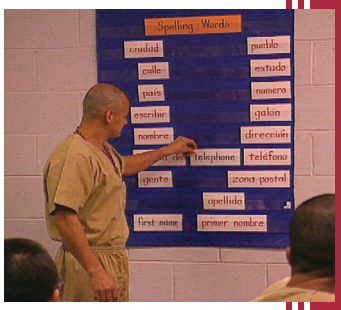

REMOVING BARRIERS:

Research-Based Strategies
For Teaching
Those Who Learn Differently

MTC INSTITUTE

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MTC is a leader in rehabilitation through education. MTC manages and operates 23 Job Corps centers in 19 states for the U.S. Department of Labor, preparing disadvantaged youth for meaningful careers. MTC is also the third largest operator of privatized correctional facilities in the world with approximately 13,000 beds under contract. The MTC Institute, a research unit within MTC, addresses topics relevant to job training and corrections programs. The Institute is dedicated to objectively examining data, projecting trends, researching program models, tracking public policy developments, and shedding light on promising practices. The Institute staff involved in this publication includes: Roberts T. Jones, President, Carl E. Nink, Executive Director, Isabel Dulfano, Ph.D. and Anne F. Parkinson, MBA, Research Associates, and Susie Webster, Coordinator and Layout Design.

REMOVING BARRIERS:

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For Teaching Those Who Learn Differently

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REMOVING BARRIERS:

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For Teaching Those Who Learn Differently

Introduction

Students in Job Corps and correctional classrooms have diverse skill levels and have experienced varied success in the traditional school system. Since many of these students struggle with learning, instructors of Job Corps and correctional classes need proven strategies and techniques to work effectively with them. This report presents information on how to identify these students and successfully intervene.

The literature on learning difficulties contains a "wealth of research on effective instructional interventions for school-aged students" (Corley & Taymans, 2002, p.61). However, comparatively little information exists for similarly challenged adults. Many Adult Basic Education studies are mostly descriptive and lack experimental control. Despite this, the majority of researchers agree the following classroom techniques are successful for those who learn differently. Fortunately, the instructional methods most useful for these students can enhance performance of all.

The Definition of 'learning differently'

All individuals learn differently from one another due to the complexity of the thinking process. Nevertheless, for the purposes of this report, students who learn differently are those whose processing of information impedes learning. Therefore, these differences become learning difficulties that require intervention. Problems can surface in receiving, retaining, and/or recalling data.

Learning is more difficult for these students, although they function along a continuum from moderate differences to major handicaps. Some students simply exhibit distinct propensities toward learning. They can be successful with minor instructor modifications. Other students have specific impediments requiring more intensive accommodation. Students whose functionalities approach major handicap will have some type of learning disorder(s), whether recognized or not. While a consensus on the definition of 'learning disorders' has not yet been reached, most definitions describe them as affecting the ability to acquire and use listening, speaking, reading, writing, reasoning, or math skills (Kerka, 1998).

Eight neurodevelopmental systems play a role in the learning process: the attention control system, the memory system, the language system, the spatial ordering system, the sequential ordering system, the motor system, the higher thinking system, and the social thinking system (Levine, 2002). Individuals who learn differently can exhibit distinct strengths and weaknesses in these areas. Difficulties in any or all of these systems may result in a student learning differently.

Although the specific cause of learning impediments is unknown, many elements shape an individual's learning profile, including genetics, family life and stress level, cultural values, peer influence, physical health, temperament, and educational experience (Levine, 2002). Given the myriad internal and external forces influencing individuals, the occurrence of differences in the way their brains work is not surprising.

Unfortunately, the gap in abilities between those with and without learning difficulties tends to increase over time if the learning differences are not addressed. This results in large part because students for whom learning is stressful and unrewarding are unlikely to pursue learning activities for pleasure. For instance, poor readers seldom read for enjoyment because reading is a chore and motivation is low. Conversely, skilled readers often read unassigned material, further improving their language abilities (Corley & Taymans, 2002, Levine, 2002).

The system dysfunctions underlying a particular learning difficulty may be unique for each student even though the manifestation of the difficulties may be the same. For example, a student with problems transferring ideas into written language and another with difficulty managing the grammar, syntax, or mechanics of writing both struggle with written output. A third student with a limited ability to process language has the same obstacle, as does a fourth, whose motor dysfunctions impede writing (Hammeken, 1995). The outcome is similar for all four of these students – difficulty writing – but the underlying causes, and therefore the necessary interventions, vary. This necessitates careful consideration of the true source of difficulty.

Perceived laziness may be an indication of learning difficulties. Often, underlying differences in neurodevelopmental systems result in low productivity. This may be as simple as students who rarely complete an entire assignment primarily because

they could not copy the directions in full from the board. Also, problems with the graphomotor function (used in the physical process of writing) can "dishearten your otherwise highly competent [student], rendering him underproductive when it comes to homework completion, test taking, and all written output in general" (Levine, 2002, p.181). Many students with learning troubles do not have difficulty all the time, causing them to seem inconsistent, but capable. Some students who have never succeeded in school simply stop trying. Teachers can explore possible learning impediments to determine if they are contributing to the problem.

For many of the students in Job Corps and correctional classes, English is not their first language. If students struggled to learn in their native language, they are likely to struggle in English. Conversely, students may exhibit difficulties in learning in a second language though they are proficient in their first. They may mask their disorder(s) in their native language through compensatory strategies or English may be less systematic or transparent to learn (Schwarz & Terrill, 2000).

Learning Differently and Behavioral Problems

Those with learning difficulties often exhibit troubling behavior. In fact, "academic and social failures are reciprocally and inextricably related" and "academic deficits are among the most powerful predictors of social failures and problem behaviors" (U.S. Dept. of Ed. OSEP, 2001, p.I-34). Nonetheless, this relationship is not causal. Students who struggle learning often use acting out or withdrawal as coping mechanisms. But those with learning impediments need not be behavioral problems if their learning needs are appropriately addressed.

> *Academic success is associated with a decrease in problem behavior.*
>
> -U.S. Dept. of Ed., 2001, p.I-39

Often, students behave inappropriately when their particular learning needs are not met or because of differences in their neurodevelopmental systems. For example, a student who has trouble controlling his or her attention may act disruptively. Additionally, those with language problems may appear to have trouble with attention, when instead they may be tuning out because understanding is too difficult. Those lacking systematic methods for solving problems may also appear to have attention deficits. Some students with low social thinking skills will exhibit behavior problems because they do not know how to resolve conflict. Other students with learning difficulties act out simply to draw attention away from their struggling performance. In these cases, strengthening the inadequate systems is a much more effective solution than focusing only on changing the behavior (Levine 2002). The need for students to act out or withdraw will diminish as they experience success in the classroom.

The Legal Term 'Learning Disability'

As defined in the Individuals with Disabilities Education Act (IDEA) Amendments of 1997, a specific learning disability is "a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations" (p.13). Students with learning disabilities may experience problems with various social skills, though the lack of these skills does not make up the disability itself (Lindop, 2002). Individuals between the ages of 3 and 21, inclusive, with diagnosed learning disabilities are eligible for special educational services under IDEA. Many disabilities are grouped together under a generic term like 'dyslexia', but Dr. Mel Levine (2002), an education expert and pediatrician, stresses "close observation and accurate description instead of lumping kids together in a category" (p.46). By grouping students, teachers may overlook strengths and inaccurately deal with an individual's discrete problems.

Legal Assessment

Students are eligible for special education services if a discrepancy exists between their abilities and their achievement in various educational areas. An individual "must score substantially higher on intelligence tests than on achievement tests, without exhibiting other traits that might cause academic difficulties" (Am. Ed. Research Assoc., 2002, p.12). Frequently, adults with learning disabilities are considered slow learners or stupid; however, they usually have average or above average intelligence (Kerka, 1998).

Many learning disorders are not readily observable from tests and a student could even have a disorder that has not yet been discovered (Levine, 1990). For this reason, teachers must not assume that those students officially labeled 'learning disabled' will be the only ones who struggle with learning or need particular strategies to succeed – the term 'those who learn differently' is much more inclusive. Whether students have a learning disability or not, they deserve to be taught in a way that maximizes their opportunity to learn. Fortunately, many of the same techniques used for those with learning disabilities can also profoundly affect the educational success of all students.

