DOCUMENT RESUME

ED 382 598 SP 035 960

AUTHOR Dunn, Rita
TITLE Strategies for Educating Diverse Learners. Fastback 384.
INSTITUTION Phi Delta Kappa Educational Foundation, Bloomington, Ind.
REPORT NO ISBN-0-87367-384-0
PUB DATE 95
NOTE 34p.
AVAILABLE FROM Phi Delta Kappa, 408 N. Union, P.O. Box 789, Bloomington, IN 47402-0789.
PUB TYPE Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Classroom Environment; *Cognitive Style; *Educational Strategies; Elementary Education; Elementary School Students; Individual Differences; Student Characteristics; Student Needs; *Teaching Methods; *Underachievement
IDENTIFIERS *Diversity (Student)

ABSTRACT

Research supports the belief that most students can learn, but each child concentrates, processes, absorbs, and remembers new and difficult information in a different way. Teaching failing students in ways that complement their learning styles increases their standardized test scores in several academic areas. Instructional practices useful with underachieving students focus on: (1) the child's need to feel physically comfortable, including sound versus quiet, bright lights versus soft, formal seating versus informal seating, mobility versus passivity, and other factors; (2) the need to identify and share with children how each best remembers new and difficult information; (3) whether children learn best alone, in pairs, with peers in cooperative or competitive teams, or with authoritative or collegial adults; (4) the time of day during which an individual experiences energy highs; (5) use of a global or analytic cognitive processing style; (6) use of alternative instructional strategies to maintain interest and avoid boredom; (7) experimentation to find the most effective teaching methods for each youngster; (8) tutoring: (9) effective use of direct instruction; (10) use of computer instruction to reinforce tactual learning; (11) focus on multicultural education; and (12) focus on multiple intelligences. (Contains 10 references.) (JDD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

SP

384

FASTBACK®

U S DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

- ☐ This document has been reproduced as received from the person or organization originating it
- ☐ Minor changes have been made to improve reproduction quality
- • Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

ED 382 598

Strategies for Educating Diverse Learners

Rita Dunn

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

D. Burleson

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)"

SP035960

PHI DELTA KAPPA EDUCATIONAL FOUNDATION

BEST COPY AVAILABLE

RITA DUNN

Rita Dunn is a professor in the Division of Administrative and Instructional Leadership and director of the Center for the Study of Learning and Teaching Styles at St. John's University in New York. She is a member of the St. John's University Chapter of Phi Delta Kappa. In 1990 the chapter named her "Educator of the Year."

Dunn is the co-author, with her husband, Kenneth Dunn, of numerous books and articles. She received the Mensa Education and Research Foundation Award for Excellence in Research in 1992.

Photographs in this fastback were provided by the author courtesy of the Buffalo City School in Buffalo, New York.

Series Editor, Donovan R. Walling

Strategies for Educating Diverse Learners

by
Rita Dunn

Library of Congress Catalog Card Number 95-67078
ISBN 0-87367-384-0
Copyright © 1995 by the Phi Delta Kappa Educational Foundation
Bloomington, Indiana

This fastback is sponsored by the St. John's University Chapter of Phi Delta Kappa, which made a generous contribution toward publication costs.

Table of Contents

Introduction

It will not be possible to reverse school failure for underachievers until educators examine and change many current classroom practices. Too often, we acknowledge that children learn in different ways, but then we continue to begin each new lesson with the same approach for everyone in the class. And when some of the youngsters falter and fail, we continue to teach them in exactly the same way.

Certain classroom practices cause many children, particularly boys, real pain. One of these requires that students control their abundant energy and mobility needs and sit still, memorize facts, and answer questions posed by an authoritative adult while their peers and competitors listen. Another requires auditory memory skills from children who are not biologically able to remember most of what they hear during a 40- or 50-minute lecture or discussion. When children cannot answer their teachers' questions, they feel inadequate and embarrassed, and they lose confidence in themselves. Some stop liking their teachers and school.

Research supports the belief that most students can learn, but each child concentrates, processes, absorbs, and remembers new and difficult information in a different way. How children learn is called their learning style. Learning styles develop through interactions of biology and experience. In every family: a) mothers and fathers tend to have styles that are diametrically opposite; b) siblings learn differently from each other; c) offspring do not necessarily reflect either of their parents.'

styles; and d) culturally diverse students have as many within-group as between-group differences.

