

Differentiation through Learning-Style Responsive Strategies

by Jennifer Lauria

With homework and study strategies differentiated to meet individual learning styles, elementary and middle school students are empowered to teach themselves.



Twelve-year-old Olivia, previously an enthusiastic and intellectually curious learner, had become increasingly disenchanted with her school work, particularly homework assignments, regardless of her level of interest in the topic. Though the onset of her shift in attitude toward school was due partly to the mismatched teaching styles she had experienced in prior grades, her growing frustration with homework and studying had been a major contributing factor. As the eldest of four children, Olivia's learning style and preferred study strategies differed from those of her younger school-aged siblings, which caused difficulty for her at home regarding school work.

She felt stressed about not neatly fitting into the traditional mold of what teachers and parents depicted as a good homework and study habits profile. Some of the target behaviors that just didn't work for her included working in a quiet, well-illuminated area, persisting with each individual task to completion, and then moving on consecutively until all required assignments were successfully accomplished. Olivia tended to rush through each homework task or study experience on a superficial level and consistently missed out on key opportunities for deeper learning, critical thinking, and meaningful reflection.

Identification of her learning style strengths and preferences, as well as areas that needed improvement, via an individualized homework prescription, empowered Olivia to differentiate her own study strategies to best suit her needs—which made a world of difference in both her academic performance and attitude toward homework and

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studying. All stakeholders—student, teacher, and family—benefited from this remarkable paradigm shift.

Middle school students similar to Olivia often find themselves at a disadvantage in the age of accountability in modern-day classrooms in the United States. While teachers are burdened with the challenge of improving students' test scores, many succumb to the pressure of teaching to the test. As a result, at the expense of other equally important concepts, students primarily learn how to answer questions on topics likely to appear on standardized tests. Some learners master this information and thus, on paper, appear to have succeeded in a particular academic subject. In the same classroom, other students who clearly understand the concepts and can demonstrate their knowledge and skills through alternative and sometimes more comprehensive assessments are not given the opportunity to do so, thus appearing not to have met the standards of that content area. Students in such predicaments tend to feel helpless and at times even hopeless, emotions that weigh heavily on adolescents' already fragile levels of self-esteem.

Many children, in both scenarios highlighted, are in dire need of differentiated instruction to support their unique learning needs. Differentiated instruction seeks to maximize each student's growth by recognizing that students have different ways of learning, different interests, different ways of responding to instruction, and preferred ways of learning or expressing themselves (Ravitch 2007). Consequently, students are failing because they cannot learn well with the methods through which they are being taught.

Learners faced with such challenges would benefit from being taught to use individualized learning-style homework and study strategies to help them succeed (Minotti 2005). Identifying students' individual learning styles and showing students how to capitalize on their strengths can empower learners to teach themselves when placed in these types of disappointing scenarios. An added bonus is that this strategy

