

The background of the cover features several stylized, light green leaf motifs scattered across the surface. Each motif consists of a stem with two leaves pointing upwards and to the right.

MULTICULTURALISM AND LEARNING STYLE

Teaching and Counseling Adolescents

Rita Dunn, Shirley A. Griggs

The logo for Greenwood Publishing Group, featuring a stylized green leaf motif to the left of the text.

Greenwood
PUBLISHING GROUP

MULTICULTURALISM AND LEARNING STYLE

This page intentionally left blank

MULTICULTURALISM AND LEARNING STYLE

Teaching and Counseling
Adolescents

Rita Dunn & Shirley A. Griggs

PRAEGER

Westport, Connecticut
London

Library of Congress Cataloging-in-Publication Data

Dunn, Rita Stafford.

Multiculturalism and learning style : teaching and counseling adolescents / Rita Dunn and Shirley A. Griggs.

p. cm.

Includes bibliographical references and index.

ISBN 0-275-94762-9 (alk. paper)

1. Minority students—Education—United States. 2. Learning, Psychology of. 3. Minority students—Counseling of—United States.

I. Griggs, Shirley A. II. Title.

LC3731.D85 1995

371.97'00973—dc20 94-36775

British Library Cataloguing in Publication Data is available.

Copyright © 1995, 1998 by Rita Dunn and Shirley A. Griggs

All rights reserved. No portion of this book may be reproduced, by any process or technique, without the express written consent of the publisher.

Library of Congress Catalog Card Number: 94-36775

ISBN: 0-275-96480-9 (pbk.)

First published in 1995

Praeger Publishers, 88 Post Road West, Westport, CT 06881

An imprint of Greenwood Publishing Group, Inc.

Printed in the United States of America



The paper used in this book complies with the Permanent Paper Standard issued by the National Information Standards Organization (Z39.48-1984).

10 9 8 7 6 5 4 3 2 1

Contents

<i>Preface</i>	vii
<i>Acknowledgments</i>	xi
1. Examining Your Knowledge of Multiculturalism and Learning Styles	1
2. Understanding Learning Styles and the Need for Teaching to Individual, Rather than Group, Characteristics	13
3. Understanding Learning-Styles Counseling and the Adolescent Stages of Development	27
4. Multiculturalism and the Learning-Style Characteristics of Major Cultural Groups in the United States	37
5. Identifying Adolescents' Individual Learning-Style Strengths	79
6. Managing the Implementation of a Learning-Styles Program	103
7. Designing Tactual and Kinesthetic Resources to Respond to Adolescents' Individual Learning Styles	129
8. Designing Programmed Learning Sequences to Respond to Adolescents' Individual Learning Styles	165
9. Designing Contract Activity Packages to Respond to Adolescents' Individual Learning Styles	201

10. Designing Multisensory Instructional Packages to Respond to Adolescents' Individual Learning Styles	227
<i>Epilogue</i>	235
<i>Appendix</i> Contract Activity Packages Available Through the Center for the Study of Teaching and Learning Styles	237
<i>References</i>	239
<i>Author Index</i>	271
<i>Subject Index</i>	277

Preface

In recent years, the costs and consequences of the high number of at-risk and dropout minority students in the United States and throughout the world have been major concerns of educators and parents. They are also concerns of governments and communities faced with exorbitant welfare and crime rates.

Analyses of the learning styles of many at-risk and dropout students have revealed that such students learn in a processing style and with instructional strategies that differ significantly from those of adolescents who tend to perform well in conventional schools (Dunn & Dunn, 1992, 1993; Dunn & Griggs, 1988b; Dunn, Dunn, & Perrin, 1994). In addition, dropouts are more likely to be African Americans, Native Americans, and Hispanics than whites or Asian Americans (Paulu, 1987), and they are overrepresented in vocational and general tracks and in special education (Oakes, 1985). Indeed, the high rate of underachievement among minorities prompted suggestions that teachers should “teach to the learning styles of black children” (Hale-Benson, 1982, p. 196).

Allegations that minorities may learn differently from majority Caucasians led to the establishment of a New York State Board of Regents panel to investigate that concept (D’Antonio, 1988). Ultimately, that panel of representatives from diverse disciplines reported that no evidence supported the controversial theory that African Americans shared distinctly different learning styles from those of Caucasians (Gordon, 1988). The panel’s conclusions, however, were based solely on examination of a limited number of published studies at that time, selected articles, and personal testimony. Its budget permitted the panel of a dozen authorities to meet for a total of only two full days.

