



Morningside Academy: A Learning Guarantee

By Gail Snyder

A money-back guarantee to any student who doesn't gain at least two years or more in all skill-deficit areas within one school year—that's the deal offered by Morningside Academy in Seattle, Washington, and, in its 12 years of operation, it has never returned a tuition. The academy, a private enterprise born of parental requests and an overload of student need, was founded by **Kent R. Johnson, Ph.D., Morningside's director.**

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– Gail Snyder



Incorporating the behavioral methods of Precision Teaching (PT) founded by Dr. Ogden Lindsley, Direct Instruction (DI) founded by Sigfried Engelmann, task analysis and instructional design as described by Susan Markle, and other unique technologies

within the Morningside Model of Generative Instruction, this academy has outstripped conventional educational methods repeatedly and impressively. The method includes classroom instruction followed by timed practice, charting of progress, feedback, positive reinforcement, and deciding what to learn and practice next. The academy’s students (both children and adults) achieve learning levels they thought they’d never reach and probably never would have. That’s because Morningside’s students

are primarily those labeled with learning disability problems or attention deficit disorder (ADD) as well as adults who have lived a lifetime of illiteracy. Using PT methods, the teachers at this academy bring these at-risk students years forward academically within hours of instruction. A very significant component of the Morningside Model is Precision Teaching. PT is not just a special education method designed for people with learning disabilities. Indeed, PT proponents assert that many “learning problems” are simply teaching problems. PT methods have been used in successful projects across America with students of all abilities. One project in Great Falls, Montana



was so successful it led to PT’s endorsement by the Office of Education Joint Dissemination Review Panel of the U.S. Office of Education as a commendable method for both regular and special education. In that project, students in the Sacajawea Elementary School were given 20 to 30 minutes per day of timed practice following regular instruction, coupled with self-charting of progress in basic skill areas. By the second year, after spending only 30 minutes a day using only those two PT

Figure 1
GRADE LEVEL GAINS/YEAR
Standardized Achievement Tests

Morningside Academy children’s mean standardized achievement test grade level gains in reading, language arts, and math since its inception in 1981.

YEAR	READING	LANGUAGE ARTS	MATH
81-82	2.4	1.6	2.1
82-83	2.3	1.9	1.9
83-84	2.4	1.9	2.0
84-85	2.5	2.7	2.2
85-86	2.0	3.0	2.5
86-87	2.3	2.3	1.9
87-88	2.3	3.5	2.2
88-89	2.5	3.0	2.7
89-90*	2.8	3.3	2.4
90-91*	2.2	3.8	3.9

*Metropolitan Achievement Test (MAT6)
All others: California Achievement Test

methods, the students scored 25 percentile points higher in reading than students in the rest of the school district. Before using the methods, both groups had compared equally.

Similar results occurred in spelling and study skills as measured by the Iowa Test of Basic Skills. In math, the Sacajawea students scored 44 percentile points higher on yearly achievement tests than the other students who had not used the PT methods of learning.

In fact, the skill advancement guaranteed for each student at Morningside Academy is often surpassed by its students, many of whom advance from two and one half to almost four academic years within one year (see *Figure 1*). “We have kids who are at risk, who were typically advancing [academically] three to six months during the whole school year in the standard educational setting. If the kids who are most at risk can make these kinds of gains, think about the kids who aren’t at risk,” said Johnson.

Johnson and other practitioners and developers of Precision Teaching have achieved the same progress with adult learners (as in Morningside’s adult literacy program), and with students who want to go to college, but need remedial training to qualify as in Joe Layng’s PreCollege Institute of Malcolm X College in Chicago (see *Figures 2 and 3*).

What are Johnson and his colleagues doing so differently from the educational system at large? They are using behavioral methods to bring an individual’s knowledge of skills to the level of “fluency.”

Dr. Carl Binder studied with B.F. Skinner at Harvard and served as an associate director for a university-affiliated human-learning research laboratory for 10 years. He defines fluency as “second-nature knowledge, near-automatic performance, the ability to perform without hesitation-in short, true mastery.”

Figure 2.

Project “Academic Storm”

- In its first case of technology transfer, the Morningside Model has been established at the Pre-College Institute of Malcolm X College in Chicago for students who want to attend a community college, but whose grades are well below the level needed to qualify.
- According to Johnson, in most cases, students such as these would need to spend two to five quarters to attain college level skills. Usually, the remedial student would then be tracked through a series of pre-college courses, often taking as long as two years or more to even begin college. “With today’s demands on an adult’s time, telling them they’ll need to invest this much more time in addition to college is just not a realistic goal,” said Johnson.
- The program now in progress at Malcolm X will prepare the students to enter college within one year. Several students in the program qualified to enter college in January, after only one semester.

