

Dunn and Dunn: School-Based Learning Styles

One of the oldest and most widely used approaches to learning styles is that proposed by Rita and Kenneth Dunn (1978, 1992a, 1992b, and Dunn, 1986). Through their work in schools, they observed distinct differences in the ways students responded to instructional materials. Some liked to learn alone, while others preferred learning in groups or from a teacher. Out of this preliminary work, they identified five key dimensions on which student learning styles differed: 1) environmental, 2) emotional support, 3) sociological composition, 4) physiological, and 5) psychological elements. The separate elements within each dimension are found in Table 1 and summarized below.

Table 1 Dunn and Dunn's Learning Style Dimensions

Dimension	Elements	Key Questions
Environment	Sound Light Temperature Seating Design	Do students prefer a noisy, busy, well lit, warm environment or a quiet, subdued, cooler environment? Should the learning environment be formal (e.g. desks and chairs) or informal (e.g. pillows)?
Emotional	Motivational support Persistence Individual Responsibility Structure	Do students need a lot of emotional support? Will they persist on learning tasks? Can they assume individual responsibility? Do they need lots of structure?
Sociological	Individual Pairs or Teams Adult Varied	Do students learn best alone or working with someone? How much guidance from adults do they want or need?
Physiological	Perceptual Intake	Is the student an auditory, visual, tactual, or kinesthetic learner?

	Time Mobility	Does the student like to snack while learning? When is the optimal time for learning? Does the student require freedom to move during learning?
Psychological	Global Analytical Impulsive Reflective	How does the learner attack problem, globally or analytically? Does the student jump into problems or pause to reflect before starting?

In terms of the environment, the Dunns noted that students differed in terms of their definition of an ideal place to learn. Some wanted a warm, brightly lit place with desks, many people, and much verbal interaction, while others preferred cooler, more subdued lighting with a quieter, more informal environment. Though many teachers believe that they have little control over these elements, Dunn and Dunn describe how the standard square box of a classroom can be partitioned into separate areas with different environmental climates.

The emotional dimension centers around the extent to which students are self-directed learners. At one end of the continuum are self-starters who can be given a long-term project and who monitor and pace themselves until finishing the job. At the other end are students who need considerable support and have to have their assignments in small chunks with periodic due dates. Semester-long projects without periodic checks would be disastrous with these students. Understanding your students' apparent needs for support allows you to design learning experiences that help students succeed and learn more effectively.

Students also differ in how they react to peer interaction. Some dislike group projects, preferring instead to learn by themselves; others thrive on the companionship

and support provided by group work. Still others prefer the more traditional approach of learning from an adult. You can capitalize on these preferences by varying your teaching techniques based on different learning configurations.

Another important dimension identified by the Dunns relates to individual differences in terms of physiological preferences. Probably the most important element here is learning modality; some of us are visual; others prefer auditory channels. Mobility, or the ability to periodically move around, is another element here. Another important element in this dimension is time. Some of us are morning people, while others don't function fully until later in the day. Teachers accommodate this dimension when they set up learning centers that allow student movement. This dimension may be one of the hardest for teachers to accommodate. What do you do if you teach a class of afternoon people at 7:45 in the morning?

A fifth, and final learning style dimension is psychological. This dimension refers to the general strategies students use when attacking learning problems. Some attack them globally, looking at the big picture, while others prefer to address individual elements of a problem separately. In a similar way, some students jump into problems, figuring things out as they go along, while others are more reflective, planning before beginning.

Developmental research suggests the following trends in terms of learning styles.

- When children come to school they are basically parent/adult motivated.
- Thirty years ago students became more peer motivated by the seventh grade. Studies show that students today move toward being peer motivated

by third or fourth grade. By ninth or tenth grade students move toward being self-motivated.

- Under achievers tend to remain peer motivated even into their late teens.
- Most young children are kinesthetic and become more tactical in or about the first grade.
- Auditory and visual skills develop during the early elementary years.
- Significant portions of children in grades K-12 have trouble with a conventional, row-based classroom design.
- Younger children (K-6) need more structure than older students.
- Time of day preference changes over time: 28% of K-2 are morning learners in comparison to 30% of middle grade students, 40% of high school students, and 55% of adults.

One reason for the popularity of Dunn and Dunn's categorization system is that it was generated by classroom experience and therefore has considerable ecological validity. As mentioned in the text, a major question around learning styles is how the teacher should use them. Should the teacher attempt to match instructional learning environments to each individual student, or teach students to adapt their learning styles to match different learning situations? These are difficult questions for teachers.

References

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