Since that time, at least 35 independent studies have compared the learning styles of multicultural students both in the United States and abroad. Some of these compared various age and academic-achievement groups (Dunn & Griggs, 1989b, 1990). Others concentrated on the learning styles of gifted minority youngsters in Illinois (Ewing & Yong, 1992) and underachieving Cajun and Native American students in Louisiana (Drew, 1991). Dunn, Griggs, and Price (1993a) differentiated among the styles of adolescents gifted in art, athletics, dance, literature, mathematics, music, and science across the United States and also compared those of Mexican American and Anglo American elementary school males and females (1993b). A series of international studies examined the learning styles of gifted and talented adolescents in nations as diverse as Brazil, Canada, Egypt, Greece, Guatemala, Israel, Korea, the Philippines, and the United States (Milgram, Dunn, & Price, 1993a).

Other researchers compared the learning styles of underachievers regardless of their ethnicity (Andrews, 1990, 1991; Dunn & Griggs, 1988b; Dunn, Bruno, Sklar, & Beaudry, 1990; Gardiner, 1986; Hodges, 1985; Wittenberg, 1984). Some examined the learning styles of various special education populations (Bauer, 1991; Brunner & Majewski, 1990; Dean, 1982; Lux, 1987; Snider, 1985). Reid (1987) identified the style preferences of English-as-a-second-language (ESL) students without regard to cultural differences.

Underachievers in each group revealed essentially similar learning-style traits, and those differed significantly from the learning styles of gifted students. Indeed, in the Milgram, Dunn, and Price (1993b) findings, the learning styles of gifted adolescents in mathematics were essentially similar across cultures, as were the learning styles of the gifted in literature, and the gifted in art, music, dance, drama, or sports. Although gifted adolescents within each talent area tended to reveal essentially similar styles, the learning styles of each gifted group was significantly different from the learning style of every other gifted group.

Thus, this book, the first of its kind,

1. analyzes and synthesizes the research that reveals the similarities and differences among the learning styles of culturally diverse populations;
2. clarifies the implications of multicultural students' varied learning styles for both teaching and counseling;
3. describes how to teach and counsel adolescents with different learning styles through their identified individual strengths;
4. reports on schools that have successfully reversed underachievement among culturally diverse students; and

5. guides readers toward teaching and counseling multicultural adolescents with diverse learning styles so that the students can achieve better, enjoy learning more, develop confidence in their ability to master new and difficult information, and discipline themselves while learning.

This page intentionally left blank

Acknowledgments

This book is an outgrowth of almost three decades of research concerned with the learning styles of multicultural populations throughout the United States and abroad. These investigations involved the commitment and expertise of more than 18 professors and 60 doctoral students working cooperatively at St. John's University in New York—the largest Catholic University in the United States.

We are deeply appreciative of the support and encouragement given to us by our university's administrators who foster a climate "based on respect for all persons" and support "cultural diversity in an interdependent world" (Harrington, 1994, p. 2). In keeping with this commitment, which has been endorsed by all segments of our community, we were granted a six-month research leave to complete this text.

We also express our gratitude to Mrs. Madeline Larsen, secretary, Division of Administrative and Instructional Leadership, who assisted in the typing of this manuscript.

This page intentionally left blank

MULTICULTURALISM AND LEARNING STYLE

This page intentionally left blank

Chapter 1

Examining Your Knowledge of Multiculturalism and Learning Styles

Beginning with the first one-room schoolhouse established in the colonies, American teachers have always taught students from widely diverse backgrounds. For almost 200 years, we successfully absorbed immigrants into our classrooms, but during most of that period they comprised only a small percentage of the total school population. Then, as the birthrate among Caucasians in the United States declined, the proportion of minority children increased. By 1987, Edelman calculated that nearly one-quarter of all children under age 15 were black and Hispanic. In that same year, Paulu (1987) reported that black and Hispanic students were more likely than others to perform poorly in school, become at risk, and drop out.

Changing demographics in U.S. schools reveal that within the next five years the current “minority” population will have become the majority population in 53 major U.S. cities (Rodriguez, 1988). Although government and industry grants have provided extensive funding for a variety of new programs for underachieving minority students, few of those programs have succeeded in improving the students’ standardized achievement test scores.