The Scope of Those Who Learn Differently

The number of students in the educational system who learn differently has never been formally estimated. This makes it difficult to approximate the number of students learning differently in Job Corps and correctional classes. While constituting only a portion, the number of those legally diagnosed as learning disabled acts as a starting point for determining the broader number. In 1999-2000, 2.9 million students, or half of all students served under IDEA, had diagnosed learning disabilities (U.S. Dept. of Ed. OSEP, 2001). Individuals with learning disabilities make up the largest percentage of those with disabilities, estimated at 5 to 20 percent of the general population

(Kerka, 1998). The 'specific learning disabilities' group designated in IDEA has grown more than 300 percent since 1976 and 36 percent in the last ten years (U.S. Dept. of Ed. OSEP, 2002).

Although data does not exist to ascertain the incidence rate of U.S. adults with learning disorders, approximately 15 percent is the generally accepted level (Taymans & Corley, 2001). The rate for certain subsets of the population can be assumed higher. Directors of adult basic education programs have estimated the prevalence rate among their students anywhere from 10 to 80 percent (Taymans & Corley, 2001; Schwarz & Terrill, 2000). Some believe that half of adults with low literacy skills have learning disorders (Kerka, 1998). Data suggest that at least 20 percent of children in the U.S. have difficulty with phonologic or phonemic awareness, crucial in learning to read (Levine, 2002). The rate for adults is likely similar since learning difficulties persist throughout life.

The educational attainment of those who learn differently varies from that of others. Of students in the general population, 53 percent attended a four-year postsecondary school, compared to only 13 percent of those with diagnosed learning disabilities (Nat'l Center for LD, 2002). The National Adult Literacy Survey in 1992 found that 3 percent of adults age 16 and over reported having a learning disability. The high school dropout rate among this group was 45 percent for women and 58 percent for men compared with 17 percent for women and 15 percent for men without reported learning disabilities. Over half of those reporting learning disabilities never finished high school, with the majority dropping out before 10th grade (Nat'l Inst. for Literacy, 2002b). This overrepresentation of individuals with learning difficulties among those with less than a high school diploma is likely to create its parallel in Job Corps and correctional classrooms, often designed to serve high school dropouts.

Learning Differently and Juvenile Delinquency

Students' school performance as measured by reading achievement and retention in grade (being held back) are correlated with delinquency. In addition, most delinquents are from disadvantaged backgrounds and are at risk for school failure, increasing the risk of delinquency (White, 2002). Within three to five years of leaving school, 31 percent of students with learning disabilities are arrested. "A characteristic of juveniles incarcerated in correctional and detention facilities is their poor experience with elementary and secondary education" (Hodges, Giuliotti, & Porpotage, 1994, p.1).

> *Devastating problems are most likely to ensue when learning difficulties are combined with other risk factors, such as poverty, excessive exposure to violence, and serious family turmoil.*
>
> -Levine, 2002, p.273

The most recent assessment of reading levels of incarcerated youth was in 1978, but the data may still be indicative of the make up of juvenile correctional education classrooms today. In that study, the average reading ability of juvenile detainees was at the fourth grade level (Hodges, et al., 1994). The 38 percent reading below this level are considered functionally illiterate. Much of this failure may be due to unidentified and/or unaddressed learning difficulties.

The findings of several studies suggest that the youth in a correctional classroom are much more likely to be coping with learning difficulties. More than one third of incarcerated youth previously received special education services. The Office of Juvenile Justice and Delinquency Prevention estimates that up to 70 percent of incarcerated youth meet eligibility requirements for special education compared with 8.6 percent of public school students (White, 2002). One study of early adolescent juvenile delinquents found that expressive language dysfunction was one factor in the subjects' involvement with the law (Levine, 2002).

Inmates with Learning Difficulties

The incidence of learning disabilities among the general adult population is estimated at 5 to 20 percent; among inmates it is roughly 30 to 50 percent (Corley, 1996a). The broader category of 'learning differently' is likely to be much higher. The 1992 National Adult Literacy Survey found that the majority of U.S. inmates have lower literacy skills and lower educational attainment than the general population (Corley, 1996b). In the same study, 11 percent compared with 3 percent of the general population reported having a learning disability (Lawrence, Mears, Dubin, & Travis, 2002). The Correctional Education Association has estimated the illiteracy rate among inmates at 75 percent (Batchelder & Pippert, 2002).

> *Emotional problems can erode and weaken neurodevelopmental functions, and neurodevelopmental dysfunctions frequently lead to emotional turmoil and behavior problems.*
>
> -Levine, 2002, p.262

Success for those who Learn Differently

Learning impediments are not entirely negative; in many students, they can actually help develop characteristics like resiliency and problem solving and lead to greater success in adulthood (Levine, 1990). Adults and adolescents who learn differently can achieve academic success once their difficulties are recognized and appropriately addressed, according to the National Institute for Literacy's *Bridges to Practice* training guides (Lindop, 2002).

Evidence exists that educational interventions can increase skills and help individuals make necessary accommodations. One study involving juvenile detainees found that after 38 to 71 hours of effective instruction designed for those with learning disorders, average gains in reading comprehension ranged between 7 to 12 months (Hodges, et al., 1994). The students also significantly increased their skills in composition, vocabulary, mechanics, and spelling. Equally important, self-esteem improved, removing a psychological barrier. In the Report to Congress on the Implementation of IDEA, 36 percent of states with data available reported higher test performance levels of students with learning disabilities than in previous years, while only 13 percent of states reported lower levels (U.S. Dept. of Ed. OSEP, 2001).

Although high school graduation rates are still lower for those with learning disabilities than for the general population, they have climbed steadily since 1993-94 to 63 percent. Conversely, the dropout rate has declined, reaching a six-year low of 27 percent by 1998-99 (U.S. Dept. of Ed. OSEP, 2001). Those with learning difficulties attend postsecondary schools at a lower rate than those without difficulties (63 percent versus 91 percent in 1990). Nonetheless, one study found the attendance rate has increased more for those with difficulties than for those without (Nat'l Inst. for Literacy, 2002b). This study also found those with learning difficulties were more likely to graduate from vocational and related programs, the type of training frequently offered at Job Corps centers and correctional facilities. Therefore, the programs we offer these students may be a good match for their abilities and preferences. Researchers also revealed higher unemployment but marked improvement with occupational opportunities over time among those with learning impediments (Corley & Taymans, 2002).

Success as adults relies on maximizing strengths and acquiring strategies for accommodating or improving difficulties. In addition, developing self-determination plays a crucial role. Instructors can help guide students to self-determination by assisting in the acquisition of the following items (Corley & Taymans, 2002):

- Self-knowledge – understanding their learning difficulties and how they affect daily life; knowledge of accommodations available to bypass difficulties.
- Ability to plan – conscious goal orientation; making choices that match interests and strengths while avoiding areas of weakness.
- Capacity to act on the basis of self-knowledge and planning – being proactive.
- Ability to learn from experience – evaluating successes and failures with regard to abilities and difficulties.
- Awareness of the environment – being in situations that nurture and enhance abilities.

Having a desire to succeed, reframing past experiences in more positive and productive manners, and forming personal support networks tend to improve the chances of success for these individuals (Lindop, 2002).

Assessments

Attitudes toward assessment of learning differences are polemic. Some believe that assessing students' difficulties may only increase their sense of inadequacy and discourage further effort and risk-taking; however, many believe a diagnosis has just the opposite effect. Understanding the reasons behind past school failure can empower individuals and encourage them to keep trying, armed with new awareness. "Every student has to become familiar with his or her strengths and weaknesses. . . If you don't understand yourself, it will be almost impossible to help yourself!" (Levine, 1990, p.231).