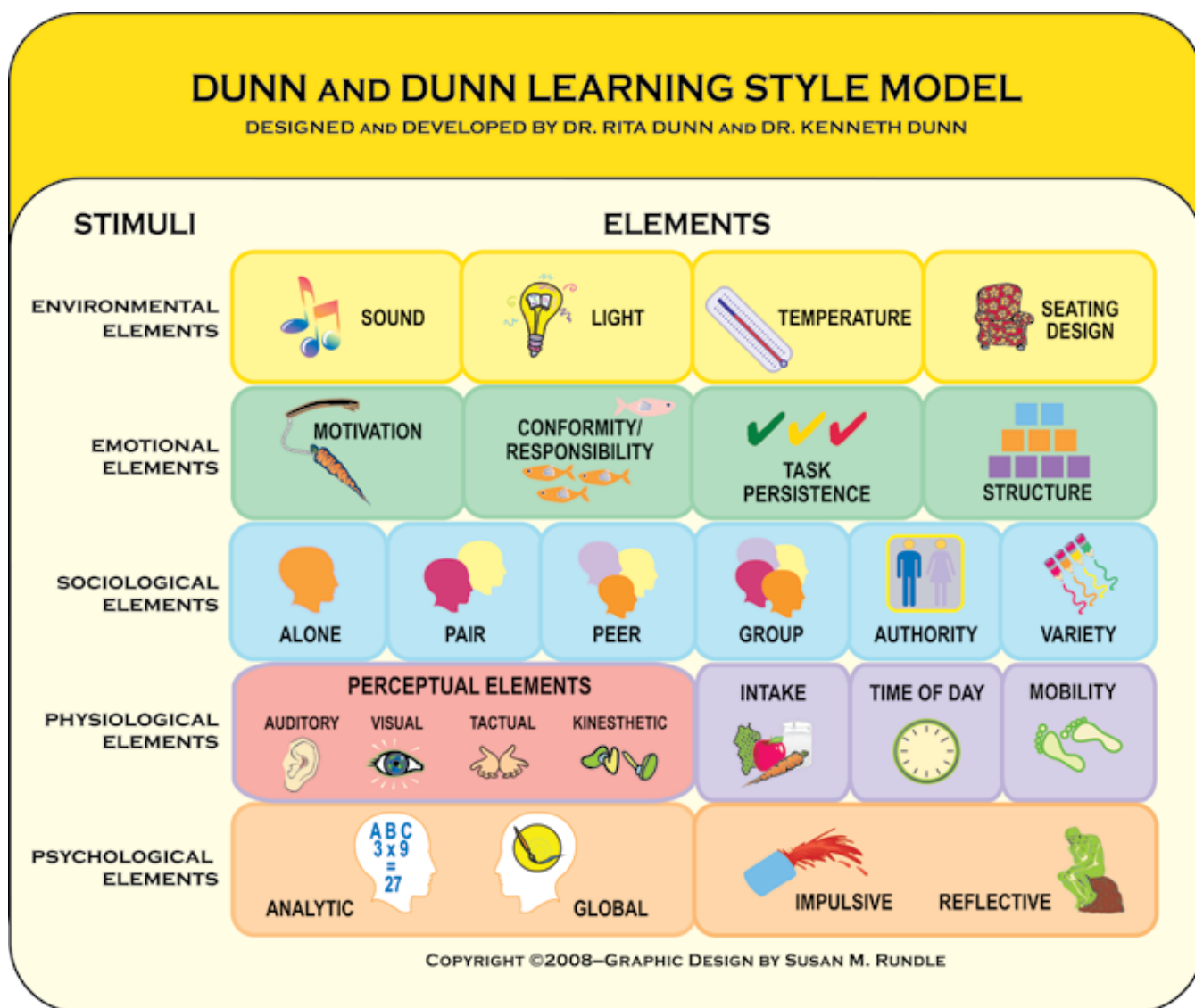
does not require teachers to do much beyond administering a diagnostic learning-style assessment and sharing the computer-generated homework prescriptions with students. The students do the bulk of the work themselves, thereby gaining more academic independence and self-confidence.

A Learning-Style Model

Homework prescriptions shown to improve student achievement have focused on selected aspects of the Dunn and Dunn Learning-Style Model, in which *learning style* is defined as the way each individual begins to concentrate on, process, internalize, and retain new and difficult information (Dunn, Dunn, and Perrin 1994). This model consists of five strands of learning-style elements (see Figure 1). Within each strand, four or more elements are identified.

The *environmental elements* address learners' preferences for sound, light, temperature, and seating design. Environmental elements can be manipulated with ease by teachers in classroom settings and by students and caregivers at home. The *emotional elements* examine students' levels of motivation, responsibility (conformity versus nonconformity), persistence, and need for structure. These learning-style variables are particularly appropriate for accommodating students with exceptional learning needs, such as attention deficit disorders, and gifted and talented student populations. The *sociological elements* focus on students' preferences for learning alone, in pairs, in groups (with peers), working with or without a collegial or authoritative adult, or their preferences for a variety of these elements. The sociological elements

Figure 1. The Dunn and Dunn Learning-Style Model



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refer to grouping strategies educators can implement according to learning style during classroom instruction and students can apply while studying.