In schools that have evidenced statistically increased achievement gains among African-American youth, instruction had been changed to respond to how those students most preferred to learn—their “learning styles” (Andrews, 1990, 1991; Brunner & Majewski, 1990; Nganwa-Bagumah & Mwamwenda, 1991; Perrin, 1990; Quinn, 1994; Stone, 1992; *The Bridge to Learning*, 1993). For example, in 1985 and 1986 students in the Brightwood Elementary School, Greensboro, North Carolina, had achieved only in the 30th percentile on the California Achievement Tests of Basic Skills

2 Multiculturalism and Learning Style

(CATs). Principal Roland Andrews then identified the youngsters' learning styles with the Learning Style Inventory (LSI) (Dunn, Dunn, & Price, 1979) and found that

- 126 were global, 119 were analytic, and only 9 could learn difficult academic information either way;
- 61 needed low light, 36 needed bright light, and 167 could work in either illumination;
- 29 preferred conventional seating, but 91 could not sit in a wooden, plastic, or steel chair for more than 10–12 minutes;
- 147 required a great deal of structure, but 10 required options when learning; 108 required structure when not interested in the curriculum content, and choices when they were;
- 26 could achieve better in a structured situation when learning alone than with a teacher or with classmates; 56 were peer oriented and could learn well in either pairs or small groups;
- 182 could learn neither alone nor with classmates; of those, 94 required an authoritative teacher whereas 27 required a collegial teacher;
- 98 needed a variety of instructional strategies and became bored with repetition; conversely, 34 needed routines and patterns and felt uncomfortable when new strategies were introduced;
- whereas 90 *were* auditory, 21 could not remember much of what they heard and 147 only could retain well by listening when they were interested in what they were learning;
- all 54 fifth and sixth graders were visual; 33 others in the school were not; 176 could remember three-quarters of what they read or observed only when interested in the topic;
- 165 were tactual learners—a group substantially larger than either the auditory or visual learners; only 5 percent were low tactual, and 94 additional youngsters could learn tactually only when interested in the material;
- 175 were kinesthetic learners—children who learn while actively engaged in activities related to what they are learning, such as role playing, trips, making and doing things, and educational floor games; indeed, kinesthetic and tactual learners comprised the majority of Brightwood's students;
- 64 required some form of snacking or liquid while learning; 84 did not; 116 did at times;
- 55 were “early-morning birds”; 70 were “night owls”; 41 were late-morning preferents; 100 were virtually nonfunctional in the early morning but “came alive” in the afternoon; thus, the majority should have been taught basic required subjects in the afternoon and/or late morning; “night” children should have been taught how to study at home in the evening;
- 102 required frequent mobility; only 53 could sit passively for any length of time; 109 could remain in their seats only when interested in what they were learning; when not, they needed mobility;

- only two children were neither parent nor teacher motivated; most wanted to please the adults in their lives but were incapable of doing so while learning conventionally (Klavas, 1993).

In 1987, after only one year of teaching the children about their learning-style strengths, adjusting the environment to permit alternative illumination and seating, and introducing tactual instructional resources to those with tactual preferences, teachers found that students' test scores on the CATs escalated to the 40th percentile. In 1988, the second year of the learning-styles program, when reading and mathematics were taught in the afternoon and small-group strategies were introduced, the school's CAT scores in both subjects jumped to between the 74th and 76th percentile. In 1989, the third year of Brightwood's learning-styles program, CAT scores reached the 83rd percentile. One year later they reached the 89th percentile (Andrews, 1990, 1991). During that period African-American youth in North Carolina consistently performed between the 20th and 30th percentiles nationally. In Brightwood, black students performed at the 70th percentile or better (Andrews, 1990, 1991).

Essentially similar gains were reported by the Buffalo City schools. Under the supervision of a team of researchers from the State University at Buffalo, learning-disabled (LD) and emotionally handicapped (EH) students (K-6) were randomly selected and randomly assigned to two groups. The experimental group was taught through its students' learning-style preferences, whereas the control group was taught with the methods its special education teachers had used traditionally. Results at the end of the first two-year period revealed that the experimental group had achieved statistically higher test scores than the control group in both reading and mathematics on two different standardized achievement tests—the Woodcock-Johnson and the CATs. In contrast, the control group had evidenced academic losses between the pretest and the posttest (see Table 1.1).

These findings suggest that students whose instruction is not responsive to their learning styles achieve significantly less well than children whose instruction is responsive to their learning styles. Nothing differed between either (1) the experimental group and the control group in Buffalo or (2) pre-1987 test score and the post-1987 test score in Brightwood other than the introduction of learning-style-based instruction. That single factor contributed to the significantly higher test scores in the two school systems.