THE PRE-COLLEGE INSTITUTE OF MALCOLM X COLLEGE

	<i>PRE-TEST</i> <i>Grade Equivalent Avg.</i>	<i>POST-TEST</i> <i>Grade Equivalent Avg.</i>	<i>AVERAGE YEARS</i> <i>GAINED</i>
GROUP 1			
Concepts	9.5	11.5	2.0
Problem Solving	8.5	10.5	2.0
Computation	10.5	12.4	1.9
GROUP 2			
Concepts	8.6	10.1	1.5
Problem Solving	7.2	9.6	2.2
Computation	5.7	12.4	6.7
GROUP 3			
Concepts	6.6	9.6	3.0
Problem Solving	7.1	8.9	1.8
Computation	4.0	11.4	7.5
GROUP 4			
Concepts	6.1	6.7	0.6
Problem Solving	5.4	6.3	0.9
Computation	5.0	6.0	1.0

* ACADEMIC STORM MATHEMATICS RESULTS AS MEASURED BY THE MAT6 STANDARDIZED TEST
 * DATA FROM 27 STUDENTS REPORTED, AVERAGE TIME IN MATHEMATICS PROGRAM 33 HOURS

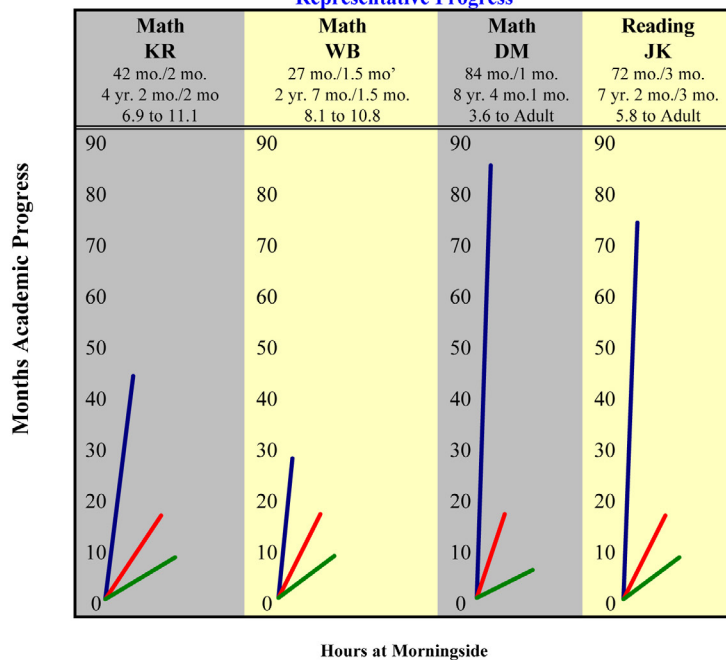
In January 1991, Morningside began training tutors of Chicago’s Academic Support Center for Malcolm X College in the skills of Precision Teaching. For over 100 hours including additional practice sessions, the tutors learned to present instruction and build fluency in over 250 mathematics objectives encompassing approximately eight grade levels of instruction. Students participated in the program, known as “Academic Storm,” for three hours, four days a week, over a period of six weeks during the summer with the above progress. (Dr. Joe Layng is the director of the program. Prentiss Jackson provides supervisory assistance.)

Figure 3.

PT and ADULT LITERACY

Through the federally-funded Job Training and Partnership Act, Morningside conducted a pilot adult literacy program using Precision Teaching methods. With this program Morningside now guarantees that each adult learner will gain two years or more per month in reading, writing, and math skills if those adults meet the requirement of attending the program for two hours per day, four out of five days per week. Some of the adults in the pilot program came from the ranks of the homeless; others were regularly in and out of jail. Yet, the gains these people made in the program were tremendous. “They were very wary of us at first and rightfully so,” said Johnson. “They hadn’t gotten a square deal before, but now they enjoyed this second chance to see what they could do.” Several of the adults in the program went on to earn their GEDs or high school equivalency diplomas.

**Morningside Academy Adult Literacy Program
Representative Progress**



- * These graphs represent the gain of four adults in Morningside’s literacy project expressed as months of academic progress as a function of hours of instruction. (20 hours equals 1 month of instruction).
- * Actual data for each student printed under the student’s initials show months progress/hours instruction, academic years-months progress./hours instruction*, and grade level entry to grade level exit. For example, KR grew 42 months in math in two months, a growth equivalent from grade 6.9 to grade 11.1 skills. DM grew 84 months in reading in one month, from a 3.6 grade reading level to an adult reading level – a progression of 8 years in 1 month!
- * *This data does not directly coincide with the months progress/hours data as students are off for approximately 2-3 months of the school year for summer break and national holidays. Therefore, years-months progress/hours instructed is computed using a decimal percentage of 12 months.
- * **Blue: Actual Gains** **Red: Average Gains 1 mo./1 mo.** **Green: Expected Gains Previous Performance**

establish the behavior, get 90 percent correct (if they’re progressive), and go on to the next thing. At Morningside we don’t go on to the next thing. We build fluency. The goal of fluency-building is to promote remembering or retention.” Students practice skills daily, doubling their rates each week until they meet the fluency aims.