Uncovering where a struggling student's particular impediment occurs is helpful in forming a plan of action. Kerka (1998) stated, "Appropriate assessment is the starting point for all other strategies and techniques" (p.2). Levine (2002) also supports this approach, stressing that the first step in assisting struggling students is identifying their neurodevelopmental profiles and determining their current levels of academic skills and knowledge. Both the teacher and the student need to grasp the nature of the weakness in order to appreciate abilities, set realistic goals, and make curricular plans. Assisting students in understanding their strengths and weaknesses and celebrating the differences among them can help develop self-confidence, mutual respect, and a sense of community and support in the classroom (Stainback, Stainback, & Jackson, 1992). Additionally, teachers with an awareness of the neurodevelopmental functions involved in learning will be better able to understand and assist struggling students.

> *Many students express sincere desires to participate in classes where teachers recognize students' strengths, needs, and learning styles.*
>
> -Kronberg & York-Barr, 1998, p.5

The following list provides possible signs of learning difficulties (U.S. Dept. of Ed., 2002; Teaching LD, 2002; Lowry, 1990). The presence of several can indicate a need to pursue further assessment for a student who:

- Struggles with following directions;
- Often reverses letters in writing, for example *felt* for *left*;
- Has trouble learning spelling strategies, such as using information from prefixes, suffixes, and root words;
- Avoids reading aloud;
- Avoids writing compositions;
- Has trouble with handwriting, prefers print over script, or avoids writing altogether;
- Grips a pencil awkwardly;
- Has trouble recalling facts;

- Has difficulty understanding what he or she reads;
- Struggles with expressing thoughts verbally or in writing;
- Has difficulty staying organized or remembering and meeting deadlines;
- Confuses up and down and left and right;
- Misinterprets subtleties in language, tone of voice, or social situations; or
- Has trouble getting along with peers.

After observing several of these conditions, a teacher who suspects a learning impediment can document the circumstances, including the types of tasks, the environment, and the method of instruction. This information is valuable in determining where the difficulty is occurring and the best method for overcoming it. Teachers need to be wary of assessment tools, though, as many (including IQ tests) harbor built-in biases and ignore certain areas of development in which students may be strong. Vital to the assessment process is the diagnosis of a student's strengths and abilities (Levine, 2002). These attributes may well be the lever that helps students succeed in classrooms where they have previously met only frustration.

Learning Styles

Many researchers and practitioners have written and studied about the learning style concept – that everyone learns mainly through either visual, auditory, or kinesthetic means. Arguments exist both for and against the prevalence of various learning styles and the promotion of focused instruction on the style of a particular student. Many believe that using different learning modalities to accommodate learning style preferences is beneficial. This approach can lead to improved attitudes toward learning and a higher likelihood that students understand the material and link it to previously acquired knowledge. Students that discover and understand their learning style "can and do often apply such information with great success and enthusiasm" (Thomson & Mascazine, 1997). Data also suggests that students' achievement test scores increase 55 to 59 percent when teachers instruct them using their preferred sensory and perceptual modes (Barkley & Bianco, 2002).

On the other hand, others question the learning style concept. Jennifer Cromley (2000) proposes that research does not substantiate defining visual, auditory, and kinesthetic as learning styles. Research has also failed to find reliable tests that diagnose a style or effective teaching methods for any style. The *Bridges to Practice* guidebook states that little research supports the effectiveness of instruction geared towards specific learning styles (Cromley, 2000). Instead, studies show that most people learn better when using several senses, even if they prefer one sense. Both seeing and hearing the same information will create different memory traces and increase the number of retrieval cues, facilitating recall. Learning styles tests usually assess how individuals *prefer* to learn, not how they actually learn best. In this light, strictly focusing on only the preferred style can actually impede the learning process.

Despite this refutation of the learning style concept, Cromley (2000) and others do recognize the value in "asking students about their own learning, teaching a lesson in many ways, and teaching students how to learn" (p.200). Asking students about their learning helps assess their understanding. Teaching a lesson in many ways increases the likelihood of understanding since students must use many senses to participate in the instruction. Similarly, applying multiple senses improves retrieval of new knowledge. Solely relying on lecture and discussion, or any other teaching style, can limit the efficacy of instruction because it uses only one method to transfer knowledge. Adding a kinesthetic element to a lesson may be particularly helpful since most students have already heard or seen the material. Using manipulatives or other hands-on activities involve touch and often make concepts more tangible.

Many teachers have been instructing in a variety of styles for a long time, assuming their students had varied learning styles. In reality, multiple methods may benefit all students. "It will, in many instances, be very difficult in a single lesson to include instructional approaches that appeal to every student's learning style, needs and interests. However, it is possible and desirable to design within a unit of instruction a variety of instructional approaches that complement each student's strengths, interests, and abilities" (Kronberg & York-Barr, 1998, p.24). By weaving together a variety of curricular and instructional approaches across a topic, instructors likely enhance the understanding and recall of all students.

Elements of Instruction

No one instructional method will work for all students who learn differently, but research has proven effective several strategies in teaching these students. Many are built upon the concept of individualizing instruction, as the traditional teaching methods have not worked well for these students in the past and are not likely to lead to optimum results. Correctional education research suggests "ways to increase student success: intensify direct instruction, offer one-on-one assistance, use a variety of instructional strategies, [and] design lessons that emphasize cognitive skills development" (White, 2002, p.177). Similar methods are also likely to work well for Job Corps students. In addition, a drill-repetition-practice-review component is an important variable in predicting effectiveness of instruction (Swanson, 1999). The purpose of education should no longer be simply to enable the students to pass tests, but to also arm them with the critical thinking, problem-solving, and oral skills required in today's world (Beder & Medina, 2001).

Differentiated teaching is "the proactive use of a wide repertoire of curricular and instructional approaches which are consistently used with students with diverse abilities, needs, interest, and background experiences to support their learning" (Kronberg & York-Barr, 1998). Because the average range of instructional levels among students in general education classrooms is 5.4 grade equivalents and is likely to be greater in Job Corps and correctional classrooms, using differentiated teaching is important.

Below are various components of instruction and methods of delivery that can help teachers incorporate differentiated teaching. The method(s) chosen by teachers should be based upon their personal strengths and the characteristics of their students. The techniques discussed below need not be used in isolation, but can be integrated with other elements to develop a teaching style that reaches all students.

Strategy Instruction

Students with difficulty learning can greatly benefit from the explicit teaching of various learning strategies. Strategy instruction uses a top-down approach to emphasize rules and procedures applicable across settings. Teaching transferable strategies including listening, paraphrasing, underlining, highlighting, note taking, paragraph organizing, and test taking is helpful (Lowry, 1990). Clearly outlining memory techniques like linking and mnemonics is also beneficial. Teachers can explicitly teach the components of higher thinking and inform students prior to an activity that will use such skills. Instructors and students need to also discuss when these strategies will be useful and how transferable they are. Teacher modeling of processes, reminders to use certain strategies, step-by-step prompts, and process-oriented questions enhance strategy instruction (Swanson, 1999). Many of these students have never before been taught how to learn, and this instruction adds skills necessary for success.

Direct Instruction

Direct instruction uses a bottom-up approach of teaching subskills to master basic skills. This technique is not simply a lecture method in which students are passive learners, but instead actively involves students through frequent responding and participative activities. A positive, established student-teacher relationship enhances the effectiveness of this technique. Direct instruction segments a task into small parts, supplies repeated feedback, provides diagrammatic or pictorial presentations, uses teacher modeling of skills, allows students to learn at their optimal pace, uses simple verbiage, and has the teacher ask skill-related questions (Swanson, 1999). Table I summarizes the main points of the direct instruction model.

With direct instruction, the goals and objectives of the lesson should be clearly stated at the beginning of class (Hammeken, 1995), tying the material to everyday life. Material presented in an organized manner with simple vocabulary assists the note-taking process, as does providing a written outline of the subject's main topics with room to take notes. Explicitly stating, "Please remember this," "This is important," and similar phrases can help students distinguish the most important lesson points. Comparing and discussing notes between students will help ensure all have the relevant details. Varying the difficulty of questions during discussions allows all students to participate.

Combining direct instruction with strategy instruction has proven effective in teaching students who learn differently, more so than either method alone or an alternative method (Corley & Taymans, 2002).