Brightwood Elementary School in North Carolina and the Buffalo City schools in New York were comprised of culturally diverse students who had not been achieving well with conventional teaching. Does the fact that their students achieved statistically higher test scores only *after* learning-style-responsive instruction suggest that they had previously not been taught correctly—for them? Do the changes in their students' performance

4 Multiculturalism and Learning Style

Table 1.1
Comparison of SAT Scores

Report from the Independent Research Team of the University of Buffalo: Results of Standardized Achievement Test Scores in Reading and Mathematics for Students in the Buffalo City Schools' Learning Styles Program (Experimental Group) in Contrast with the Results of Students in its Non-Learning Styles Program (Control Group) for the First Two Years of Program Implementation.

<u>Test Name</u>	<u>Group</u>	<u>Pre-Test</u>	<u>Post-test</u>	<u>Net Difference</u>
WJ* Reading	Exper.	72.38	79.1	+ 6.72
	Control	76.48	71.52	- 4.96#
WJ+ Math	Exper.	69.67	84.2	+ 14.53
	Control	73.52	69.09	- 4.43#
CTBS+ Reading	Exper.	18.76	31.33	+ 12.57
	Control	24.83	21.25	-3.58
CTBS+ Math	Exper.	15.83	18.61	+2.78
	Control	23.44	16.95	-6.49

*WJ: Woodcock-Johnson +CTBS: California Test of Basic Skills

#Loss

further suggest that how their students learn may be different from how other students in U.S. schools learn?

Another issue to consider is that of Asian or German students achieving better than U.S. students. Does such achievement imply a difference in the learning styles of one group in comparison with the other? Is instruction in one system less responsive to individual differences than in another? Or are other factors at work here?

Before providing answers to these questions, we would like you to consider and confront your own beliefs about how students learn and why some succeed when others fail. Do most people learn in the same way? Do people from different cultures, races, religions, and/or nations learn similarly to each other? Should we alter the instructional delivery system for different students based on their learning styles? Is it important to change instruction at all? Do IQ, motivation, school expectations, family background, or cultural heritage influence learning so much that certain children can, whereas other children cannot, learn easily? What do you believe about how culturally diverse students learn?

YOUR BELIEFS ABOUT HOW DIVERSE STUDENTS LEARN

Questionnaire on Learning Style and Multiculturalism

Directions

Consider the following questions carefully. At the end of each sentence, circle or write what you believe is the most accurate answer. After answering all the questions, compare your answers with those at the end of the chapter. The references at the end provide the research support for the answers.

In this questionnaire “learning” refers to how individuals concentrate on, process, and remember new and difficult information, and “significantly” refers to statistically measurable differences.

Questions

1. Do most people in one culture learn differently from most people in another culture? Yes _____ No _____
2. Do most people in the same culture learn in basically the same way? Yes _____ No _____
3. Do boys and girls learn differently from each other? Yes _____ No _____
4. Do high and low achievers learn differently from each other?
5. Is there a relationship between how someone learns and being gifted? Yes _____ No _____
6. Does learning style contribute to underachievement? Yes _____ No _____
7. Do children and adults learn differently? Yes _____ No _____
8. Do the *majority* of students (K–12) learn best by listening? _____ by reading? _____ by taking notes? _____ by experiencing? _____
How large is the largest group that learns best through any of the above modalities? _____
9. Can a low auditory and low visual student become an A, B+, or B student in conventional schools? _____
10. (a) Do a *majority* of students (K–12) learn best through cooperative learning?
(b) Who does? _____ (c) Who doesn't? _____ (d) How do we know? _____
11. (a) Do a *majority* of students learn best in early morning? _____ (b) Who learns best in early morning? _____ (c) Who learns best at night? _____
12. Are people with one learning style more or less intelligent than people with another learning style? Yes _____ No _____
13. (a) Are the majority of students “analytic” (step-by-step sequential) learners? Yes _____ No _____ (b) What is the opposite of being analytic? _____

6 Multiculturalism and Learning Style

(c) Name another processing style. _____ (d) Are people with one processing style more or less intelligent than people with another? Yes _____ No _____

14. Are the majority of teachers “analytic” (step-by-step sequential) instructors? Yes _____ No _____
15. Are there differences among cultures concerning attitudes toward school and teachers? Yes _____ No _____
16. How do selected learning-style elements change based on growth and development?
17. Is it necessary to consider an adolescent’s learning style when selecting various counseling techniques and interventions? Yes _____ No _____
18. Identify a counseling approach that accommodates analytic students and another that accommodates global students.