Morningside began as a tutoring service in 1980, but Johnson soon realized that many of the students who requested help in subjects such as algebra or chemistry were “dysfluent” in the basics or component parts that made up those skills. Today, Morningside is an accredited academy with a full-time and summer program curriculum. Student groups of 15 are taught by two adults—a teacher and a teacher’s aide, called fluency coach. The teacher presents instruction and supervises the fluency coach’s fluency building with students. As the school year progresses, the students themselves learn to assume the role of fluency coach with each other.

“It’s taken us 12 years of research and refinement to get to the point where instruction is this powerful,” stated Johnson. “Our American educational system seems to focus on the accuracy of performance immediately following instruction. We call that ‘establishing,’ but it is often where educators stop. They

FREQUENCY, ENDURANCE, APPLICATION

As a major departure from most learning systems, PT teachers eliminated the measurement system of percent correct and switched to monitoring the frequency of student performance. In other words, teachers began

Figure 4
CURRICULUM LEAPS
In FRACTIONS PROBLEM SOLVING

Accuracy ratios (corrects/errors) of four students on two administrations of the fractions problem solving placement test. Instruction and fluency-building in whole number problem solving and fractions computation intervened between the two administrations of the placement tests.

INTERVENTION			
Student 1	5/9	Instruction and fluency	14/0
Student 2	7/7	Building in whole number	13/1
Student 3	3/11	Problem solving and	14/0
Student 4	7/7	Fractions computation	14/0

counting the number of words written, math problems solved, sentences read, and so on, that a student could complete within a certain period of time, usually a period of one minute “It turns out that a minute sample of someone’s behavior is highly predictive of how he or she will do over longer periods of time and in other contexts,” explained Johnson. As the students improve on the timed practice, teachers begin to examine endurance, or how long a student can engage in an activity over a longer period of time; as well as application, or how well a student can apply what is learned to something new or novel.

“We focus on retention, endurance, and application, in addition to the accuracy of performance,” said Johnson. “We look for the rate that facilitates remembering, for example, the rate of math facts it takes to never forget them, the rate that does not decrease when the student must perform them over a long period of time, and the rate that lets a student grow faster and learn more complex skills. We call these REAP/Retention, endurance, and application performance standards. It has had a remarkable impact on how we teach.”

FLUENCY-TOTAL RECALL

The fact that we seldom remember what we’ve learned is what Johnson calls the sham and the shame of the notion of forgetting. “We don’t expect ourselves or our students to remember much of what is learned from one year to the next. What we fail to realize is that we don’t remember because we never learned the subject fluently or so automatically that



the facts come to us as quickly as our own names. We don't want them to think about these skills," said Johnson. "We want them to be automatic so that they can recombine to produce performance or skills that you swore they didn't have. We call these curriculum leaps" (*see Figure 4*).

Building automaticity/fluency is the purpose of the PT method instruction followed by timed practice-making it much easier for students to quickly grasp more and more complex tasks, often without the need for instruction in those tasks. Think of fluency in learning a foreign language. If you must stop and think of each word before speaking, you aren't fluent in the language. The same is true of other skills.

"We think things get harder and harder and harder as we move forward," Johnson explained. "Well, it's no wonder, because we have less competency to bring to the next level. We finally reach the point where there are so many component skills that are so dysfluent that we give up the subject and avoid it. If we make those component skills fluent, then the end ones are simply recombinations of the old ones. Learning a skill or subject should get easier and easier."

SKILLS OF PRECISION TEACHING

A permanent repertoire of skills is what PT instructors are going for with their students and they achieve it. Not to simplify process, it has undergone revision since its development in the 1970s. Even today PT teachers and scientists seek to continuously improve the process. Educators can help their students make tremendous strides simply by using timed practices followed by charting of progress. However, there are many intricacies to the system, such as the ability to analyze student data to determine when to step back or move

ahead to higher levels of instruction, and when to raise or lower the frequency goals or aims.

Precision Teaching also requires the skill of breaking down the component parts of complex tasks and discovering which elements should be measured for frequency. PT teachers also use a channel-set matrix developed by Eric Haughton, one of PT's co-founders, which defines the many input/output combinations by which a student might learn such as by seeing and saying, hearing and writing, seeing and marking, pointing and marking, and so on. Haughton's 77-cell matrix offers a precision teacher multiple avenues for creating practice sheets and exercises for students so that the learning process remains varied, effective, and interesting.

"There are no particularly special skills one must have to use Precision Teaching methods, but a lot of training is required, approximately 100 hours of training," said Johnson. "I emphasize this so that parents and teachers don't think they can learn this in a day. Still, there are a lot of key things they can do immediately which make a huge difference to students."