Table I: Direct Instruction Model

Task	Explanation
Provide objectives, establish expectations, and introduce the skill.	Activate background knowledge, involve all students, relate to real life, label the learning, and set goals.
Introduce and model the skill.	Teacher performs the skill (students use eyes and ears). Teacher performs the skill, students help (students use eyes, ears, and voices). Students perform the skill, teacher helps (students use eyes, ears, voices, and pencils). Students perform the skill (students use pencils).
Use guided practice with feedback.	Students use their new skills under the teacher's supervision. Can use peer tutoring or cooperative learning.
Close the lesson.	Students tell someone what they have learned, show what they have learned, and practice once more.
Use independent practice and generalization.	Students practice independently, doing a problem everyday. Discuss how the skill can be used in other settings.

Source: Adapted from Lindop, 2002.

Contextual Teaching

The traditional model of educating students using basic skills segmented into discrete units with little direct application to practical life and minimal student interaction and involvement may not be the most effective method of teaching students in today's classrooms (Peterson, LeRoy, Field, & Wood, 1992). Instead, applying new information and skills to a realistic context may prove more productive. "Learning for all students involves determining what the learning means and how it fits into their understanding and experience. Students must be able to make sense of what is being taught if they are going to learn it well enough to be able to use it without the assistance of a teacher" (Ferguson & Jeanchild, 1992, p.163). Instructors can apply skills learned in math, science, language, and other areas to everyday occurrences in the students' lives. This helps students who have struggled with school in the past connect learning to home and community. Once the practical applications are understood, the theory behind them (the abstract concepts) may be more easily grasped.

Integrating Material

Students need to integrate new material, or build on prior knowledge, in order to understand and easily remember new information. Teachers can enhance this process by explicitly linking new information to that previously learned. "Research has shown that coordinating the various components of instruction so that concepts are clearly and unambiguously communicated and then later combined has a positive effect on the learning of students with disabilities" (Grossen, Davis, Caros, & Billups, 2000, p.33). Visually connecting previously learned and new information through graphic organizers like concept maps or trees can be especially effective (Dye, 2000).

> *Information that fits into a [student's] existing schema is more easily understood, learned, and retained than information that does not fit into an existing schema.*
>
> -Robert Slavin, in Dye, 2000, p.1

Group Instruction

Heterogeneous group instruction can be useful for teaching basic concepts, problem solving, and conceptual applications (Ferguson & Jeanchild, 1992). This method uses students' differences to enhance individual learning. Mixing students according to a variety of characteristics including gender, race, age, and communication and performance abilities helps ensure an effective group.

Organizing activities to maximize team interdependence also enhances the learning opportunity. Instructors can arrange materials and information in such a way that group members rely on input from one another and work together toward a shared goal. Assigning roles and rotating them can accomplish this. Rewarding both individual and group achievement and teaching students how to evaluate their learning is important in these activities. At least one group should reflect stable membership, but value also exists in short-term groups (Krongberg & York-Barr, 1998). Researchers suggest that cooperative learning activities should occupy a minimum of 60 percent of classroom instruction (Ferguson & Jeanchild, 1992). Group activities not only enhance learning, but also promote interpersonal skills necessary in other areas of students' lives.

> *Students learn most effectively when their education is individualized and they have opportunities to learn in a heterogeneous group of learners.*
>
> -Peterson, et al., p.217

Group Discussions

Class discussions encourage critical thinking in classrooms with students of varying ability and education. These discussions also "promote articulate speech and respectful, active listening" (Am. Ed. Research Assoc., 2002, p.8). Participation in such discussions encourages students to organize their thoughts and clearly present their ideas. They also learn how to think critically about others' ideas and that alternative points of view always exist.

To have a productive discussion, instructors must plan an interesting topic and introduction. Thought-provoking hypothetical questions or questions asking the students to agree or disagree with a statement often work well. These discussions can be entertaining for the students as they actively support their points of view and debate with peers.

Review

Planning valuable review helps students master material. Effective review is sufficient, distributed over time, varied, and cumulative. Those who learn differently should apply previously taught knowledge to facilitate greater understanding, longer retention, and appropriate application (Burke, Hagan, & Grossen, 1998). Initially, review should occur frequently, with increasing periods between reviews (Grossen, et al., 2000). Cumulative review helps prevent future confusion when students meet similar facts, concepts, principles, and strategies that follow different procedures, such as adding and multiplying fractions. Review can be especially vital in open-entry, open-exit classes since students will constantly be called upon to recall and use information in which they missed instruction.

Scaffolding

Scaffolded instruction uses what the student already knows to determine the next step for instruction (Corley & Taymans, 2002). Teachers model the processes and guide students as they practice. Gradually less and less support is necessary as students approach independent performance. Peers can also

provide personal guidance, assistance, and support to students who learn differently (Burke, et al., 1998). This method acts as a bridge between teacher and student-centered learning (Grossen, et al., 2000).

Self-Paced Learning

Student readiness is critical to successful self-paced learning. Some students who learn differently may not yet have the self-knowledge and determination critical to self-directed education (Corley & Taymans, 2002). As these students are unlikely to benefit from such a method, instructors should more heavily rely on other techniques. In addition, self-direction should only be used when instructors have the time required to attend to individual needs. Beder and Medina (2001) found, "In classes in which individualized instruction was used to address mixed skill levels, it was often difficult for teachers to help learners when needed. When this help was not provided, learning became stalled" (p.14). However, for students who are ready and in the right environment, self-paced educational programs can lead more easily to independent learning (McKee & Clements, 2000). The instructor in such environments becomes a monitor, motivator, evaluator, and reinforcer.

Computer-Based Learning

This educational method easily allows for self-pacing, drill and practice, review, and frequent feedback and reinforcement that can be highly effective for students who learn differently (McKee & Clements, 2000). Though computer-assisted instruction may hold great promise for teaching those with difficulty learning, research has been inconclusive thus far (Batchelder & Rachal, 2000). Some believe that many studies conducted on this method have been methodologically flawed. Batchelder & Rachal (2000) undertook a study of computer-assisted instruction in a prison setting to address the methodological problems. The authors determined that this type of instruction is neither inferior nor superior to more traditional methods and is effective only if teacher enthusiasm and support are present. A separate literature review suggested that instructional methods may be more important than the medium of instruction (Grossen, et al., 2000).

The specific computer program used also greatly affects the outcome. Programs that simply present a concept and then ask a student to solve complex problems will likely be ineffective for students who learn differently. These programs can actually do more harm than good, so instructors need to carefully review programs before classroom implementation and provide the necessary support and motivation to make them successful.

Teaching Materials

Diagrams, drawings, visual demonstrations, stories, rhymes, and mnemonics or other memory devices can help students understand and remember abstract concepts or other important content (Am. Ed. Research Assoc., 2002). Generally, the instructor introduces the material to be learned, then presents the device and ties it to the material. The teacher can use the device over the next few days to easily review or reinforce the information learned. Visual or graphic organizers, including concept maps, Venn diagrams, semantic webs, and genealogical trees, assist students in spatially organizing information to see relationships and linkages to previously learned material (Dye, 2000).

Using colored chalk or markers when teaching also enhances learning (Hammeken, 1995). Instructors can use color-coding when teaching place value in math or teaching parts of speech. Manipulatives aid some students' understanding and retention in math instruction. Rulebooks kept by the students for different subjects help them be more independent. Students can easily reference grammar, math, or other guiding rules, answering many questions without relying on the instructor or peers. Rulebooks can also include terminology and diagrams.

Preteaching Strategies

Many students who learn differently experience success if they are somewhat familiar with material before it is presented in class (Hammeken, 1995). Providing in advance a weekly spelling list and/or a list of words in boldface type found in the text allows students to familiarize themselves before they must use them in class. Highlighting important information in the student's textbook or color-coding the textbook can also help. Simply providing an outline of main ideas and vocabulary words for each unit also serves this function.

Giving Directions

Teachers can use several strategies in giving directions to increase the achievement of students with difficulty learning. Some students struggle with copying information from the board. This can prevent them from completing assignments in full merely because they do not copy directions or components completely. Providing these students with a photocopy of the material may greatly reduce frustration and increase achievement (Wood, 2002). This can also help students who have trouble remembering multiple-step oral directions.