Answers to Questionnaire on Learning Styles and Multiculturalism

1. No. Within every family in each culture, people learn differently from each other (Dunn & Griggs, 1990).
2. No. Most people *within* each culture learn differently from other people in the same culture. Therefore, most people in any culture learn differently from the people within the same culture and from people in different cultures.
3. Yes. Particularly during the primary school years, there are more differences between the learning styles of boys and girls than between the learning styles of people in different cultures. For example, girls develop comparatively strong auditory memory and small-motor coordination earlier than boys. Thus, they remember what they hear better and write more neatly than their male classmates. We rarely say to girls, “Why can’t you remember!” or “How many times must I tell you that!” We frequently admonish boys for either forgetting, “not hearing,” or not “concentrating”—because many of them cannot remember a great deal of what has been said to them. Girls are also better able to sit passively for a longer amount of time in conventional seats and desks, whereas most boys require mobility and an informal design significantly more than girls. That is why boys are repeatedly reprimanded for squirming in, or falling out of, their seats. Conversely, boys develop large-motor coordination earlier and excel in physical activities such as sports, in contrast with girls’ ability to write more neatly, cut with a pair of scissors more precisely, and draw within lines better than boys. Too, boys remain tactual and kinesthetic learners longer than girls. Girls are more authority oriented, whereas boys tend to become peer oriented earlier and remain that way longer. In addition, girls need significantly more quiet while learning whereas boys tolerate noise in the environment better; few males are distracted by sound because most are not very aware of it.

4. Yes. The learning styles of high-academic achievers and low-academic achievers differ significantly. The former generally have preferences that respond to conventional schooling; for example, they are (a) auditory or visual learners; (b) self-motivated, parent motivated, or authority motivated (rather than unmotivated or peer motivated); (c) not in need of mobility or food while learning; and (d) conforming rather than nonconforming. Underachievers tend to be tactual/kinesthetic learners who often require sound, soft lighting, an informal design, intake, and mobility while learning. They often are peer motivated or motivated only when interested in what they are learning. Underachievers also require a variety of resources, methods, or approaches while learning and become bored with routines. During the period in which adolescents may be experiencing nonconformity, achievers as well as underachievers may become temporarily anti-authoritarian; they may, for example, prefer collegial to authoritative teachers and other adults.
5. Yes. When students (a) are taught in ways that complement either their interests or natural talents, (b) feel a sense of accomplishment or pleasure, (c) reap benefits that respond to their emotionality, and (d) have the opportunity to engage in activities in which they can excel, over time their talent often develops into exceptional ability—which society views as giftedness (Dunn, Dunn, & Treffinger, 1992; Milgram, Dunn, & Price, 1993a).
6. Yes. When adolescents do not learn because of the way they are being taught, learning becomes difficult, boring, tension provoking, and frustrating. Some students give up, some give in, and others withdraw. Any one of these three conditions may lead to poor school achievement.
7. Yes. Many elements of style change as children grow older, mature, and spend time in school. We do not know whether those changes are maturational or an outgrowth of students' ability to respond to conventional schooling. Elements that tend to change developmentally include responsiveness to sound, light, seating designs, motivation, responsibility (conformity-nonconformity), need for structure and intake, social groupings, perception, and chronobiological highs and lows (Price, 1980). Some elements change in some people and not in others (e.g., global versus analytic inclinations and motivation). Temperature preferences rarely change, and persistence changes only slowly over time, if at all. Although some change can be predicted based on general patterns at various age levels, individual cycles are established because of biological and developmental uniqueness.
8. No. Less than 30 percent of adults learn best through auditory means, and among school-age youth the percentage is closer to 10–12 percent. Visual learners comprise up to 40 percent of adults, but many of these are graphic-photographic learners; among K–3 children, the percentage is closer to 15–20 percent, varying by gender and achievement. Note-takers tend to be visual/tactual students who cannot remember much of what they hear without writing it. Kinesthetic learners master what they learn through experience, involvement, and movement while learning; usually they do not learn through someone else's experiences or by listening or reading.

The percentage of modality preferences varies with age, gender, and achievement, but there are more tactual and kinesthetic school-age youth than

8 Multiculturalism and Learning Style

auditory learners everywhere we have tested students during the past quarter of a century.