No learning style is better or worse than another. I have found that teaching failing students in ways that complemented their learning styles increased their standardized test scores in reading and word recognition, mathematics, science, social studies, and interdisciplinary areas. Teaching students through their learning styles also significantly improved students' school behaviors and attitudes toward learning in geographical locations as disparate as urban Buffalo, New York; suburban Hutchinson, Kansas, and Greensboro, North Carolina; and rural Lowman, Idaho, and Aberdeen, South Dakota.

Underachieving Students' Learning Styles

Gifted and talented students have learning styles that differ significantly from those of underachievers. Indeed, differences exist a) between the styles of the learning disabled and the gifted, b) between the learning disabled and average achievers, c) among different types of special education students, and d) among secondary students in vocational education, comprehensive high schools, and industrial arts.

Seven learning style traits significantly discriminate between high-risk students or dropouts and students who perform well in school. A majority of dropouts and underachievers need:

- frequent opportunities for mobility;
- choices;
- a variety of instructional resources, environments, and sociological groupings, rather than routines and patterns;
- to learn during late morning, afternoon, or evening hours, but not in the early morning;
- informal seating; not wooden, steel, or plastic chairs;
- low illumination (bright light contributes to their hyperactivity); and
- tactual/visual introductory resources reinforced by kinesthetic/visual resources, or introductory kinesthetic/visual resources reinforced by tactual/visual resources.

A tactual/visual learner uses an electroboard to correctly match sentences to the pictures they describe.

Underachievers tend to have poor auditory memory, although short auditory explanations may be used to reinforce new information. Underachieving visual learners tend to learn best through pictures, drawings, graphs, symbols, and cartoons, rather than print. Although they often want to do well in school, many children's inability to remember facts taught through lecture, discussion, or reading often contributes to their becoming underachievers in conventional schools.

Alternative Strategies for Diverse Learners

The following instructional practices are useful with underachieving students. Each practice is described in relation to the learning-style characteristics to which the practice responds. These practices have been drawn from research and published accounts of successful experiences with children in the lower third of the academic hierarchy.

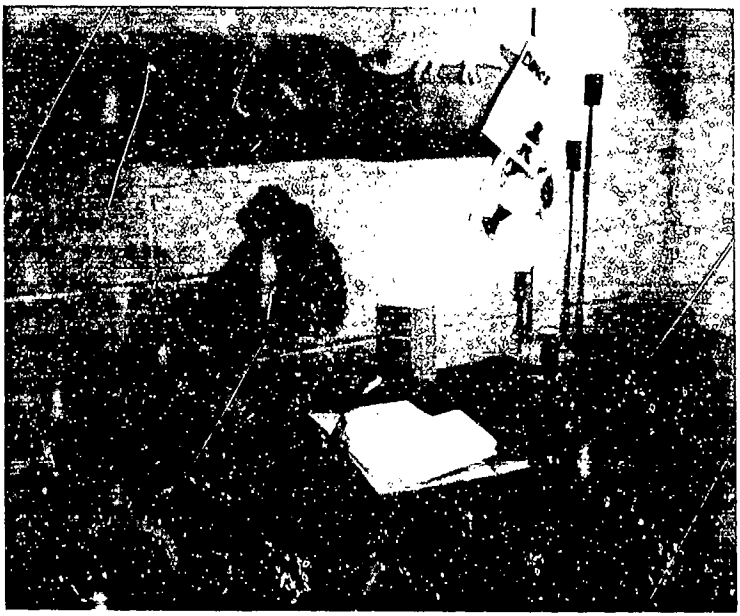
No single strategy will be effective with all or most underachievers. Although underachievers learn differently from high achievers and the gifted, they also learn differently from each other.

Strategy 1: Children need to feel physically comfortable if they are to concentrate on, process, internalize, and remember new and difficult information or skills. Individuals' comfort levels are determined by their reactions to their learning environment: sound versus quiet, bright lights versus soft illumination, warm versus cool, formal seating versus informal seating, mobility versus passivity, and intake (something to eat, chew, or drink) while learning.

Here are some ways to use this strategy:

1. Create several instructional centers with file cabinets, tables, or cardboard barriers to separate children who need to learn in quiet from those who need to engage in activities. Students who concentrate best with soft music (without lyrics) should use listening posts or portable tape players.
2. Encourage students to become aware of their personal need for either bright or low illumination by allowing them to experiment with differently lit classroom areas and in natural daylight.

3. Allow students to wear clothing that responds to their varying temperature requirements.
4. Permit students who require informal seating to bring and work on cushions (on their chairs or against a wall), carpet sections, or bean bags.
5. Use various library corners, learning centers, instructional stations, study carrels, media sections, or informal seating arrangements to permit students who require extensive mobility to move from place to place as they complete assignments.
6. Try allowing students to have healthful snacks (fruits or vegetables) or water to drink while they are learning.