The *physiological elements* identify students' perceptual strengths (auditory, visual, tactual, or kinesthetic), time-of-day energy levels, and preferences for intake and mobility. At times, the term *perceptual modalities* is mistakenly used synonymously with learning styles. However, these modalities comprise only a small percentage of the elements of the Dunn and Dunn Learning-Style Model that affect how people learn. Within the *psychological elements*, the hemispheric informational processing styles of learners—global versus analytic and impulsive versus reflective—are assessed. Keep in mind that students who process data analytically, like students who process information globally, need instructional techniques that are appropriate for their styles.

What the **Research Says**

The advantages of diverse instructional strategies based on the learning-style preferences of students of all ages have been documented extensively in more than 40 years of research on the Dunn and Dunn Learning-Style Model (Dunn 2009). Multiple experimental research studies conducted with middle level students reported significantly higher scores on achievement tests when participants experienced instruction congruent with their learning-style strengths (Soliman 1993; Dunn and Geiser 1998; Dunn and DeBello 1999; Geiser et al. 2000/2001; Gremli 2000/2001; Farkas 2003). Several American schools have reversed poor academic achievement by providing failing students with instructional approaches responsive to their learning-style preferences (Dunn and DeBello 1999).

Many researchers and practitioners have examined the relationship of students' learning styles and study strategies. Dunn, Deckinger et al. (1990) found that students who studied according to their learning styles achieved statistically higher achievement-test scores than peers who were not provided homework prescriptions. Walberg (1991) also stressed the need for study strategies tailored to students' individual differences. Geiser et al. (2000/2001) concurred that the application of learning-style theory to homework practices allowed learners to individualize their methods of studying by taking advantage of their unique learning-style strengths.

I examined the effects of learning-style-based homework prescriptions generated by the globally formatted learning-style identification instrument *Learning Style: The Clue to You!* ([LSCY] Burke and Dunn 1998) on the achievement and attitudes of middle school learners in reading, mathematics, science, and social studies (Minotti

2005). Globally formatted assessment instruments are designed to appeal to global learners' processing styles by including graphics to support comprehension. Studying a population of parochial middle level students, I concluded that students who used the computer-generated, individualized homework prescriptions from LSCY to teach themselves through self-differentiation of study strategies improved both their achievement and attitudes as compared with students who received traditional classroom instruction without this instrument (Minotti 2005).

Despite these findings, relatively few students have access to teachers who either use learning-style responsive approaches or differentiate instruction effectively. This is unfortunate because even teachers reluctant to change their teaching style easily can use existing tools to provide computer-generated homework prescriptions designed for middle level students based on their identified learning-style strengths. Thereby, students can learn to capitalize on their learning-style strengths when tackling challenging content.

Discovering **Individual Learning Styles**

A vital initial step for practitioners interested in exploring methods of helping students to discover their individual learning-style strengths and preferences is to carefully reflect on their own teaching and learning styles. Teachers need to take the time to reflect on their own styles to help inform how they will guide students to discover their individual learning-style strengths and preferences.

Historically, students generally have been expected to adapt to the learning environment in a teacher-directed classroom and to learn the way they were being taught, regardless of whether the pedagogical strategies used were appropriate for them. In today's student-centered classrooms, teachers are armed with more research-based knowledge and techniques for accommodating the diverse learning styles and exceptional learning needs of modern students. One powerful strategy that teachers should not overlook is using individualized homework prescriptions to improve student achievement and attitudes.

As a next step, educators may consider an exploratory lesson about elements that affect how individuals concentrate on, comprehend, and process new concepts in the form of an interactive discussion, a read aloud about learning styles, or a critical thinking exercise about selected learning-style elements. The following account of how I structured my first learning-style responsive classroom as a third grade teacher might serve as a guide; by adjusting the content, strategies may easily be adapted for middle level learners. The description, which paints the larger picture of how students benefit from discovering their

unique learning styles, focuses on diagnosing students' learning styles and providing homework prescriptions—and might motivate educators considering implementation of learning-style based differentiation.

Though my initial learning-styles research (Minotti 2005) examined the effects of individualized homework prescriptions with a middle school population in a separate school district, I also explored effects of both learning-style responsive instruction and individualized homework prescriptions with elementary students when teaching my own third grade class that same academic year. The goal of the middle school research was to help school districts provide teachers unwilling to modify their teaching styles with strategies to help students differentiate for themselves through study habits, while the elementary level exploration was geared toward immediate translation of learning-style theory into practice in my own classroom to better serve my diverse population of students.

