Sample (733 pairs)			
IQ Range	Income at age 30 adjusted for 2010	College Grads	Percentage with children born out of wedlock
120+	\$83,933	82%	3%
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90–109	\$62,564	19%	14%
80–89	\$46,744	5%	33%
<80	\$28,017	3%	49%

While the results in this report are presented as averages, LearningRx recognizes and values the unique skills, challenges, strengths and progress of each individual student.

Evidence for the statement “80% of all learning difficulties are caused by weak cognitive skills”

The “80%” figure comes from a review of scientifically-based studies and papers from the past 15 years and from our own data and experience testing over 20,000 students.

Below are some key factors that need to be considered when dealing with the prevalent rates and causes of learning problems.

- 1) Definition of learning problems, learning struggles, learning disabilities, and similar terms. These terms will mean different things to different people and fields of study.
 - a. We all, at times, experience some type of learning struggle or difficulty. Therefore, it would be possible to include 100% of the population in a set called “people with learning problems”. This would result in a much lower prevalence percentage due to the fact that there are so many reasons why a person might occasionally have trouble learning.
 - b. Learning disability and its sub-groups have been defined by government authorities (see below) but those numbers are based on only those who have selectively been identified – not the total population. Thus, the prevalence percentage on a cognitive basis might be higher.
 - c. The percentage of the prevalence of a significant cognitive weakness as the basis for a learning problem will vary greatly depending upon how it is defined. For example, from a low of around 40% (if you include anyone that has any difficulty reading at any time) to close to 100% (if you include only the poorest 5% of readers).
 - d. Our figure of 80% is based upon the assumption that those students in the lowest 25th percentile of school performance have problems learning.
- 2) A reason for different prevalence percentages can be due to whether one or multiple cognitive skills are being considered as causes of learning problems. For example, if three different cognitive skills are critical for carrying out a learning task but only one is tested for, your prevalent rate will be inaccurate. It would be as if, wanting to know the percentage of people watching TV at any one moment, you counted only those watching in their living room but ignored those watching elsewhere. Your findings will be much lower than reality.

With the above two factors in mind, let’s start by looking at things other researchers are saying that support the 80% figure we use.

They break down learning disabilities into five to seven groups with reading-related disabilities comprising between 70 to 90% of all learning disabilities.

About 85% of those LD students have a primary learning disability in reading and language processing (LD Online)

Of all students with specific learning disabilities, 70%-80% have deficits in reading. (ICD-10 and DSM-IV codes: F81.0/315.00 - http://en.wikipedia.org/wiki/Learning_disabilities)

Of those with reading disabilities, 88% have a significant cognitive skill weakness (phonemic awareness).

88% of people with dyslexia share a common phonologic weakness

Subtypes of reading disability: Variability around a phonological core.

By Morris, Robin D.; Stuebing, Karla K.; Fletcher, Jack M.; Shaywitz, Sally E.; Lyon, G. Reid; Shankweiler, Donald P.; Katz, Leonard; Francis, David J.; Shaywitz, Bennett A. Journal of Educational Psychology. Vol 90(3), Sep 1998, 347–373.

Abstract: Results support the view that children with reading disability usually display impairments on phonological awareness measures, with discriminative variability on other measures involving phonological processing, language, and cognitive skills. (PsycINFO Database Record (c) 2008 APA, all rights reserved).

M. Wolf and P.G. Browsers, The Double-Deficit Hypothesis for the Developmental Dyslexias, Journal of Educational Psychology 91 (1999) 415–38: (the 88% number includes only the phonological awareness factor and does not include other cognitive skills weaknesses that were identified as significant contributing factors [like] rapid serial naming and verbal short-term memory.

A 2004 LearningRx Study of 1,495 third to fifth grade students with reading difficulties showed 77% had significantly weak, and another 20% showed below average, phonological awareness skills.



“LearningRx was the best money I ever spent.”

“It was an amazing transformation for my son Adam. Before the program it was like putting 2011 software into a computer from 1990. It just wouldn’t process. LearningRx upped the Pentium, put in brand new processors, rewired the old components. They helped produce, with a fast working, efficient brain, a student who no longer struggles, gets confused or frustrated, a student who skipped a level of math from last year to this year and makes all A’s and B’s.”

— A. in Indianapolis, IN



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