Bright areas and softly lit areas have been created in this junior high school classroom.

It is important to establish, discuss, and post rules for acceptable behavior when the students work in their personal learning style. Following is a possible rules statement:

When we work with learning styles in this class,

- If your style interferes with anyone else's style, you lose the privilege of having your style accommodated.
- Every assignment must be completed.
- Your test grades must be better than ever before — or this experiment is not working and there is no reason to continue.
- You must sit like ladies and gentlemen — even when working on the floor — I also have to be able to see you.
- When I ask for your attention, everyone must stop and attend.

Strategy 2. Identify and share with youngsters how each best remembers new and difficult information. Regardless of cultural differences, less than 25% of us remember best the difficult things we hear or read. A few children do remember easily by hearing or seeing; they are auditory or visual learners. Most young children learn tactually (through manipulatives, with their hands) or kinesthetically (by experiencing or being engaged in whole-body activities).

When students are introduced to new and difficult academic material through their perceptual preferences, reinforced through any two different modalities, and then apply what they have been taught by creating instructional resources, they remember significantly more than they do through other strategies

To use this strategy:

1. Explain to the entire class that everyone can learn, but that each person needs to begin learning differently.
2. Develop a class chart that shows every student's strengths.
3. Show each student how to begin learning with his/her strengths and how to reinforce learning through two different modalities.
4. Emphasize that it does not matter how someone learns — only that each person does learn — and that all students will be mastering the identical content — but differently.

5. Show students how to develop their own tactual/visual flip charts, pie-a-holes, multi-part task cards, electroboards, learning circles, and wrap-ups and kinesthetic/visual floor games (like Twister) to teach themselves and each other (Dunn and Dunn 1992, 1993; Dunn, Dunn, and Perrin 1994). Then focus on the lesson objectives.
6. Direct the tactual learners to begin studying with the tactual/visual resources they created and to reinforce with either floor games or your lecture (which you should tape record when you introduce the topic to auditory learners).
7. Direct the kinesthetic learners to begin studying with a floor game and reinforce with either the tactual/visual resources or the taped lecture.
8. Direct the auditory learners to listen to your lecture first and then reinforce with either the tactual/visual or kinesthetic/visual resources.
9. Direct the visual learners to begin with the visual resources (books, transparencies, graphs, or films) and reinforce with the resource of their choice.

After relatively short introductory and reinforcement periods, convene the entire class to analyze, synthesize, compare, contrast, draw hypotheses from, or expand on the information to which each has been exposed.

Explain that when people use new information in a creative way, it becomes easier to remember. After students have been exposed to new information through their individual strengths and have been reinforced through two different modalities, require that they convert what they learned into a new instructional resource, such as a crossword puzzle, flip chart, floor game, story, play, poem, or other self-teaching item that they can use alone or with a classmate or two for additional reinforcement.

Strategy 3: Some students learn best alone, in pairs, with peers in either cooperative or competitive teams, or with either authoritative or

Students learn new vocabulary by physically matching word and definition cards in a kinesthetic floor game.

collegial adults. Some students can learn difficult information in two or more of these patterns, but at least 13% of students learn best by themselves. Learning-alone youngsters often are gifted, nonconforming, able to work at their own pace successfully, comfortable using media, or seemingly underachieving but potentially able students for whom unconventional instructional strategies, such as structured contract activity packages or multisensory instructional packages, encourage academic success (Dunn and Dunn 1992, 1993; Dunn, Dunn, and Perrin 1994). Children who previously failed and children labeled as average while learning with conventional teaching will perform significantly better when instruction complements their preferred learning style.

Depending on their age and achievement level, about 28% of students are peer-oriented. When they are grouped with achievement-motivated classmates, these students achieve higher test scores than

when they learn either alone or with a teacher. Another 28% prefer learning with an adult.

Here are some suggestions:

1. Any time you give an assignment (including homework), clearly say, "You may do this alone, in a pair, with me, or with two or three classmates." Providing structured choices enables students to recognize the social pattern in which each prefers to learn.
2. Identify the students' sociological choices with a valid, reliable assessment (inventory, questionnaire, or performance test backed up by your observations) and assign them to pairs or groups based on the results;
3. Use small-group strategies for peer-oriented students (Dunn and Dunn 1992, 1993; Dunn, Dunn, and Perrin 1994). Some of these include:
   - Team learning to: a) introduce new and difficult information, b) provide opportunities for students to engage in higher-level cognitive thinking with classmates, c) apply newly acquired knowledge through the development of an original instructional resource, and d) allow students to teach themselves and peers with the alternative resources that each develops.
   - Cooperative learning and an instructional game, such as circle of knowledge, for reinforcing previously taught information.
   - Role playing to permit an unstructured, spontaneous response to specific situations and to develop problem-solving and decision-making abilities. This technique also can be used with pantomime and dramatics to create "living history."
   - Simulations and case studies for providing structured imitations of real events or problems involving issues, interactions, points of view, attitudes, decisions, and solutions to problems.
   - Pair or small-group trips, interviews, community projects, visits, and other activity-oriented tasks also can be provided for peer-oriented, kinesthetic youngsters in need of mobility.