When providing either oral or written directions, eliminate irrelevant information to keep them as concise and simple as possible (Hammeken, 1995). Providing visual demonstrations along with verbal explanations whenever possible will also minimize confusion. Instructors providing only one or two steps at a time assist students who have trouble with sequencing and memory. Additionally, numbering the steps in written directions and giving them in sequential order helps.

Assignments

Instructors always need to have in mind the purpose of an assignment. While a written response is usually required to verify students' understanding of a concept, alternative formats may be appropriate for some still strengthening their writing (Hammeken, 1995). Allowing students to illustrate or respond verbally on tape may serve the same purpose as the

written assignment (verifying understanding), without requiring them to struggle over writing. Having students highlight, underline, or fill in the blank on a photocopy of the material or in a consumable text rather than copying entire sentences or math problems helps some focus on the important material without getting frustrated. Students should be writing everyday, but accomplishing this through journal entries or other less-structured activities may produce less aggravation for struggling students than formal assignments.

For assignments in which the format can not be altered or the purpose would not be met (e.g. learning to write), allowing extra time for completion, dividing the assignment in half, or allowing students to complete segments over a period of several days make it more achievable for them. Working in cooperative groups to complete an assignment may also provide the right assistance. Additionally, the use of a word processor or a calculator can alleviate some stress.

Testing and Assessments

As testing and grading can be particularly painful for students who learn differently, instructors need to be especially aware of strategies that improve their chances of success. Evaluations should test only the curriculum area and not penalize students for errors related to their learning difficulties. Instructors can also limit the number of concepts on tests whenever possible. All directions to tests should be both written and given orally. Assessments should test the recognition of facts (e.g., multiple choice and matching questions) and not factual recall (e.g., fill-in-the-blank questions). In addition, tests should not include trick questions. Where possible and appropriate, testing orally can demonstrate content mastery for students who struggle with writing.

Some of the greatest learning may occur soon after a test or assignment is returned (Levine, 1990). Teachers can encourage students to review what worked and what did not to improve future performance.

Peer Tutoring

The benefits of peer tutoring are significant and widespread. Tutoring enhances the understanding, social skills, and self-esteem of the student being tutored. Additionally, tutoring augments the self-esteem of the tutor, promotes deeper understanding of the material being taught, and requires higher-level thinking and effective communication skills. If peer tutoring is used, instructors can have strategies for recruiting, training, supervising, and evaluating tutors, further benefiting the tutors. Students struggling in one area may be able to assist peers in another area, thus encouraging their sense of worth and reducing the exclusion some tutored students feel.

Teaching Those with Reading Difficulties

Many students who learn differently struggle with reading. For these students to succeed in school, instructors must provide alternate ways of exposing them to the material than just individual silent reading (Hammeken, 1995). The different methods can serve as scaffolding to students until they have strengthened their skills enough to capture the important material through reading. Instructors can read text aloud to the class or a small group while students follow along, or students can read aloud in small groups and either read or pass when their turn comes. Providing students with outlines of the reading material or a list of discussion questions before reading helps them focus on the most important material. Taping the entire lesson, taping alternative pages of the textbook and allowing the students to read one page and follow along on the next, or paraphrasing the material on tape can also help struggling readers.

Some students have trouble with visual tracking while reading. Giving oral clues as to where you are when reading aloud can help. Cutting a window in an index card so students see only one line or a few lines at a time can also facilitate focus (Hammeken, 1995).

> *The benefits to students receiving instruction from peers are well documented and include significant academic gains, the development of positive social interaction skills with another student, and heightened self-esteem.*
>
> -Villa & Thousand, 1992, p.122

Many of the students in Job Corps and correctional classrooms were not read to as children. These students can still benefit from an instructor reading aloud to them (Am. Ed. Research Assoc., 2002). To be effective, teachers can pick text that is no more than two years above the average independent reading level of the class and select material from different genres, including current events, poetry, humorous passages, and short sections of a longer book.

Elements of Instruction, Concluded

Table II summarizes the main instructional approaches that have worked effectively with students who learn differently.

TABLE II: EFFECTIVE INSTRUCTIONAL PRINCIPLES

PRINCIPLE	DESCRIPTION
Teach important skills.	Include students in deciding what is important to learn and identify functional skills.
Teach less better.	When you teach fewer skills, students can have enough practice to master them.
Teach explicitly.	Clearly identify what is being taught rather than using discovery techniques.
Teach contextually.	Teach skills that can be practiced and applied to real-life situations.
Explain what is to be learned and why it is important.	Explaining purpose and relevance can increase motivation.
Check the old before teaching the new.	Many individuals have difficulty retaining what they have previously learned. Include practice exercises of prior material to check on retention and allow for reinforcement.
Model what is to be learned.	A clear demonstration helps students see the important components of a skill or strategy.
Use supported practice.	Those who learn differently need guided practice before they are asked to apply a skill independently.
Use controlled materials.	New learning should be applied in easy materials with the task difficulty gradually increased.
Provide extended practice.	Individuals with learning difficulties often struggle with retaining new information or skills. Practicing to the point of automacity helps students preserve information.
Require frequent responses.	Active and frequent questioning maintains students' attention and involvement.
Provide corrective feedback.	Specific and immediate positive and corrective feedback is a powerful force in guiding the learning process.
Promote generalization.	Students who learn differently often struggle with applying new learning to situations outside the classroom. Contextualizing the learning is important in making it functional.
Be prepared.	Learners with difficulties benefit from well-organized and explicit instruction, which takes planning.
Use accommodations only when necessary.	While reasonable accommodations are appropriate under some circumstances, the right instruction must be provided to benefit fully and their use should not make students dependent on others.
Use caution when selecting instructional techniques and programs.	Not all products and approaches that claim to be effective with students who learn differently are empirically proven. Be cautious when choosing what materials to use.

Source: Adapted from Hughes, 1998 in Corley & Taymans, 2002.

The Classroom Environment

The classroom environment has great effect on the success of students who learn differently. Teachers, therefore, need to foster the appropriate environment in which students are most likely to experience success.

> *Simply providing effective instruction in key deficit areas is a necessity, although it is apparently insufficient to facilitate continuing success. Students with problem behaviors require effetive instruction, supportive/encouraging environments, and continuous feedback on an ongoing basis.*
>
> -U.S. Dept. of Ed., 2001, p.I-37

To promote achievement of students with learning difficulties, meta-analyses have identified environments in which expectations and how to meet them are clear, success is encouraged and facilitated, and feedback for both positive and negative behavior is consistently provided (U.S. Dept. of Ed., 2001). Strict, hierarchical classrooms are not as conducive to learning as more relaxed, flexible, collaborative, supportive classrooms. Teachers of diverse learners are also more successful when they have high expectations for student achievement and behavior and believe they are capable of teaching their set of students (Kronberg & York-Barr, 1998). Researchers found four common themes across ten exemplary classrooms: 1) Students assisted one another, 2) problems were solved through discussion and negotiation, 3) students provided feedback and praise to one another, and 4) learning about diversity and self-esteem was relevant across all subject areas (Kronberg & York-Barr, 1998).

> *In order to be effective with students having diverse needs, abilities, interests, and backgrounds teachers must align their practices and beliefs with the needs of their students, hold high expectations for the ability of all students to learn, and create caring classroom communities that nurture diversity.*
>
> -Kronberg & York-Barr, 1998, p.4

Research shows the following promote effective learning (Peterson, et al., 1992):

- Individualized education and the opportunity to learn in a heterogeneous group of learners;
- An atmosphere of support, cooperation, and encouragement in which all students are welcome rather than an atmosphere of competition and exclusion;
- Peer support;
- The opportunity for students to learn and use skills in meaningful activities related to the community and home life; and
- Student involvement in active learning.

Encouraging these elements of a classroom environment can facilitate the success of students who learn differently.