9. Yes. Most students can learn anything when they (a) begin learning with their preferred perceptual strength, (b) reinforce through their secondary or tertiary modality, and then (c) apply the new information they have been exposed to by using it to develop a new instructional resource (e.g., explaining information by writing a poem; creating a play, film, book, or game; or making a set of task cards, an electroboard, a pic-a-hole, or a flip chute). The ability to learn is also based on the individual's interest in the topic or subject.
10. No. In the general population approximately 13 percent of most students learn best alone; approximately 28 percent learn well with peers, but within this group are students who learn only with one classmate and others who learn in a small group. Another 28 percent need an adult; within this cluster are some who need a collegial adult and others who need an authoritative adult. Some can learn well in two or more groupings, and many learn best only in one (Cholakis, 1986; DeBello, 1985; Dunn, Giannitti, Murray, Geisert, Rossi, & Quinn, 1990; Miles, 1987; Perrin, 1984). However, those percentages vary with academic achievement and age. For example, gifted adolescents in at least nine diverse nations strongly preferred to learn independently, that is, by themselves. Their second most-preferred sociological preference was learning with an *authoritative* adult. Young gifted children also preferred learning alone, unless they could not complete their tasks alone, at which point they preferred learning with other *gifted* children (Perrin, 1984). In U.S. schools sociological preferences appear to be substantially influenced by age, grade, and achievement levels (Dunn & Dunn, 1992, 1993; Dunn, Dunn, & Perrin, 1994).
11. No. Time-of-day energy levels vary widely, particularly with age. At best only between 30 and 40 percent of adolescents are most alert in the morning. A majority first "come alive" between 10:00 A.M. and 10:30 A.M., and their highest energy levels are between then and 2:30 P.M., during which time we give them a one-hour lunch period (Dunn & Dunn, 1993; Lynch, 1981).
12. No. Because most teachers teach either by talking (which requires students to learn well by listening) or by reading (which requires students to learn well by seeing), students who remember well by listening or seeing tend to become comparatively high achievers in school. Most young children are tactual and/or kinesthetic preferents but are taught through lectures or readings, so that it is difficult for them to remember at least 75 percent of what they need to learn. When tactual and kinesthetic students are (a) introduced to difficult materials with tactual or kinesthetic instructional resources, (b) reinforced with a *different* modality resource, and (c) required to apply the new information creatively, they learn significantly more than when they are taught incorrectly (for them) (Andrews, 1990, 1991; Ingham, 1991; *The Bridge to Learning*, 1993; Carbo, 1980; Garrett, 1991; Ingham, 1991; Jarsonbeck, 1984; Martini, 1986; Stone, 1992; Weinberg, 1983; Wheeler, 1980, 1983).
13. No. Based on correlations between at least three different instruments and learning-style characteristics, the majority of young children and students who

do not perform well in school appear to be global, that is, they are people who (a) need to understand a concept before they can focus on the details, (b) learn best when interested in the subject, (c) often learn informally, with music, intake, and others nearby, (d) may learn better in soft light than in bright light, and (e) prefer to work on several tasks simultaneously rather than on one at a time (Brennan, 1984; Cody, 1983; Dunn, Bruno, Sklar, & Beaudry, 1990; Dunn, Cavanaugh, Eberle, & Zenhausern, 1982; Trautman, 1979). Neither cognitive processing style is better, nor are analytic students more intelligent than global students. However, analytics tend to be higher academic achievers—because most teachers teach analytically.

14. Yes. Of the teachers we have tested during the past 20 years, 65 percent tend to be analytic, whereas in the overall population 55 percent of adults are global and only 28 percent of adults are analytic. In a study of gifted and talented adolescents in nine diverse cultures, 18 percent of the gifted students were analytic and 26 percent were global (Milgram, Dunn, & Price, 1993a). Students appear to be equally intelligent when they are taught in ways that respond to their learning-style preferences. Cody (1983) found that with an IQ of 125 and in the 94th percentile in reading or math, eight of ten students were analytic. With an IQ of 135, that statistic reversed and eight of ten students were global. With an IQ of 145 or above, nine of ten students were global.
15. Yes. Different cultures express different attitudes toward teachers, education, and what comprises valuable learning. It appears to be common knowledge that in the United States it is considered polite for students to look squarely into the eyes of a teacher when being addressed, whereas in certain cultures, as in Japan, looking directly at an adult is thought to be rude. Being on time, passively or actively participating in learning, studying theoretical versus practical matters, and many subtle behaviors vary extensively from one group to another. A culture's values, the opportunities it provides to individuals, and each student's interests, talents, and learning style contribute to the development, maturation, and expression of intelligence.
16. The need for sound and intake can be observed by second or third grade and for many remains fairly consistent until about sixth grade. At that time, the two preferences "explode," and during adolescence the need for sound and intake becomes stronger than before. For many, at about ninth or tenth grade the two elements begin to return to their previous "normal" level (for that individual). Among older adults the need for quiet appears to increase, and the need for intake appears to decrease.