Cooperative learning also is recommended for peer- or pair-oriented students and for those who need variety. It is an option for all students; but it should not be mandated for learning new and difficult information for those who prefer to learn alone, with a teacher, or independently through media or technology. Cooperative learning research compares the results of groups working together after learning directly from their teacher. It has not compared achievement test scores of students whose identified learning styles indicate that they learn best alone, with peers, or with adults when those youngsters are in matched and mismatched treatments.

Direct instruction is recommended for teacher-oriented students and for those who need variety. It is an option for all students; but it should not be mandated for learning new and difficult information for those who prefer to learn alone, with peers, or independently through multimedia or technology.

Strategy 4: The time of day during which an individual experiences one or more energy highs varies. Most families have both "early birds" and "night owls." Only about 28% of elementary school youngsters are early birds, yet morning often is the time when basic subjects, such as reading, are taught and when standardized tests are administered.

The majority of elementary school children have energy highs in the late morning and early afternoon (between 10:30 and 2:30). Approximately 30% of junior high students are early-morning workers; the majority work best in late morning and early afternoon. At the high school level, early morning preference increases to 40%, but the majority still work best in late morning and early afternoon; about 13% of high school students work best in the evening.

Among adults, 55% are "morning people" and 28% work best in the evening, with many experiencing energy lows in the afternoon. Thus perhaps the worst mismatch occurs in high schools where a majority of teachers are at their best during first and second period, which is the worst time of day for a majority of students. A majority of stu-

dents are at their best during fifth period, when most teachers are tired and unable to exude energy or enthusiasm.

It is difficult to master new and difficult information easily at your worst time of day. Several experimental studies have revealed statistically higher test scores on a variety of different standardized tests for students taught at their preferred time of day. The Texas Department of Education's requirement for administering standardized tests in the morning was challenged by four school districts whose students had been achieving better at their preferred time of day. Because of the significantly increased achievement among those students scheduled for the statewide tests at their best time of day, the department thereafter allowed districts to apply for a variance from the requirement and now permits students to be tested in either morning or afternoon administrations of the tests.

To increase learning:

1. Group students for their most important subjects at their best time of day. Make them aware of why they may feel tired or bored at different times of the day.
2. Show students when and how to study and do homework through their learning style strengths.
3. Schedule students for standardized achievement testing based on their energy highs.
4. Make parents aware of your efforts so that they can encourage their children to study at their best time of day.

Strategy 5: How individuals concentrate on and remember new and difficult information is related to whether their cognitive processing style is global or analytic. Some students learn more easily when information is presented step-by-step in a sequential pattern that builds toward a conceptual understanding. Others learn more easily either when they understand the concept first and then concentrate on the details or when they are introduced to the information with a humorous story or anecdote related to their experiences and replete with exam-

ples and graphics. Both types of learners reason and learn equally well, but they do so through different strategies.

Try these techniques:

1. Describe both processing styles to students. Explain how people with each style function and that global and analytic styles are equally valuable. Emphasize the importance of learning new and difficult information in the style that best matches how each person learns most easily.
2. Begin every lesson with clearly stated objectives that are printed and illustrated on the chalkboard or on a chart. Analytics tend to want to know what they must learn before they begin concentrating and often cannot focus without an accompanying printed text, whereas globals seem to prefer learning through pictures, drawings, and symbols. Continue with a short anecdote or story directly related to the lesson's content to explain how the new knowledge can be used and how it relates to the youngsters' lives or interests. Intersperse your direct teaching with humor or cartoons directly related to what is being taught.

Once or twice during each lecture or discussion of a difficult topic, give 30- to 60-second breaks during which students may stand and tell a classmate one or more answers that were gleaned from the lesson to that point. Within that same break, the second student also tells the first what he or she learned. At the end of the lesson, review the most important objectives that were taught and discuss how the information might be useful to students. Next ask them to use the information in their homework by making a resource that provides answers to each of the lesson objectives. Students may create flip chart cards, a set of task cards, a floor game, a poem, a tape recording, a time line, a song, a crossword puzzle, a short play, and so forth. They may do this homework alone, in a pair, or in a small group of three or four — as they choose individually.

