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Infusing Thinking Through "Connections"

"Connections" integrates thinking strategies into the classroom that are transferable not only between subjects, but to the real world.

In recent years teaching thinking has taken the form of "thinking lesson" capsules injected into daily lessons as a grab bag of skills difficult to integrate with daily instruction. Most educators now agree, however, that the teaching of thinking should be woven into the regular curriculum, rather than treated as a separate subject.

"Connections," now being tested in classrooms, is a program to help teachers reshape instruction so that the teaching of thinking is infused into all subjects routinely. This approach makes sense for two reasons. First, it permits thinking to be incorporated into instruction without adding another course to an already crowded curriculum. Second, it sends a message to teachers and students that good thinking is present in everything we do, not just in isolated periods of time designated for thinking.

Thinking Strategies

The heart of the Connections approach is a set of carefully designed thinking strategies. A strategy is a three- to five-step process that guides the learner in accomplishing fundamental thinking goals, such as decision making, problem solving, communicating, and understanding.[1]

Connections introduces a strategy to students in a kickoff lesson that takes 30–60 minutes, then guides the teacher to infuse the strategy into the regular lessons. Students work mostly in small groups of two or three to apply the strategy to what they are studying. This group work gives them an opportunity to express their ideas and discuss issues with peers.

Decision Making

As an example of how the Decision Making strategy works in the classroom, Carl Farber selects an important turning point in history: Truman's decision to drop the atomic bomb. After his 5th grade history students read in their texts about the bombing of Hiroshima, Carl guides them in applying the Decision Making strategy to Truman's choice of whether or not to drop the bomb.

The class reviews the three steps of the strategy: (1) find creative options, (2) list reasons for and against the most promising options, and (3) make a careful choice. Imagining themselves in Truman's place, the students come up with two options: dropping the bomb and not dropping the bomb. Then they think of creative options, such as negotiating a peaceful settlement through a summit, surrendering, and sending more troops to the battles in Japan.

Next, students choose a few options and list pros and cons for each. For example, dropping the bomb might stop the war and result in our winning the war. On the other hand, the bomb would destroy Hiroshima and many lives; it might not actually end the war; and it would introduce to the world a dangerous new weapon.

When they complete their list of pros and cons, students weigh both arguments for and against the most promising option and make the "best" choice. Having imagined themselves responsible for the decision, the class returns to discussing what had actually happened with an increased awareness of the issues involved in Truman's decision

During the following weeks, Carl uses the same strategy in other history lessons and in other subjects. While studying *Huckleberry Finn*, for example, he has the class examine Huck's decision to run away from home. Later he has students select a decision point from their own lives. One student uses the strategy to decide what after-school sport to play; another uses it to decide whether to attend a friend's birthday party, which is on the same day she had planned to visit her grandmother.

Infusion Elements

This classroom example illustrates three elements essential to successful infusion:

1. *Strategies are designed simply so students can learn them easily.* Students understand the strategy as a process for helping them with a familiar problem—making good decisions.

2. *Teachers can easily integrate the thinking strategy into and across the curriculum.* The strategy, in this case Decision Making, is so straightforward that the teacher finds many opportunities to incorporate it into daily lessons. Connections does, however, give explicit directions and examples to help teachers apply all strategies in a variety of subject matters.

3. *Strategies can be easily transferred to many contexts both in and out of school.* Students practice apply-

ing the strategy to a variety of subjects and situations. Their use of the strategy in small groups and individually helps them to use it independently in relevant contexts.

Understanding Through Design

As another example of how Connections works, Augusta Kingsley uses the Understanding Through Design strategy in her 3rd grade science class. The Understanding Through Design strategy is a step-by-step method of comprehending the relationship between the purpose of something and its structure. This strategy has four steps, which are taught during the kickoff lesson: (1) name and example, (2) purpose, (3) structure, and (4) reasons.

Augusta's class is studying the anatomy of flowers. During the lesson, Augusta asks the students to review the steps in the strategy. Beginning with the first step, she asks the class to name different kinds of flowers. Since they are growing petunias and geraniums in the classroom windows, they are able to see examples of flowers, as well. Next the students break into groups of three to explore purposes and structures of flowers. They ask themselves: What is the structure of a flower? What is it made of? Are flowers designed in a certain way to fulfill a purpose? What are the reasons that connect the purpose to the structure? Are any flowers poorly designed for their purposes?

Augusta circulates throughout the room to observe the groups and to provide assistance where necessary. Several groups then report their ideas to the class. Augusta notes the occasions when students support the relationships between the purposes and the structures of a flower with good reasons. For example, one group suggests that petals are designed to close around the pistil at night to protect the plant's delicate insides from the cool night air.

Augusta thinks that since her students' interest is captured and they are thoughtful and imaginative with the information, it will be easy to use the Understanding Through Design strategy in other subject areas. In particular, she looks forward to applying the strategy to the upcoming social studies/language arts unit on mythology.

Simple But Effective

Can an infusion approach to teaching thinking really be as straightforward as this? Yes, because Connections provides a cohesive process for pulling together the three infusion elements. It is an effective model for reshaping the way teachers teach so that careful systematic thinking is integral to all that is taught in schools.□

1. A partial list of the strategies being developed by Connections include: Decision Making, Understanding Through Design, Inventive Problem Solving, Knowing What to Believe, Memorizing and Recalling, Communicating, Cause and Effect Relationships, Inventing and Composing, and Inferring and Calculating.

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Suggested Readings

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