Temperature inclinations tend to remain the same throughout childhood and adulthood but may gradually change toward the need for more warmth particularly among the aging. Design preferences tend to remain the same during elementary school, gradually lean toward becoming more informal as students reach adolescence, and then may change on an individual basis.

Responsibility tends to correlate with conformity versus nonconformity (Dunn, White, & Zenhausern, 1982). People tend to undergo three periods of nonconformity. The first occurs at approximately two years of age, the second during "adolescence," and the third in middle age, sometimes called

the “midlife crisis.” Motivation varies with interest and the degree to which the teaching matches the student’s learning-style preference. Nothing holds true across the board, of course, but persistence tends to be an analytic quality. Analytic processors, more than global processors, tend to stay on task while learning. Their counterparts often require “breaks” for intake, interaction, changing focus, and so forth. The older students become, the less structure they need, although under pressure of exams or multiple study assignments, for example, many college students require structure (Napolitano, 1986). Sociologically, many young children come to school wanting to please the adults (parents and teachers) in their lives. Somewhere around third grade many start becoming peer motivated. Whereas students rarely used to become peer motivated before seventh or eighth grade (Dunn & Dunn, 1972), they have become peer motivated at younger ages during the past three decades. Many adolescents are peer oriented.

Gifted children also come to school wanting to please the adults in their lives, but early, by first or second grade, most become learning-alone preferents and do not seem to experience a peer stage. Underachievers remain peer oriented longer than either gifted or average achievers. Usually by ninth or tenth grade most average students have emerged from wanting to learn with classmates and become self-motivated. At no time have we ever found more than 28 percent of students in the peer stage, and among that group many learn better with just one other classmate than in a small group. Those who work well with one other classmate are pair-motivated; others need to learn with a teacher, although some need a collegial adult and others need an authoritative adult. In three studies of dropouts, at-risk students required a collegial adult but had been assigned to an authoritative adult (Gadwa & Griggs, 1985; Johnson, 1984; Thrasher, 1984).

Perceptually, the younger the children, the more tactual and/or kinesthetic they are. In elementary school less than 12 percent appear to be auditory (able to remember three-quarters of what they are taught through lecture or discussion) and less than 40 percent are visual (able to remember three-quarters of what they are taught through reading). The older children become, the more visual and, eventually, the more auditory they become. However, females are generally more auditory than males, and males generally become more visual and remain more tactual and kinesthetic than females. Time-of-day preferences change with age (see Chapter 2 for a more complete reference). Many students require mobility, learning more, more efficiently when permitted to move *while* learning (Della Valle, 1984; Miller, 1985).

17. Yes, it is important to design counseling interventions that respond to adolescents’ learning-style preferences for structure, sociological needs, perceptual strengths, and cognitive styles. For example, (a) auditory learners are well accommodated by traditional “talking” counseling approaches, (b) visual learners respond to bibliotherapy and modeling, (c) tactual adolescents need hands-on strategies such as serial drawing or creative writing, and (d) kinesthetic students respond well to game therapy and experiential interventions.

18. Most cognitive behavioral counseling theories are designed for use with analytic students because they employ a rational, sequential approach to problem solving. Conversely, many affective counseling theories, such as Gestalt therapy, are compatible with the holistic, intuitive orientation of global adolescents (Griggs, 1991a).

This page intentionally left blank

Chapter 2

Understanding Learning Styles and the Need for Teaching to Individual, Rather than Group, Characteristics

INTRODUCTION TO LEARNING STYLE

Many people prefer to learn in ways that are sometimes slightly different, and often extremely different, from how other people of the same age, class, culture, grade, religion, or nationality prefer to learn. How people prefer to learn is called their learning-style preference.

Although some people may learn without using their learning-styles preferences, students achieve significantly better when they do, rather than when they don't, capitalize on their preferences. Because students achieve significantly higher standardized achievement and attitude test scores when they learn through their learning-style preferences, those preferences are called "strengths" (Sullivan, 1993).

Conventional schooling often requires that adolescents sit quietly at their desks for long periods of time. They need to learn by either listening to their teachers or reading assigned materials. Students usually show how much they have learned by answering questions on a paper-and-pencil test. Sometimes the entire class learns in small groups, by taking a trip, or by seeing a movie. Occasionally everybody is assigned to develop a project. However, regardless of the activity, the classroom environment and how students are taught is identical for each learner. Everyone is expected to learn in exactly the same way that everyone else learns (Goodlad, 1984).