ERIC

In the beginning, translate the major objectives of each textbook chapter or other instructional materials into a short story or anecdote of a paragraph or two related to their experiences. In this way, both global and analytic processors will find the information that needs to be mastered to be interesting. Gradually, teach students how to read textbooks analytically and globally and to translate required information into the processing style with which they function best.

Global students remember holistically. Read about community events, interpret what might have caused a particular incident, discuss the complexities of staying out of trouble, theorize about how to help neighbors who may be having problems, and role play ways to avoid involvement in potentially dangerous situations. Relate these concepts to subject-matter requirements in specific disciplines. This integration of disciplines may trigger students' interest in learning more than if each of these subjects were taught separately. For concrete directions for how to teach the same content both globally and analytically, see Dunn and Dunn (1992, 1993) or Dunn, Dunn, and Perrin (1994).

Be certain to frame your questions so that they emphasize higher-order thinking skills, and allow sufficient wait time for students to respond. Both analytic and global students can respond to higher-order questions, but reflective thinkers require more time than impulsive thinkers because they process the questions sequentially, evaluatively, and comparatively. Impulsives, on the other hand, process intuitively and quickly.

Strategy 6: Although some children prefer routines and patterns, many (particularly underachievers) require alternative instructional strategies to maintain interest and avoid boredom.

Here are a few suggestions:

1. Alternate the methods of instruction for students who require variety.
2. Provide choices for nonconformists and independents who wish to think things through by themselves.

3. Teach students to create their own instructional resources so that they can develop alternative materials independently and use them to teach themselves and peer-oriented classmates.
4. Keep track of which youngsters achieve best with which strategies. Share that information with the class so that all become aware of their own and their classmates' strengths.

Strategy 7: There are many different ways to teach identical content, but merely providing choices will not be effective for all. Although certain students thrive with alternatives, others perform best with a single approach and feel insecure whenever an established routine or pattern is changed. It is important to experiment until you find the most effective method(s) for each youngster.

Teach students to make their own flip charts, pic-a-holes, electroboards, multi-part task cards, and other self-teaching resources. When they create their own instructional resources, most children take care of them, understand how to use them, and gradually become independent learners. They also develop the skills for teaching someone else how to make and use them. Expect that these manipulatives will be most effective with tactual learners — though students who need variety also will profit from them occasionally, and others may choose to use tactual resources for reinforcement.

Use two or three contract activity packages (CAP) with an entire class. These can be either designed by the teacher or purchased commercially. See for whom they are most effective. Teach those youngsters to develop their own, and permit those who dislike routine to learn through CAP frequently. CAP provide structure for those who need structure and choices for those who prefer alternatives. CAP can be used alone, in a pair, or with a small group. They also can be written to provide either global or analytic objectives, activities, resources, and test items. Anticipate that CAP will be most effective with either independent or nonconforming students.

Also use two or three programmed learning sequences (PLS) with an entire class. See for whom they are most effective, and teach those

Three students use a handmade map to practice locating important sites in their school district.

youngsters to develop their own. Permit students who enjoy patterned learning and routines to use PLS often. They provide structure for those who need it and permit youngsters to work alone, in a pair, or with a small group. PLS should begin with a story or anecdote and include many illustrations and built-in tactual activities for reinforcement. Anticipate that PLS will be most effective with students who need structure and enjoy repetition.

Multisensory Instructional Packages (MIP) offer at least four different activities to teach the same concept or skill through different senses: auditory, visual, tactual, and kinesthetic. A cassette tape guides users to the activity that best matches their perceptual preference. Reinforcement is provided by each of the three remaining activities. The MIP may be used alone, in a pair, in a small group, or near the teacher.

Sample CAP, PLS, and MIP for experimentation at any grade level are available in Dunn and Dunn (1992, 1993) and in Dunn, Dunn, and Perrin (1994).

Another strategy is to form a small group of peer-oriented students and clearly explain two or more strategies that they need to learn for reading a story, play, or book. For example, you might explain how to summarize information, determine the main idea, identify important information, etc. Read with the children and show them how to recognize one or more of the features discussed, then ask them to read aloud and let you know when they see similar features. Gradually, together, they will analyze the text and its meaning.

This last technique will work well with many analytic students who enjoy examining small parts of an entity. Global students may not enjoy this process before they become familiar with the story. After they are comfortable with the story content, they may be better able to tackle specific small tasks related to it.