A Sense of Community

Creating a sense of community in the classroom that encourages students to take risks is important for facilitating learning and social engagement while decreasing dropout rates. Vital to community is an environment of safety, trust, and peer acceptance (Beder & Medina, 2001; Kronberg & York-Barr, 1998). Including students in making educational and classroom decisions helps foster a sense of community, as does active student participation and clearly communicating high expectations. Arranging seating in pairs or groups facilitates cooperative learning and the establishment of peer networks. This culture is difficult to achieve in open-entry, open-exit classes where turnover is high, but the results are well worth the effort. To achieve a sense of belonging with new students, the class can participate in formal introductions and activities.

Classroom safety is imperative to learning. Teachers may need to develop formal teaching strategies to help students learn that the classroom is safe and the teacher can be trusted, cultivating a critical student-teacher alliance (Hitzing, 1992). Public humiliation should never occur within the classroom. When students feel safe and free to express values, attitudes, and opinions, open discussions can take place wherein oral literacy skills are enhanced. Students also come to view mistakes as a natural part of the learning process and learn that problems can be solved by working together. A sense of safety also eliminates the need for students to invest energy in worrying about their well-being and personal property (Ford, Davern, & Schnorr, 1992).

> *True communities are characterized by a spirit of cooperation.*
>
> -Ford, Davern, & Schnorr, 1992, p.57

Cooperation is imperative in a community. Though structuring activities around competition is extremely tempting for teachers, a competitive environment is not conducive to building a sense of community. Instead, group challenges and cooperative games help students learn that they can achieve without measuring themselves against others. In addition, cooperation promotes negotiation, improved interpersonal skills, and interdependence, all necessary in the workplace.

Competitive situations can cause great anxiety for struggling students (Lavoie, 2002a). Students with learning difficulties are likely to suffer from the easy comparisons made to other students and the exclusion that often results. Incorporating students who have fallen behind in class is more difficult in com-

petitive activities, reducing the amount of learning possible for them. Furthermore, competition can undermine student motivation as failure experiences diminish this incentive (McKee & Clements, 2000). Cooperative situations are much more favorable to the achievement of students with difficulty learning. The class focus shifts to the development of skills instead of winning or losing.

Organization

Many students who learn differently struggle with organization for a variety of reasons. The orderliness of the classroom can help minimize this learning barrier (Hammeken, 1995; Lowry, 1990). Clear student and teacher roles and responsibilities promote interdependence while reducing the traditional hierarchy between the groups (Kronberg & York-Barr, 1998). Writing a daily schedule on the board and following it as closely as possible will help some students, as will having only one place in the classroom for handing in assignments. Developing a classroom routine and following it also assists these students, who need structure and predictability. Teachers can make any changes in the schedule, assignments, or tests orally and in writing. Allowing students several minutes to organize materials when switching subjects or activities helps ensure that students will not miss instruction because they are searching for materials. Providing students a packet of stick-on notes can also enhance their organization. They can write each assignment on a note and stick it on their desk or homework folder. When the assignment is complete, the student throws the note away. The use of color-coding by both the teacher and the students can also assist organization.

Attention and Distractibility

Because holding students' attention results in higher achievement, teaching techniques that involve students at the start of a lesson are important. Teachers can devise creative ways to capture students' attention and engage their minds the moment they enter the room. Actively involving students in the first three minutes of the lesson so they do more than passively listen promotes attention, as does planning lessons carefully and fully so interruptions are minimized (Am. Ed. Research Assoc., 2002).

Many students with learning differences struggle with attention and are easily distracted. This may be due to dysfunctions with their attention controls or because they do not understand the material being presented. Whatever the reason, teachers can help reduce distractions by paying attention to a few simple classroom elements (Schwarz & Terrill, 2000; Hammeken, 1995). A clean, uncluttered, quiet, and well-lit environment is important. Placing creative artwork at the back of the classroom and avoiding excessive materials eliminates visual distractions. Likewise, easily distracted students should sit away from doors, windows, or high traffic areas. Teachers can also set up signals between them and the students, like placing a finger on the side of their nose or touching a student on the shoulder. When students appear distracted, teachers can simply signal them to draw them back.

Promoting Learner Independence

Although many students with learning impediments will not be independent learners when they enter a Job Corps or correctional classroom, the environment should support the development of this characteristic. Most importantly, students need to have an active role in the establishment of educational plans and goals. Instructors can consistently communicate that the responsibility for learning lies with the student. At the appropriate point in the learners' progression, teachers need to shift from being an expert to being a facilitator of knowledge. "Some students have learned to see the teacher as the expert and will need guidance to learn how to listen to and trust their perceptions and ability to assess quality of their work" (Krongberg & York-Barr, 1998, p.12). Teaching students how they learn is also useful, as is encouraging them to keep track of their progress. Providing immediate and frequent feedback is necessary in this process so students are aware of the areas needing further clarification or practice. When learners are ready, teachers can ask them how they would complete a task or solve a problem before simply showing or telling them.

> *Teaching is not filling a bucket.*
> *It is lighting a fire.*
>
> -Wood, 2002

Intensity of Instruction

Research shows that students who learn differently require intense instruction for optimal achievement. Long-term memory works best when given sufficient time for consolidation (Levine, 2002). Switching from one subject to another throughout the school day prevents this from occurring. In light of this, block scheduling may be optimum. One study showed that inmates attending instructional programs full-time five days a week improved more than students attending community programs four hours a week (Taymans & Corley, 2001). Most Job Corps and correctional classes allow for intensity, optimizing student success.

Discipline, Rewards

Many students in Job Corps and correctional classrooms exhibit aggression and inappropriate behavior. As stated previously, properly addressing the learning needs of all students will eliminate much of this conduct. Helping learners set realistic goals and find the resources necessary to accomplish them replaces aggression with productive behavior. Despite this, it may still be necessary to develop with the students a discipline system that deals more with student responsibility than obedience.

In disciplining students, the instructor's goal should not be control but understanding. Discipline should be a communication process with the aim of getting students to see their behavior as others in the classroom do, for some believe that when students change the way they see things, their behavior will change accordingly (Am. Ed. Research Assoc., 2002). Remem

bering that a major source of motivation for appropriate behaviors is positive reinforcement for desired behaviors is important (McKee & Clements, 2000). Maintaining a positive ratio of reward to correction will help send the appropriate message to students.

Many students who learn differently rely more on external reinforcement than do others and need constant reassurance they are doing well (Hammeken, 1995). While long-term incentives like GED completion should not be ignored, students who learn differently are likely to need more to remain motivated each day (McKee & Clements, 2000). A reward system may fulfill this function. Students should be included in the development of the system, as things that motivate them may not be the same as what motivates teachers. Additionally, students are more likely to support and maintain a system they helped create.

A survey of students enrolled in correctional education programs found that students want teachers to praise them for their efforts (Traverse, 2000). They believe teachers should recognize/reward a student for doing good work and indicate that students can be motivated when offered incentives to learn. The use of progress plotters, point systems, performance contracts, and token economies has improved the motivation of students with learning difficulties (McKee & Clements, 2000). Where possible, grading based on a combination of a student's ability, effort, and achievement may help reward those who are struggling (Hammeken, 1995). Instructors can reward both individual and group achievements. Teachers can also build on students' strengths and help them recognize their successes, fostering intrinsic rewards (Lowry, 1990).

Accommodations

Many students with learning differences will experience great success in the classroom if a few minor accommodations are provided. Technological devices like a computer or calculator can reduce the strain on certain neurodevelopmental systems that overload some students. Alternative testing arrangements and extending time allowed for assignments may be appropriate. Writing in stages helps many students who struggle with memory. When doing this, students first audio tape their ideas and then write them. Proofreading occurs multiple times: once for paragraphing, then for sentence structure, again for capitalization and punctuation, and a fourth time for spelling. Students spread these stages over a few days instead of performing them all at once. Other simple accommodations include large print tests and texts, highlighting pens, outlines for taking notes, and taped books or instructions.

Students should continually work to strengthen their impediments, and their difficulties should never be an excuse for avoiding work. But accommodations at certain times may assist students in acquiring necessary knowledge. These accommodations are intended to help students work around their differences, thereby increasing their independence and self-reliance. Instructors must decide when to introduce, sustain, and withdraw accommodations to help students succeed without making them dependent on others.

