

Introduction

THE WHAT AND WHY OF TRANSFER

What is Transfer?

Later, we will give a fuller definition of transfer. But the basic idea is pretty straightforward. Transfer means learning something in one context and applying it in another. For example:

- You learn to drive a car (that's the first context). Then, for a move, you rent a small truck and find that you can manage to drive the truck fairly well (that's the second context).
- You learn some strategic reading skills in English class (that's the first context). Then, later, you use the same skills in social studies (the second context).
- You learn a foreign language, say French (the first context). Later, you study Italian and find that you can carry over some particular vocabulary *and* some of the general ideas about mastering a language (so learning Italian is the second context).
- You learn how to manage squabbles better by sorting through years of fighting with a sibling (the first context). Later in life, you find the same skills useful in managing social relations on the job (the second context).

Ordinary learning contrasts with transfer. In ordinary learning, we just do more of the same thing in the same situation. To use the above examples, we drive the car some more. We use the reading strategy some more in English class. We speak French some more in French class. We continue to squabble with our siblings.

Of course, any situation is a *little* different. Today's squabble with a sibling is not exactly like yesterday's. In that sense, any learning involves a little transfer. But not an interesting amount. Real transfer happens when people carry over something they learned in one context to a "significantly different" context.

Why is Transfer Important in Education?

Transfer is important in education because of something very simple. We need plenty of transfer for education to have the impact we want.

For instance, why do we teach reading? So that students can continue to read in English class only? Certainly not. So that they deploy those skills—and *want* to deploy them—in different subject matters, and out in the world, reading newspapers, novels, job application forms, repair manuals, whatever people need to read. These are importantly different contexts. Various subject matters have their own reading demands. Think how different a story, an essay on a period in history, and a section in a math book explaining a concept are. And, outside of school, newspapers, stories, and other forms of text also have their idiosyncrasies.

Or consider mathematics. Here again, we want students to *use* their mathematical knowledge in other contexts—physics class, the supermarket, home carpentry, engineering professions. Or consider history. We want students to think historically not just in history class, but in studying literature, so that they see stories, novels, and poetry with an historical perspective; and in thinking about current events, so that they understand better the events unfolding in today's newspapers.

Basically, education that does not achieve considerable transfer is not worth much! Students may be playing the school game class-by-class. But, without transfer, they are not taking out of each class much that is going to serve them well anywhere else.

Why Worry About Transfer in Education?

Some important things take care of themselves. Breathing is important!—But it takes care of itself unless you have special medical problems.

Unfortunately, transfer does not take care of itself. Research shows that often students do not spontaneously transfer what we would like them to. Students do not use the mathematics from math class in physics class, the supermarket, home carpentry, or even engineering. Teachers of physics or engineering often say that students have to re-learn

their math in those subjects. Students often do not use good reading strategies they have learned in English in other settings. And so on.

The moral: If we want transfer in education, we have to teach for transfer. Otherwise, we are not going to get nearly as much transfer as we want. It's as simple as that. And as complicated! And that's what this book is about, teaching for transfer.

KEY IDEAS ABOUT TRANSFER

The pages of this book pay repeated attention to three key ideas—the *some things*, *some hows*, and *some wheres* of transfer. Here we will preview these ideas. But first, it's worth beginning with an even larger idea, what might be called the “spirit” of transfer.

The Spirit of Transfer

The spirit of transfer is beautifully captured by this passage from Oliver Wendell Holmes, who writes of “the three-story intellect.”

There are one-story intellects,
two-story intellects,
and three-story intellects with skylights.
All fact collectors who have
no aim beyond their facts
are one-story men.
Two-story men compare, reason,
generalize, using the labor of
fact collectors as their own,
Three-story men idealize,
imagine, predict—
their best illumination comes
from above the skylight.
—Oliver Wendell Holmes

Although Oliver Wendell Holmes did not write his passage specifically about transfer—and probably never heard of this slightly technical concept from the psychology of learning—certainly his notion of the three-story intellect expresses our aspirations for transfer. Mere fact collectors are not transferring at all. Those who compare, reason, generalize, are going further. And those who idealize, imagine, predict are truly reaching out.