Strategy 8: Tutoring can help underachievers when the tutors receive training involving a specified, structured curriculum. The training of tutors can increase some students' grades and some tutors' abilities. However, only group gains have been reported to date. It is not known whether peer-oriented students or students in need of structure perform better with a tutor than do others. On the other hand, tutoring is a viable strategy for some students and should be available to those youngsters who are willing to try it.

Here are some suggestions for tutoring:

1. Train students, aides, or community adults to experiment with alternative methods for children who need introductory or reinforcement strategies. Observe the interactions that occur and carefully record day-to-day or week-to-week grades based on specific instructional objectives. When you see improvement, continue; when gains are not evident within two or three weeks, try a different strategy.

2. Experiment with tutors of different ages, genders, and personalities to see who works best with specific children. Ask the children for their reactions to the tutors. Allow them to choose and change tutors. Capitalize on willing parents and grandparents, community specialists, retirees, people in residential homes, volunteer students, and technology for tutorial roles.
3. Teach students about their own and their classmates' learning styles and suggest that they alternately try tutoring classmates with similar and different styles. Similarly, make them aware of their teachers' teaching styles and show them how to bypass their teachers' styles if they experience difficulty in a specific subject or class.

Strategy 9: Although direct instruction has been reported as an effective strategy, it has been the cornerstone of the conventional teaching through which most underachievers have failed. Direct instruction requires learning style characteristics that most underachievers do not possess, such as good auditory and print memory and the ability to sit still at hard desks and chairs for relatively long periods. It also requires that the child attend whether or not the topic relates to his or her interests or understanding. But some teacher- or parent-motivated students do respond well to direct instruction.

To effectively use direct instruction with a broader range of learners:

1. Know the content well; plan ahead; concentrate on making the information interesting, rather than on "covering" the material.
2. Identify students' perceptual and processing preferences and introduce the topic through a method that best matches the majority style, which is rarely auditory and analytic. Have students develop instructional resources that best match their strengths and encourage them to begin by teaching themselves or each other.
3. Relate the content to the children's lives, experiences, interests, fears, or aspirations. Begin the lesson with a short story or anecdote that shows how remembering this information will be

valuable to them. Don't expect them to be motivated unless your delivery is really interesting or dramatic — and ask them what does, and does not, capture and hold their attention.

4. Vary the pace and mood of your delivery. Use props, costumes and different voices. Introduce humor. Show the students you care and are trying to help them achieve in their way.
5. If you begin globally, end analytically — and vice versa.
6. Provide structure for those who need it and choices for those who want them.
7. At the beginning of each lesson, print the lesson objectives on the chalk board and then read them aloud with the students. At the end of the lesson, repeat those objectives and show students how the homework assignment relates directly to using that new and difficult information in a creative way. Explain that applying what they learned will help them remember.
8. Always make homework a task in which students create an original resource to show how well they learned the required objectives. Permit them to do their homework alone, in a pair, or in a small group.
9. Integrate the required basic skills through related content areas to increase global students' interest in what is being taught. If you also tape record each subject's primary textbook, your students' ability to read will improve gradually.
10. Use work sheets and seatwork only if students are able to achieve at least 90% when working with them.

Strategy 10: Several studies indicate that computer instruction best reinforces the learning styles of tactual students. Because underachievers tend to be tactual or kinesthetic learners, it is likely that this hands-on approach may be a viable strategy for many of them. However, I have one concern: Computer software tends to be written analytically.

To use computer instruction, here are some suggestions:

1. Become computer-literate to demonstrate your own facility with this medium and to encourage your students to use it.
2. Order computer software programs to provide alternative approaches for mastering computational and advanced skills.
3. Become familiar with global approaches to teaching and choose software that emphasizes anecdotal, experiential, and hands-on lessons.
4. Use technology to provide an alternative for youngsters who perform poorly in conventional settings. This medium lends itself to learning alone, in pairs, and occasionally in a small group.
5. Teach students to develop computer software as one means of creatively applying difficult information they have learned. Some student-designed PLS can be translated into software packages from which classmates can learn.
6. Become familiar with videodisks and interactive video programming to teach students for whom regular classroom instruction has not been successful.
7. Encourage the use of videotaping, photographing, film making, and software development as everyday instructional resources.
8. Obtain used electric typewriters for the classroom. Some youngsters learn better with typewriters and computers than they do with human beings. Also look for used television sets.