Some students and teachers may perceive the allowance of accommodations as unfair, but the instructor must communicate that 'fair' means providing what each student needs, not the same thing for everyone; it will most likely not look identical for each student. When students cannot meet the requirements placed upon them due to learning impediments, apathy toward school and learning may result (Stainback, Stainback, & Moravec, 1992) and no teacher desires this. Teachers can require payback for accommodations made, allowing different rather than less work (Levine, 2002). If teachers cut in half students' math assignment because of related impediments, they can require that the students make a poster for the classroom or some other task instead using the students' strengths. Not only will this help make the classroom more 'fair,' but also may help students feel more capable.

Scotopic Sensitivity

Some students with reading, attention, and learning difficulties may be struggling with Scotopic Sensitivity Syndrome (SSS), a problem with how the nervous system encodes and decodes visual information (Irlen Institute, 2002). Individuals with this dysfunction see the printed page differently, although they may not realize they do. Progressive blurring, movement of print, shadowing and doubling of letters and words are symptoms of the syndrome. SSS can affect academic and work performance, behavior, attention, and concentration. Research has found that 74 percent of low scoring readers and 15 percent of high scoring readers have SSS.

Colored overlays or lenses help reduce or eliminate the perception difficulties associated with SSS. These overlays also help reduce headaches, migraines, and eyestrain associated with the syndrome. Students suspected of having this condition should be assessed by a trained educator or psychologist. In addition to those with SSS, colored overlays may also help students who have trouble reading high contrast white paper with black print. Nevertheless, while overlays help the clarity of print, students may still need assistance in learning *how* to read.

Self-Esteem

Students who learn differently often struggle with self-esteem. An individual's sense of worth is based upon self-assessment, which requires the ability to evaluate and compare. Because these two skills are "extraordinarily challenging" for students with special needs, these individuals are "often unable to accurately measure or assess their own self-esteem" (Lavoie, 2002b p.1). Additionally, many of these students have experienced repeated frustration that furthers the deterioration of their self-worth. These students need self-esteem and motivation before they will be able to participate in the rich educational opportunities offered them.

Students who learn differently often feel frustrated and unintelligent; those unable to overcome these feelings will feel hopeless and stop trying. To combat this, teachers and classrooms must foster self-esteem and motivation. No one can develop the self-esteem of another, but instructors can create an atmosphere in which students build confidence, thereby strengthening self-worth.

> *Most kids simply lack the insulation to handle repeated frustration and personal failure. Some simply surrender. Some become permanently anxious or depressed. Others act out, cause trouble, get themselves pregnant, or take drugs. Still others become transformed into conservative nonrisktakers, shutting down and decisively writing themselves off at an early age. Or else they keep criticizing and putting down whatever it is they can't succeed at.*
>
> -Levine, 2002, p.246

Many of the same elements of instruction and the classroom environment that promote understanding for students who learn differently also help improve self-esteem. These include flexibility, lack of competitiveness, segmenting assignments, and sincere belief in their abilities (Nat'l Inst. for Literacy, 1995). This is logical since students' achievement increases as their self-esteem improves, and their self-esteem improves as their achievement increases (Lavoie, 2002b). Additionally, to ward off despair, instructors should find something for which to sincerely praise each student (all students are talented in some area). Easy assignments and insincere praise do not boost self-esteem and can actually have the opposite effect, as students are aware when this is occurring (Cromley, 2000).

Self-esteem is increased when individuals are involved in activities they enjoy and at which they excel. Students having trouble in the classroom need to be involved in something they do well, whether painting, baseball, or dancing. Otherwise, they may experience chronic success deprivation (Levine, 1990). "When a student is experiencing academic stress and failure, art, music, mechanical pursuits, or sports may serve as venues in which he feels successful and can obtain longed-for positive recognition" (Levine, 2002, p.186). Some students are better creators than learners; for these, opportunities to be creative and brainstorm enhance self-esteem and motivation.

Instructors also need to emphasize that students' performance in school is not necessarily indicative of their future work performance. While they do need to continue to improve their areas of weakness and work to achieve in education, their struggles in the classroom will not automatically transfer to struggles in their career where they can specialize in an area using their strengths (Levine, 2002). Students also need to understand that everyone has one or more intellectual specialties. Some individuals are more well rounded (which works well in school), while others are more specialized. Both types of people are needed and valuable.

> *Expertise kindles intellectual self-esteem.*
>
> -Levine, 2002, p.323

Goal setting and achievement is important for both self-esteem and educational attainment. Goals must be both desirable and achievable in the eyes of the student or motivation may be undermined. Immediate positive feedback and encouragement to strive for success can motivate students to reach their goals (Hodges, et al., 1994). Instructors can set students up to succeed frequently and predictably by providing effective instruction and developing nurturing environments (U.S. Dept. of Ed., 2001). Dealing appropriately with failure should also be part of this process. Helping students recover and learn from disappointment will help minimize the impact of future failures on their self-esteem.

Students who learn differently need to be safe from public humiliation and any physical or verbal abuse. Absolutely no language of hate or violence should be allowed in classrooms. When students do not feel safe, a fear of failure consumes so much of their energy that little is left to fight through their learning difficulties (Nat'l Inst. for Literacy, 1994).

> *A student's enhanced insight into his or her learning disorders (and strengths) will engender hopefulness and ambition.*
>
> -Levine, 1990, p.xi

Awareness of one's learning difficulties also fosters self-esteem, as self-knowledge is the ultimate empowerment. When students understand their learning difficulties, they can value their strengths and the challenges they encounter in school. "To build self-esteem, a person has to know his or her strengths and interests, at the same time knowing what he or she has the most trouble with and what strategies help" (Smith, 1994, p.1).

Program Profiles

Learner Independence and Strategic Instruction in Support Class at South High School

(*Vallejo, Stevenson, & York-Barr, 1998*)

Support Class at South High School in Minneapolis, Minnesota, is designed for students with learning difficulties. The class is required for freshman receiving special education services and is optional thereafter. The class consists of one 50-minute period every school day. Approximately 15 to 20 students ranging

from freshman to seniors are in each period, and a special education case manager facilitates the class.

Teachers of Support Class try to minimize class dependence, emphasizing that students are responsible for their learning. Instructors maintain high expectations for each learner, which promotes achievement for those who learn differently. Students complete monitoring forms weekly to track their progress in other classes. Organization is stressed, with students required to keep a planning calendar. Supporting independent learning in this way increases the likelihood of success for these students both in school and out.

Strategy instruction is also a main objective of Support Class. Instructors directly teach and reteach specific learning strategies and reinforce when each approach is applicable. A new learning strategy, such as note taking and organization, is taught each trimester based on the most critical needs of the students. In addition, teachers generally or specifically equip individual students with other learning strategies as needs arise. To ensure students understand how to use these techniques, instructors prompt students with questions like, "What strategies do you already know that will help you with this assignment and how can you use that information?" (p.91). Instructors might also provide students with several learning strategies appropriate for a certain task, suggesting they select one.

Instructors teach and reinforce communication skills, social skills, positive peer relationships, and self-advocacy. Students are encouraged to set goals for their futures and plans for achieving those goals. Many elements of Support Class are those proven most effective with students who learn differently, maximizing its impact for participants.

Direct Instruction, Strategy Instruction, and Independent Learning at Morningside Academy

(Morningside Academy, 2002)

Morningside Academy of Seattle, Washington, is a private 1st through 9th grade laboratory school providing academic and social programs for both struggling and gifted students. Through its Public Schools Improvement Program, Morningside also trains elementary and middle school teachers to use its instructional methods. The academy uses a competency-based approach, seeking out innovative and proven materials, methods, and tools in research. Its Foundations program is designed for those falling behind in school. Instructors use "clearly defined rules and expectations for performance and productivity, explicit modeling of high performance skills, and a daily monitoring of performance" (p.3). A student earns daily points for meeting academic, learning skills, and behavior goals set by the teacher. Classroom charts track points earned.