TIMED PRACTICE

Johnson refers to the practice sheets and timings, which help the students, build to fluency levels. During these timings teachers emphasize that the practices are "a pace not a race." As the children grow more proficient, charting their progress of number

Ideally, all classrooms should include at least brief periods of timed practice, measurement and charting so that teachers and students can monitor progress toward mastery of basic skills on a daily basis.

– Carl Binder, Ph.D.

correct and number incorrect, they soon become their own coaches, conferring with instructors on how and when to set the next goal. Moving away from the percent correct measure not only more accurately reflects progress, but also takes away the punishment element of measurement.

Practice sheets range anywhere from a page full of addition and subtraction facts to a lined page for practicing handwriting, to complex passages that must be edited or marked in a certain way. The idea of timed practice may bring to mind the use of flash cards and the procedure is similar. Yet, with the practice sheets, the student determines the performance pace, not the teacher. Students using the PT methods enjoy charting their own progress and even that of their peers. They do so using a semi-logarithmic chart, also developed by Lindsley, known as the Standard Celeration Chart. The chart, which uses a count-per-minute scale, readily reflects small changes in performance. Even though its name sounds somewhat intimidating, kindergartners use it with ease.

“Whatever you teach you can put in a practice timing sheet and have students do minute timings on that skill a few times a day until they reach some level of proficiency,” said Johnson. “You can obtain successful effects with that procedure alone simply by putting things in terms of frequency instead of percent correct.”

OUT WITH PERCENT, IN WITH ENDURANCE

According to Johnson and other behavioral scientists, percentile measurement masks the true nature of fluency. A student may be able to compute several math problems or spell a list of words 100 percent correctly, but the effort may be so tedious that the student can't progress to tasks requiring multiple skills



such as long division or composition. “When you put behavior in a time unit, then you are talking about reality,” said Johnson. Percent correct takes it out of reality, because it has no time frame. It's very unclear. The question is really, ‘100 percent in how long and how many?’”

Endurance is another important aspect of fluency training. Will the student be able to perform the task over a longer period of time if needed or will his performance fall apart? Dr. Binder, also the author of many articles on PT, has found through a series of research projects that endurance has a direct correlation with distractibility, what most people may call “attention span.” Those students who are very proficient or fluent in a task are much more difficult to distract. Binder wanted to know, “Is there a frequency I can reach so that I'm not easily distracted?” It turns out there is. Frequency has a direct relationship

with distractibility, something Johnson calls “the whole name of the game for the so-called ADD child” “Frequency-building guarantees you won’t need peace and quiet to perform a skill. It has to do with competency, with fluency of a skill past the point of anything a percent measure could tell you,” he said.

USING PT IN THE PRESENT SYSTEM

Would the use of Precision Teaching take educators longer? Using PT, only 30 percent of a one-hour class would be used for instruction with the remainder of the class used for timed practice and charting of progress. Many teachers express concern about covering their objectives under such an agenda. “It turns out that what you get from building skills is the discovery that students can then do other that you didn’t think they could do,” said Johnson. “So you don’t lose ground; you gain ground. And you end up having to teach fewer things.”

REINFORCEMENT’S ROLE

“Performance Management is critical to this process; it helps students maintain the skill building,” said Johnson.

At Morningside, students earn points and praise for progress. They participate in setting their daily and weekly goals, which generally means doubling the rate of performance frequency from week to week. Students receive a daily report card with comments to share with their parents. The earned points are exchangeable for free time in the school’s recreation area, furnished entirely with toys and computer games requested by the students. Often the parents participate in reinforcement, offering other rewards for progress made and points earned. Even though Morningside has a planned reinforcement system for students, teachers have found that the progress students experience is a highly



motivating natural reinforcer. “They can see their improvement and they eat it up,” said Johnson. “It’s like an academic gymnasium where we let the students be the performers.”

PTS FUTURE WORLD

Johnson visualizes a school system where all skills and basic content are mastered by grade six. Middle school would be a time for discovery, for social and cooperative skill building, citizenship and less academically oriented areas. By high school, the learning environment would consist of a huge library with teachers stationed at desks as coaches and resource personnel for the students.

“All teachers can create superstars,” he said. “All kids can profit from this type of approach. In fact, if, for example, a math program was completed like this, you could learn calculus at a party! If you have the right foundations, calculus is something you could doodle on a napkin. Fluency in the basics assures their recombination’s while learning complex behaviors.”

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[About the Author]

GAIL SNYDER

Gail Snyder is a staff writer for Aubrey Daniels International. For the past 27 years, she has worked with clients to share their stories of the impact the science of behavior has had on their people and their business. In addition, Gail was the editor of Performance Management Magazine from 1987 to 2004.

[About ADI]

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