Strategy 11: Multicultural education was conceived as a way to assimilate minority groups into the dominant American culture and to remediate presumed deficits or differences in their ability to function well in conventional schools. Results have been mixed at best. Programs to increase teachers' sensitivity have had little success. Milgram, Dunn, and Price (1993) reported that within the same areas of giftedness – dance, drama, literature, mathematics, music, sports, and leadership – adolescents in nine diverse cultures revealed essentially similar learning styles. Gifted and nongifted students evidenced significantly different learning styles.

To better use multicultural techniques:

1. Identify how individuals learn, rather than focusing on either cultural or achievement differences.
2. Accent the positives of diversity. Emphasize the needs that humans have for safety, cooperation, and shared expertise. Teach children to respect all people, tolerate those with different ideas, and find individuals in various cultural groups whose personality and learning styles match their own.
3. Use culturally relevant reading materials that include ethnic characters, deal with universal issues, and include settings and experiences with which students can identify.

Strategy 12: Howard Gardner's theory of multiple intelligences describes linguistic, musical, logical-mathematical, spatial, bodily-kinesthetic, interpersonal, and intrapersonal intelligences. Central to this view is the belief that differences in student achievement may result from conventional schooling's narrow emphasis on linguistic and mathematical intelligence to the exclusion of other forms of intelligence. Studies of underachievers with bodily-kinesthetic strengths who had been taught with instructional resources that complemented that particular intelligence revealed significantly higher achievement test scores and attitudes than obtained when those same learners were taught auditorially or visually.

Milgram, Dunn, and Price's (1993) study of adolescents in nine culturally diverse nations revealed that, within the same intelligence areas, the learning styles of gifted students tended to be essentially similar — and significantly different from the learning styles of underachievers. Thus gifted and underachieving students generally should not be grouped together because they learn through significantly different learning styles.

To incorporate a recognition of multiple intelligences, expose children to a variety of creative activities to permit them to develop interests that respond to their particular or potential intelligences. Getting

them involved in projects and original creations helps children to develop verbal, tactual, kinesthetic, analytic, and global capacities and is an essential component of nurturing their gifts. Dunn, Dunn, and Treffinger (1992) recommended such activities as:

alphabet word formations
water writing
coloring celery
seed bugs
book covers
scrapbooks
historical costumes
monthly calendars
board games
guess who?
puppet shows
human tree
imaginary lessons
story mapping
vocabulary games
sand tracing
letter box cut-outs
macaroni spelling
word-part tease-o-cup toss
tree pictures
rhyming poems
new recipes
historical costumes
tall tales
new endings
maps and charts
paper movies
news reporting
crossword puzzles
script writing
graphing
pantomiming
rewriting stories

With your students, develop guidelines for viewing television, listening to music, reading a story, or watching a film. Permit the youngsters to analyze each activity in terms of agreed standards. Let them do this independently, in pairs, or in a small group. Encourage students to report their decisions through alternative forms of intelligence, such as music, drama, poetry, mathematics, pantomime, drawing, painting, puppetry, or sculpture.

Other techniques include:

1. Use team learning to introduce new and complex information and to apply it creatively.

2. Ask students with different intelligence talents to demonstrate the same incident or solution in their own way. Suggest alternatives that permit use of athletic, artistic, dance, dramatic, interpersonal, intrapersonal, linguistic, manipulative, mathematical, musical, pantomime, or story-telling abilities.
3. Give homework assignments that can be demonstrated through alternative intelligences.
4. Ask children to describe what they do best in order to develop their awareness of their own potential. Suggest some possibilities and allow them to add whatever they do well. Ask them to analyze the intelligences needed to do the activity well.

Conclusion

If we are going to teach diverse learners, we must concentrate on teaching students about their learning style strengths, how to teach themselves and each other, and how to bypass their teachers' styles when they are mismatched with their learning styles.

We need to eliminate compensatory programs because their relative ineffectiveness has been demonstrated. Few children who are placed in them ever get out of them. Instead, we should match students with methods with which they can succeed. We also must stop labeling children as incapable. Instead, we need to consider that it may not be the children who fail school, but the current system that fails children.

Teachers are worn out from seeking cure-alls and finding that nothing really improves achievement. One reason these attempts fail is that we implement each new fad with every student, instead of with those for whom each is likely to be appropriate. We need to try everything new on a pilot basis and determine for whom it is, or is not, effective before we recommend it for wide-scale adoption.

Current classroom practices applied across the board for all students in the same class damage many learners. If we take the responsibility for teaching diverse learners, we must break with tradition. When children do not learn the way we teach them, then we must teach them the way they learn.