In learning-style classes, students' strengths are identified and then transferred into a computer software package. That "Homework Disc" generates a personalized, printed prescription for each student describ-

ing how that student is to study and concentrate given his or her strengths. Practitioners reported statistically higher test scores and/or grade-point averages for students taught through their learning-style strengths at the elementary level (Andrews, 1990; Lemmon, 1985; Stone, 1992; Turner, 1993), at the secondary level (Brunner & Majewski, 1990; Elliot, 1991; Gadwa & Griggs, 1985; Orsak, 1990b), and at the college level (Clark-Thayer, 1987; Lenehan, Dunn, Ingham, Signer, & Murray, 1994; Mickler & Zippert, 1987; Nelson, Dunn, Griggs, Primavera, Fitzpatrick, Bacilious, & Miller, 1993).

Differences in how individuals learn explain why certain children perform well in school whereas their siblings may not. Those differences also explain why no one instructional method or resource “works” for all students. Any one approach may help certain adolescents perform well and enable others to perform only marginally, but may also contribute to the poor performances or failure of other individuals.

The research on learning styles provides clear directions for teaching individuals through their learning-style strengths or enabling individuals to teach themselves by capitalizing on their learning-style strengths.

WHAT IS LEARNING STYLE?

Learning style is the way in which each person begins to concentrate on, process, and retain new and difficult information. Concentration occurs differently for different people at different times. It is important to know many things about *individual's* traits to determine what is most likely to trigger each adolescent's concentration, energize his or her processing style, and intervene to increase long-term memory.

To identify the individual's learning-style traits, it is necessary to use a “comprehensive” instrument—one that diagnoses many different traits. A reliable and valid comprehensive instrument reveals which people are affected by which traits. Only three comprehensive models exist, and each has a related instrument designed to reveal individuals' styles based on the traits examined by that model (DeBello, 1990).

It is impossible to obtain reliable and valid data from an unreliable or invalid assessment. The instrument with the highest reliability and validity and the one used in most research on learning styles is the Dunn, Dunn, and Price Learning Style Inventory (LSI) (*Research on the Dunn and Dunn Model*, 1995).

Educators cannot identify students' learning-style traits correctly without an instrument (Beaty, 1986; Dunn, Dunn, Price, 1977; Marcus, 1977); some traits are not observable, even to the experienced educator. In addition, teachers often misinterpret adolescents' behaviors and misunderstand their traits and preferences.

THEORETICAL CORNERSTONE OF THE DUNN AND DUNN LEARNING-STYLE MODEL

Brain lateralization theory emerged in the 1970s and demonstrated that the left hemisphere appeared to be associated with verbal and sequential abilities whereas the right hemisphere appeared to be associated with emotions and with spatial, holistic processing. Although those particular conclusions continue to be challenged, it is clear that people concentrate, process, and remember new and difficult information under very different conditions. For example, auditory and visual perceptual strengths, passivity, and self-oriented or authority-oriented motivation often correlate with high academic achievement, whereas tactual and kinesthetic strengths, a need for mobility, nonconformity, and peer motivation often correlate with school underachievement (Dunn & Dunn, 1992, 1993).

Cognitive-style theory suggests that individuals process information differently based on either learned or inherent traits. Many previous researchers investigated the variables of field dependence/independence, global/analytic, simultaneous/successive, and/or left- or right-preferenced processing. The Dunns and researchers throughout the world conducted studies to determine whether relationships existed between these cognitive dimensions and students' characteristics that appeared to be more or less responsive to environmental, emotional, sociological, and physiological stimuli. They found that selected variables often clustered together. Relationships appeared to exist between learning persistently (with few or no intermissions) in a quiet environment and bright light, in formal seating, and with little or no intake, and being an analytic-left processor (Dunn, Bruno, Sklar, & Beaudry, 1990; Dunn, Cavanaugh, Eberle, & Zenhausern, 1982). Similarly, adolescents who often requested "breaks" while learning and who preferred concentrating in an informal, softly lit, and sound-packed environment with snacks revealed high scores as global-right processors. In many ways, field dependence versus field independence correlated with a global versus an analytic cognitive style and yielded similar traits to those of right- and left-preferenced students. In some instances, more attributes allied themselves with global-right processors than with analytic-left processors. Thus, although global-rights often enjoyed working with peers and using tactual strengths, analytic-lefts revealed neither sociological nor perceptual preferences.

The Dunn and Dunn learning-style model is based on the following tenets:

1. Learning style is a biological and developmental set of personal characteristics (Thies, 1979) that makes the identical instructional environments, methods, and resources effective for some learners and ineffective for others.