Learning Styles in Action

As a doctoral student, I was fascinated by the power of learning-style responsive instructional strategies and eager to implement everything I was learning from the vast research published on learning-style theory and practice. The Dunn and Dunn Learning-Style Model struck a chord with me because of its comprehensive nature, extensive research base, and variety of elements I could manipulate to influence how my students would learn. Though the Dunn and Dunn model (see Figure 1) lists more than 20 elements, I focused on just a few.

Having reflected on and discovering my own teaching and learning styles, I decided to share my experiences with my class. I discussed my similar challenges with homework and studying as a young learner and how I found solutions to overcome them. The students were interested, and these exchanges generated a positive rapport. As we shared stories with one another, a mutual respect developed. My students recognized my level of commitment to and concern for helping them maximize their learning potential.

Subsequently, I read aloud two storybooks about learning styles to help students identify with and relate to characters in the books who learned in a variety of ways, perhaps similar to their own learning styles. The joy of witnessing students' realizations that it was perfectly fine that they didn't learn the same way as their peers or family members was inspirational. After exploring with the class various elements that affect how people learn, I administered the globally formatted, computerized diagnostic assessment appropriate for third graders, entitled *Our Wonderful Learning Styles* (Guastello and Dunn 1998), and individually shared with each student

the homework prescriptions generated by the students' responses to questions about how they learned best.

Afterward, I created a classroom environment that would address the diverse learning styles of my students. I shared with the students and their families the types of accommodations I would make in our learning-styles classroom—from environmental elements such as sound, light, temperature, and seating design to physiological elements such as perceptual modalities and time-of-day energy preferences to grouping strategies for learning activities. Starting with environmental elements, I adjusted classroom lighting to have bright and low light areas and created quiet learning centers through use of silencing headphones that mute noise.

In contrast, I also created places with background noise or instrumental music for students who needed sound while learning. Further adjusting the environment, I addressed comfort by allowing students to wear layers for warmth or to sit near an open window or air conditioner for cooler temperatures, as well as established informal seating using bean bag chairs. To respond to students' perceptual preferences, I created tactual and kinesthetic self-checking instructional resources (see Figures 2 and 3). What a difference these small steps made! Additional suggestions are available at www.learningstyles.net.

Figure 2. Vocabulary Flip Chute



For a tactual experience, students construct vocabulary cards, insert them into *Count Vernacular, the Vocabulary Vampire*, and retrieve the definitions on the reverse side of the cards. The cards turn over inside the flip chute and pop out to display the answer.

Figure 3. Fiesta of Facts Floor Game



For kinesthetic learners, a large game board created on a vinyl shower curtain allowed students to be the game pieces and move around the board in response to question cards, which also specified movements such as hopping or turning around.

The children affectionately referred to our classroom as *The Land of Learning Styles, Home to Miles of Smiles!* A banner bearing this title adorned our classroom door, supporting this transformational experience and demonstrating the power of starting with small and simple steps to implement change. A few minor accommodations on my part, in conjunction with encouraging and allowing students to use their preferred modes of learning in class and during homework, were extremely effective.

When word spread about the positive changes happening in my classroom, teachers were anxious about changing their teaching styles or taking on additional work as these students progressed to fourth grade. I assured teachers that the reality would be just the opposite! The beauty of the situation was that the students already would be able to differentiate, when necessary, for themselves.

Implementing **the Strategy**

Even without making such accommodations, elementary and middle school teachers can provide significant support for students by merely explaining the concept of learning styles; administering the appropriate diagnostic assessment—either the newest elementary tool entitled the *Elementary Learning Style Assessment* (Dunn, Rundle, and Burke 2007) for grades 2–4 or *Learning Style: The Clue to You!* (Burke and Dunn 1998) for grades 5–8—and sharing the homework prescriptions with students.

Students then can implement the appropriate study strategies on their own at home. Ideally, teachers would accommodate as many learning style elements as possible in the classroom and incorporate creative daily instructional planning through tactual and kinesthetic resources or visual aids that support students' perceptual strengths.

