http://www.ncrel.org/sdrs/areas/issues/students/learning/lr100.htm



**Critical Issue: Building on Prior Knowledge and Meaningful Student Contexts/Cultures**

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**ISSUE:** Students learn more effectively when they already know something about a content area and when concepts in that area mean something to them and to their particular background or culture. When teachers link new information to the student's prior knowledge, they activate the student's interest and curiosity, and infuse instruction with a sense of purpose.

Alice Moses, Program Director of the National Science Foundation, talks about the importance of building on children's prior knowledge by incorporating hands-on experiences in science instruction. [Audio file, 243k] Excerpted from the video series *Restructuring to Promote Learning,* videoconference #2: *The Thinking Curriculum* (NCREL, 1990).



**OVERVIEW:** [Prior knowledge](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1pk.htm) acts as a lens through which we view and absorb new information. It is a composite of who we are, based on what we have learned from both our academic and everyday experiences. (Kujawa and Huske, 1995)

Students learn and remember new information best when it is linked to relevant prior knowledge. Teachers who link classroom activities and instruction to prior knowledge build on their students' [familiarity](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1fam.htm) with a topic (Beyer, 1991) and enable students to [connect the curriculum content](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1ccc.htm) to their own [culture](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1culta.htm) and experience.

[Alice Moses, Program Director of the National Science Foundation, calls on students' prior knowledge during a third-grade science lesson on magnetism.](http://www.ncrel.org/sdrs/areas/issues/students/learning/moses.mov) [QuickTime slide show, 720k] Excerpted from the video series *Restructuring to Promote Learning,* videoconference #2: *The Thinking Curriculum* (NCREL, 1990).

Prior knowledge influences [how the teacher and students interact with the learning materials as both individuals and a group.](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1how.htm) It is the proper entry point for instruction, which should build on what is already known, and a major factor in comprehension--that is, making sense of our learning experiences. (Kujawa and Huske, 1995)

Teachers can use [class discussions](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1jungl.htm) and [graphic organizers](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1grorg.htm) to activate and illustrate students' prior knowledge. Such dialoging and visualizations also encourage students to [think about their thinking](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1thth.htm) (What do I do in a particular situation and why?), transferring the thought process to a conscious level.

By tapping their students' prior knowledge in all subject areas, teachers can plan lessons that will: clarify incomplete or erroneous prior knowledge, determine the extent of instruction necessary in a particular topic area, and discern necessary adjustments to planned independent activities and assessment materials. (Kujawa and Huske, 1995)

Teachers also can use prior knowledge to make instruction more meaningful. Many researchers (Peshkin, 1992; Protheroe & Barsdate, 1992; & Lee, 1992) emphasize the importance of incorporating parallels between a student's [cultural background](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1cult.htm) and the curriculum's design. As the world changes, students must learn to understand and appreciate the experiences and contributions of people from different backgrounds. A [culturally responsive education](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1cre.htm) links curriculum, instruction, and assessment to the students' experiences, language and culture, in other words, to their prior knowledge.

Hubert Dyasi, director of the City College Workshop Center, New York, NY, talks about the importance of a cultural frame of reference to a child's prior knowledge, group standing, and self-esteem. [Audio file, 408k] Excerpted from the national videoconference *The New Definition of Learning, The First Step for School Reform* (NCREL, 1990).

The challenge is to find the knowledge and practices in family and community life that have a common orientation with what the schools seek to teach. [Luis Moll](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1luis.htm) and his associate's research on "funds of knowledge" finds just such a relationship in Hispanic communities; other researchers find application in different cultural settings (Au, 1992; Gay, 1994).

[Luis Moll, Associate Professor in the College of Education at the University of Arizona, describes how one teacher has created a productive classroom environment by blending traditional educational activities with the cultural influences his students receive at home.](http://www.ncrel.org/sdrs/areas/issues/students/learning/moll.mov) [QuickTime slide show, 585k] Excerpted from the video series *Restructuring to Promote Learning in America's Schools,* videoconference #3, *The Collaborative Classroom: Reconnecting Teachers and Learners* (NCREL, 1991).