Teachers use direct instruction to teach basic academic skills because "the explicitness and careful progression of Direct Instruction lessons assures that students develop flawless skills very quickly" (p.4). Distributed and cumulative practice then becomes the focus until skills are automatic. Strategic instruction is also used in the Foundations program. Reading, comparison, and inference strategies are taught, along with goal-setting, self-monitoring, self-management, organizational, and cooperative learning skills. Students move toward independent learning as they pace their training, determine points earned, choose how to distribute their time during a class period, and manage other areas of their education.

Students of the Foundations program gain an average of 2.5 grade levels per nine-month school year. They remain at Morningside Academy from one to four years before returning to mainstream schools. Those attending a six-week summer session usually gain a grade level in the skill area they study. Students participating in an adult literacy program implemented by Morningside typically gain two grades per month of instruction.

For three years in the 1980s, Morningside provided adult training through a grant under the Job Training Partnership Act. The YMCA Metro Center employed participants and Morningside provided education. Participants chose to concentrate skill development on reading, writing, or math. The program was a success, with average attendance of four out of five days and 90 percent of students gaining an average of two grades per month. Morningside has also translated its program to adult training with Chicago city colleges and Motorola in Phoenix.

Individual Instruction and Self-Esteem Development at Riverview School

(Riverview School, 2002)

An independent residential secondary program in Cape Cod, Massachusetts, Riverview School provides remedial and compensatory programming for youth with moderate special needs. The school enrolls 182 students aged 12 to 23. Many of the philosophies inherent in Riverview's programs are those of Dr. Rick Lavoie, the former president of the school. The goal of Riverview is similar to that of Job Corps – to provide students with the vocational, academic, and social skills necessary for success in the workplace.

Riverview meets its goal through educational and residential programming. With a 1:4 faculty/student ratio and a 1:8 maximum class size, individualized instruction is possible. Teachers emphasize high expectations, integrated material, and research-validated instructional approaches. Life skills, social skills, and self-esteem are developed through Riverview's residential component. Students are encouraged to participate in various sports regardless of skill level, which further improves self-esteem and interpersonal skills.

Fresh Start's Contextual Teaching, Student Involvement, and Self-Confidence

(Brown, Maxwell, DeJesus, Schiraldi, 2002)

Fresh Start of Baltimore, Maryland, is a nine-month educational and vocational program for male and female offenders aged 16 to 20 referred by the Department of Juvenile Justice.

Participants must commit to the program and can be removed if tardy within the first two weeks. The philosophy of Fresh Start is that students will develop essential self-esteem and employability skills when given the necessary opportunities and push to achieve. Students learn in a simulated workplace as much as possible, which contextualizes the information and skills and increases the likelihood of understanding and retention. Instructors also hold high expectations for the students, expecting them to perform the same types of tasks required in industry.

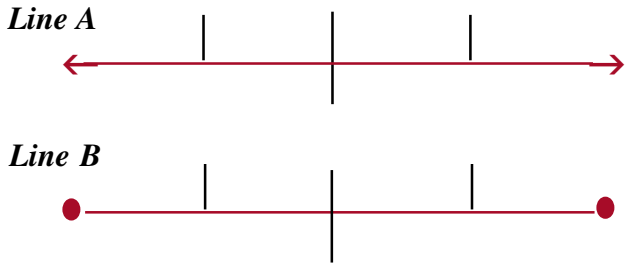
Students evaluate their progress daily using a point system and review their efforts with instructors. Students are directly accountable for the performance of a company they run in an eight-week module. Being both management and labor teaches them a variety of practical skills, teamwork, and creativity. They "discover their own potential and their own will to meet expectations and produce results" (p.23).

Fresh Start has produced promising outcomes. Attendance in 1999 reached 95 percent, and more than 75 percent of participants returned to school or were employed six months after completion. Math and language arts skills increased 1.2 and 1.8 grade levels, respectively. The reincarceration rate dropped below 10 percent. Once students realize they can succeed, they continue striving to do so.

Direct Instruction with Amanda Keller, Adult Education Instructor

(Lindop, 2002, pp.75-76)

One of the basic skills Amanda Keller teaches her adult students in Blount County, Tennessee, is sequencing. After discussing the concept, she introduces sequencing lines like those below to support the students' understanding:



She notes that Line A represents a section of time with an unseen past and future. Line B has a definite beginning and end and is appropriate for events that do not deal with the passage of time, like following directions or performing a math problem. The class then makes a list of words that describe the different points on the line, such as first, then, next, and last. Students practice sequencing by mapping activities they have done that day, making a number line, or putting words in alphabetical order. Keller also has students sequence the steps in an activity or recipe. She uses group work in this early stage, providing appropriate scaffolding. Each group works to put the events of a story in the correct order on a timeline, and then individual students perform this same activity without help. Students read the sequenced stories aloud, strengthening oral reading skills and detection of sequences. Keller also helps the class realize that words in a sentence and paragraphs in a story or essay are also sequenced.

When the students have mastered the skill, the class looks at examples of sequencing in various contexts. The class also explores different ways to show sequencing, such as timelines and numbering. Keller reviews sample GED questions and formats so students will be able to recognize applications of the sequencing skills.

Assessment and Individualized Instruction through the eXcelerate Program

(Mondeaux, 2002)

Based on the Structure of Intellect theory developed by J.P. Guilford and developed by Bridges LearningSystems, the eXcelerate program assesses and develops 26 cognitive abilities and 11 sensory integration, visual processing, and auditory processing skills that form the foundation of academic achievement. For underdeveloped areas, "eXcelerate provides an individualized prescriptive sequence of intellectual and perceptual activities that develop the student's competencies" (p.1).

Five Job Corps centers implemented the eXcelerate program in Fall 2000 as part of a pilot study. The results of the second cohort study (students participating between January 1, 2002 and August 1, 2002) appear promising for retention and academic performance. The 90-day retention rate of students who participated for at least 20 hours was over 91 percent, compared with 79 percent for those who did not participate or participated less than 20 hours. Participants also experienced higher gains in TABE scores, increasing an average of 37 scaled score points in reading and 49 scaled score points in math. In comparison, non-participants gained an average of 19 scaled score points in reading and 16 scaled score points in math.

Fostering Self-Esteem at the St. Joseph County Literacy Program

(Ashe, Pisegna, & Washington, 1994)

Adult students at the St. Joseph Literacy Program in South Bend, Indiana, often express anger and frustration over their learning difficulties, which then reinforces feelings of low self-esteem. To help students overcome these negative feelings, instructors educate them about different learning styles and specific learning difficulties. Teachers start with an extensive interviewing session, asking students about their past learning experiences and struggles. From this, instructors have a sense of achievement level and what teaching approaches may be most effective. Students often leave the session having realized that certain approaches to learning may work for them despite their past failures. Students can then redirect their anger and frustration and are open to alternative learning methods. Enthusiasm develops as students begin to view their learning difficulties as problems that can be solved.

The Literacy Program culture fosters student development. Participants are 'students' rather than 'clients' or 'learners', reinforcing that they are like their college peers studying for degrees. Instructors know each student's name and engage them in social interactions, reinforcing that each individual is worthy of attention and respect. Tutors also emphasize this message, working with individual students to encourage and facilitate learning. Accomplishments are celebrated in monthly progress reports, in newsletter and newspaper articles, at annual awards ceremonies, or with certificates. Those involved in the program believe that "when students see that others care about them, they are inclined to care more about themselves" (p.1), which can lead to greater learning and achievement.

Conclusion

Students who learn differently can achieve much in a supportive educational environment. When instructors are armed with strategies proven in the classroom and the resources necessary to implement them, success is likely. Not all students should be expected to achieve the same amount, but an instructor's recognition of differences, support, and positive attitude help each student reach his or her potential. When students are allowed to learn the way they learn best instead of being forced into a particular method of instruction, great things occur.

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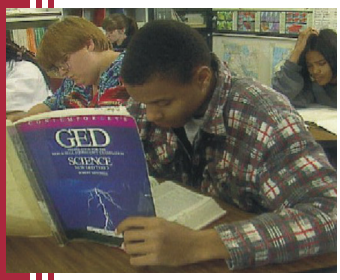
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