Using the individualized homework prescriptions, students can learn how to differentiate for themselves, a vital skill that they can take with them throughout their schooling. Equally valuable is students' enlightenment regarding how they learn. Regardless of students' learning styles and pedagogical strategies used, students' individual learning styles enable them to learn and realize nothing is wrong with others who learn in any particular style; but rather everyone learns differently. I observed learners demonstrate increased levels of patience knowing that, though one activity wasn't their preferred mode of working, it was appropriate for a peer. They recognized why I made certain instructional decisions and that the time would come for their preferred mode of learning—which enhanced classroom management and a sense of community and teamwork in our classroom. Understanding how classmates learned led to a heightened sense of compassion and acceptance of diversity among the students. A little extra initial effort made my job easier in the end.

Overcoming **Challenges**

Educators teaching elementary and middle level students can better meet the challenges of differentiating instruction for diverse learners by embracing learning-style responsive instruction and taking the time to identify their students' individual learning style strengths and preferences. The results are powerful. This instructional model has great potential to change the lives of struggling students.

Improving student learning through this model can work even when teachers do not adapt their teaching styles, though that would be the goal. In the end, students must be responsible for their own learning, so why not empower them to become proactive in differentiating their own instruction through use of individualized homework prescriptions? With effective staff development and training by school districts, along with the right tools, teachers can accommodate their students' learning-style strengths.

Of course, a promising first step would be to train future educators to implement differentiation techniques through use of individualized learning-style-based

homework prescriptions. With this knowledge, teachers then enter classrooms with the skills and tools for creating an environment of equal opportunity for all of their students. Teacher education programs should seriously consider including such pedagogical techniques in course curricula to prepare future educators in providing support through differentiation to middle level learners with diverse learning needs. While this strategy has been effective in middle level education courses I teach, including practical applications for learning-style responsive pedagogical techniques also has proven beneficial for teacher candidates earning certification to teach grades 1–6.

Closing Thoughts

Students experience a plethora of teaching styles and pedagogical techniques throughout their years of schooling. The vast body of quality experimental studies regarding the effects of matching students' individual learning styles with complementary instructional methods consistently evidenced positive results. However, at some point during their educational careers, many students have found themselves in classrooms where the teaching strategies did not match their learning-style strengths. In such scenarios, the degree to which learners mastered effective homework techniques and study skills determined how well they adapted to and overcame what potentially could have been devastating situations for them. In essence, these students differentiated instruction for themselves. However, if more learners were taught how to study and complete homework assignments effectively using their unique learning-style strengths, adapting and teaching themselves the content would come more readily when teaching and learning styles do not match. What a precious tool for success for students to rely on as they pursue higher levels of education!

Before this type of positive change can take place, teacher education programs need to provide as much support as possible to teacher candidates as they prepare to enter the classroom. In addition, practicing teachers should cultivate and promote self-esteem by teaching students how to be successful (Dyrness and Dyrness 2008). Teaching study and homework skills allows educators to connect with adolescents by honoring the diversity in how they learn and nurturing their unique talents (Checkley 2004). When given the right tools they need to succeed, students can become active participants in their own educational journeys rather than passive learners.

For 12-year-old Olivia, the best rewards gained from using her individualized, learning-style-based homework prescription were her renewed sense of self-confidence and reduced levels of frustration and anxiety surrounding homework assignments and studying. Discovering her own emerging learning-style strengths and preferences, as well as realizing there was nothing wrong with her despite not being able to learn well the way she was being taught or to fit into the traditional study habit mold, was quite empowering for her. She began to enjoy—yes, enjoy—homework again! She felt supported and relieved that her teachers and family acknowledged her unique learning style, which created a welcomed opportunity to connect with and relate to her family during this bumpy period of development and transition in her life.

Her individualized homework prescription became a recipe for success that she would take with her going forward in future grades. For her teachers and family, the prize was the much needed boost to her self esteem and the return of the light in her eyes reignited by her renewed joy for learning. As educators, we can give learners no better gifts than the ability to believe in themselves and a true love for learning. ■

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