Finally, understanding the student's abilities is as important to effective instruction as selecting the appropriate instructional materials.The Vygotskian (1978) notion of ["zone of proximal development"](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1zpda.htm) suggests there is an optimal challenge level for learning, one that is neither too difficult nor too easy and meaningful to the learner beyond the classroom. Thus, teachers should [direct and guide](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1dirgd.htm) the student through the instructional task until he or she can successfully complete it without any help. [Palincsar and Brown](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1pali.htm) approach instruction in a similar way, encouraging within the classroom the type of natural instructional dialogue that occurs between children and adults outside of school.

**GOALS:**

* All students are able to connect new learning to their prior knowledge and experience.
* All teachers relate new learning to students' everyday lives and culture.

Beverly J. Armento, Professor of Social Studies at Georgia State University in Atlanta, explains the importance of including multiple voices and perspectives in the social studies curriculum. [Audio file, 405k] Excerpted from the video series *Restructuring to Promote Learning,* videoconference #2: *The Thinking Curriculum* (NCREL, 1990).

* Administrators, school board members, parents, and other members of the school community support an integrated curricula rooted in active, meaningful instruction that activates prior knowledge.

**ACTION OPTIONS:**

* Engage students in meaningful activities that incorporate prior learning.
* Use a wide variety of learning activities that reflect the students' cultural diversity and the capacity for [multiple intelligences.](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1mult.htm)
* Use [graphic organizers](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1grorg.htm) to help students activate their prior knowledge and use it to facilitate learning.
* Use [heterogenous grouping](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1hete.htm) and [cooperative learning](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1coop.htm) to facilitate the sharing of prior knowledge and engage students in their own learning.
* Involve community members and a variety of rich resource bases that reflect varied cultural expressions to help develop instructional tasks and to suggest authentic assessment measures by which to gauge student achievement.



**IMPLEMENTATION PITFALLS:** Teachers must not confuse familiarity with knowledge or in-depth understanding. They must constantly evaluate their instruction to ensure they are building on what their students know, not just "giving information." In addition to activating prior knowledge, teachers must help correct any misconceptions or stereotypes in the students' understanding.

Schools also must establish clear goals and standards, as called for in the [Goals 2000: Educate America Act,](http://www.ncrel.org/sdrs/areas/issues/envrnmnt/stw/sw0goals.htm) and use [authentic](http://www.ncrel.org/sdrs/areas/misc/glossary.htm#authentic) measures to assess student performance. It is difficult, if not impossible, to assess complex thinking and problem-solving skills using traditional measures such as standardized tests. [The trend in assessment](http://www.ncrel.org/sdrs/areas/stw_esys/4assess.htm) is toward alternative measures that provide opportunities for students to demonstrate cultural connections, to elaborate on central, integrative themes, and to explore new meanings and relationships in generative or dynamic ways.



**DIFFERENT POINTS OF VIEW:** Some educators view knowledge development as cumulative. They prefer an instructional philosophy that deals with less integrated pieces of knowledge, as reflected in the "back-to-basics" approach. Other educators believe in a standardized school program that emphasizes a common core of knowledge and does not include personalized, culturally-oriented understanding. They often use standardized instructional programs such as basal readers and textbooks.

**ILLUSTRATIVE CASES:**

[DuSable High School](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1dusa.htm) uses graphic organizers to activate students' prior knowledge.

[Kamehameha Early Education Program](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1thek.htm) draws on strengths of the Hawaiian culture.

[Professional development](http://www.ncrel.org/sdrs/areas/issues/educatrs/leadrshp/le4pppd.htm) programs help teachers activate students' prior knowledge and real-life experiences.

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[References](http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1refer.htm)

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