Resources

Additional information or help in identifying and teaching to students' learning styles can be found in the following resources. In addition, St. John's University's Center for the Study of Learning and Teaching Styles conducts an annual Leadership Institute that certifies learning style trainers and makes available instructional resources that respond to students' diverse styles. For free brochures, readers may write to Dr. Rita Dunn, Center for the Study of Learning and Teaching Styles, St. John's University, 8000 Utopia Parkway, Jamaica, NY 11439.

Dunn, R.; Bruno, J.; Sklar, R.I.; Zenhausern, R.; and Beaudry, J. "Effects of Matching and Mismatching Minority Developmental College Students' Hemispheric Preferences on Mathematics Scores." *Journal of Educational Research* 83 (May/June 1990): 283-88.

Dunn, R., and Dunn, K. *Practical Approaches to Individualizing Instruction: Contracts and Other Effective Teaching Approaches*. Englewood Cliffs, N.J.: Prentice-Hall, 1972.

Dunn, R., and Dunn, K. *Teaching Elementary Students Through Their Individual Learning Styles: Practical Approaches for Grades 3-6*. Boston: Allyn and Bacon, 1992.

Dunn, R., and Dunn, K. *Teaching Secondary Students Through Their Individual Learning Styles: Practical Approaches for Grades 7-12*. Boston: Allyn and Bacon, 1993.

Dunn, R.; Dunn, K.; and Perrin, J. *Teaching Young Children Through Their Individual Learning Styles: Practical Approaches for Grades K-2*. Boston: Allyn and Bacon, 1994.

Dunn, R.; Dunn, K.; and Treffinger, D. *Bringing Out the Giftedness in Every Child: A Guide for Parents*. New York: John Wiley and Sons, 1992.

Dunn, R., and Griggs, S.A. *Multiculturalism and Learning Style: Teaching and Counseling Adolescents*. Westport, Conn.: Praeger, in press.

Milgram, R.M.; Dunn, R.; and Price, G.E., eds. *Teaching and Counseling Gifted and Talented Adolescents for Learning Style: An International Perspective*. Westport, Conn.: Praeger, 1993.

Nelson, B.; Dunn, R.; Griggs, S.A.; Primavera, L.; Fitzpatrick, M.; and Miller, R. "Effects of Learning Style Intervention on College Students' Retention and Achievement." *Journal of College Student Development* 34 (September 1993): 364-69.

Thies, A. "A Brain-Behavior Analysis of Learning Style." In *Student Learning Styles: Diagnosing and Prescribing Programs*, edited by J. Keefe. Reston, Va.: National Association of Secondary School Principals, 1979.

Phi Delta Kappa Fastbacks

Two annual series, published each spring and fall, offer fastbacks on a wide range of educational topics. Each fastback is intended to be a focused, authoritative treatment of a topic of current interest to educators and other readers. Several hundred fastbacks have been published since the program began in 1972, many of which are still in print. Among the topics are:

Administration
Adult Education
The Arts
At-Risk Students
Careers
Censorship
Community Involvement
Computers
Curriculum
Decision Making
Dropout Prevention
Foreign Study
Gifted and Talented
Legal Issues
Mainstreaming
Multiculturalism
Nutrition
Parent Involvement
School Choice
School Safety
Special Education
Staff Development
Teacher Training
Teaching Methods
Urban Education
Values
Vocational Education
Writing

For a current listing of available fastbacks and other publications of the Educational Foundation, please contact Phi Delta Kappa, 408 N. Union, P.O. Box 789, Bloomington, IN 47402-0789, or (812) 339-1156.

Phi Delta Kappa Educational Foundation

The Phi Delta Kappa Educational Foundation was established on 13 October 1966 with the signing, by Dr. George H. Reavis, of the irrevocable trust agreement creating the Phi Delta Kappa Educational Foundation Trust.

George H. Reavis (1883-1970) entered the education profession after graduating from Warrensburg Missouri State Teachers College in 1906 and the University of Missouri in 1911. He went on to earn an M.A. and a Ph.D. at Columbia University. Dr. Reavis served as assistant superintendent of schools in Maryland and dean of the College of Arts and Sciences and the School of Education at the University of Pittsburgh. In 1929 he was appointed director of instruction for the Ohio State Department of Education. But it was as assistant superintendent for curriculum and instruction in the Cincinnati public schools (1939-48) that he rose to national prominence.

Dr. Reavis' dream for the Educational Foundation was to make it possible for seasoned educators to write and publish the wisdom they had acquired over a lifetime of professional activity. He wanted educators and the general public to "better understand (1) the nature of the educative process and (2) the relation of education to human welfare."

The Phi Delta Kappa fastbacks were begun in 1972. These publications, along with monographs and books on a wide range of topics related to education, are the realization of that dream.