FINDING THE “SOMETHINGS” OF TRANSFER

“If it’s not worth teaching, it’s not worth teaching well.”—Eisner

The *somethings* of transfer are what you teach that can help students to transfer more broadly. The *somethings* are math skills, reading skills, vocabulary, historical knowledge. The *somethings* are knowledge, skills, concepts, attitudes, principles—anything you now cultivate in your students in a specific context, a specific subject matter.

Armed with the critical question, “Why am I teaching this?” You are encouraged to make thoughtful decisions about what you spend your time teaching. “Does it have transfer potential? How can students use it in other situations?” If the answer is negative, “Why am I teaching it? Maybe I should be teaching another topic!” If the answer is positive, “How can I be sure to teach it for transfer, so students will use it widely?” These are the questions asked as one seeks the *somethings* of transfer.

LEARNING THE “SOMEHOWS” OF TRANSFER

‘There is no easy road,’ Seneca wrote, ‘from earth to the stars: no road, that is, except the human mind.’—Norman Cousins

After exploring what’s worth teaching for transfer, we confront the next natural question: *How* do you teach for transfer? Of course, most teachers already teach for transfer intuitively in some ways. They take opportunities to help students to make connections. But this is not the same as a systematic and persistent approach to teaching for transfer.

We devote chapter two to the *somehows* of transfer. The first part talks about “hugging” strategies for teaching for transfer. The basic idea of “hugging” is simple; you make your instruction “more like” the contexts to which you want transfer. That is, you “hug close to” those contexts. You can do this by setting students’ expectations for transfer, simulating situations realistically, modeling so that students see what applications are like, and in other ways. The transfer that then occurs is fairly automatic for students, built into the learning experience.

The second part of chapter two focuses on “bridging” strategies. “Bridging” means helping students to make connections that require them to abstract and reflect—very much like Oliver Wendell Holmes’ third story. You can do this by introducing analogies and helping students to think them through, getting them to reflect metacognitively on their own thinking, and in other ways. The transfer that occurs is aware and thoughtful.

TARGETING THE “SOMEWHERE” OF TRANSFER

“Our mission as educators is to help every child become a more active, engaged, committed, and skillful learner, not just for a test, but for a lifetime.”—James Bellanca

The *somewheres* of transfer are the contexts we transfer *to*. Of course, in talking about the *somethings* and *somehows* of transfer, we already have been reflecting to a degree on those *somewheres*. But in the chapter focused on *somewheres* we think in a closer, more systematic way about them.

To target the *somewheres*, you as a teacher have to think about how the *somethings* might be used *within* the original content area, *across* to other disciplinary areas, and *into* life situations. Also, after targeting the *somewheres* you can seek evidence that transfer actually is occurring! There are many degrees of transfer, from students duplicating what they’re taught (which is learning in the narrowest sense) to students innovating flexibly in their application of what they have learned (that third story of Oliver Wendell Holmes again).

By becoming aware of transfer, finding the *somethings*, using the *somehows*, and targeting and tracking the *somewheres*, you can make transfer a lot more likely to happen. Teaching for transfer is teaching for a lifetime!

WHY BOTHER WITH TRANSFER?: A RATIONALE

All teaching is for transfer. All learning is for transfer. It’s that simple. Yet, considerable research shows that a startling amount of the knowledge that people acquire in subject matter instruction is “inert.” This means that the knowledge is “there” in memory for the multiple-choice quiz, but the knowledge is passive. It is not retrieved in contexts of active problem-solving or creativity, such as writing an essay.

So inert knowledge does not really contribute much to the cognitive ability of the learner except for performance on school quizzes. One of the goals of teaching for transfer is to instill active rather than inert knowledge. To extend learning, to bridge the old to the new, and to lead students toward relevant transfer and use across academic content and into life situations, is, then, the mission of the thinking classroom.