Learning Transfer Thinking

Idea In Short

Organizations spend heavily on training and then wonder why behavior at work barely changes. The gap is a transfer problem: people learn something in one setting and fail to use it in another. Psychologists have studied this failure for decades, and one famous experiment showed that college students could solve a hard medical puzzle with help from a military story, but usually did not notice the link unless someone gave a hint. This article explains what blocks transfer, what helps it, and how leaders can design training, coaching, and daily routines so that knowledge travels from the classroom to the real problem.

A company trains its managers in a structured way to run difficult conversations. The class is lively, the ratings are high, and the managers leave with a one-page model. Six weeks later, almost none of them use it, and one admits that a hard talk with a direct report "felt nothing like the role-plays." The learning was real. The transfer never happened.

The puzzle of the missing link

Cognitive psychologists have studied this gap through analogical problem solving. In a classic 1980 paper, Mary Gick and Keith Holyoak had people read a military story and then solve a medical problem known as the radiation problem. The abstract reports that subjects who read the story tended to generate analogous solutions, provided they received a hint to use the story.1

The key phrase is "provided they were given a hint." Without a prompt, most people did not connect the two problems, even though the story contained the answer. They had the knowledge in memory, and they failed to bring it to bear.

This finding explains many training failures. People can understand an idea in class and still not recognize that a messy, real situation calls for it. Transfer needs a bridge, and the bridge is rarely built by chance.

Surface and structure

Later work asked why noticing is so hard. A paper by Holyoak and Koh in Memory and Cognition investigated factors that influence the retrieval and use of analogies, and it notes that college subjects often fail to use analogies spontaneously.2

The title points to the core issue. Problems share surface features, such as the same industry, the same tool, or the same people. They also share structure, meaning the same underlying relationships. Memory tends to retrieve by surface, while useful transfer depends on structure.

A pricing question in a software firm may resemble a staffing question in a hospital in structure, and look nothing like it on the surface. Unless someone trained to look for structure sits in the room, the connection stays hidden.

Context shapes recall

Another experiment studied how context affects transfer. In a paper that also appeared in Memory and Cognition, subjects read stories analogous to the radiation problem and later tried the problem in either the same or a different setting. In one experiment, transfer appeared in subjects who were prompted to use the earlier stories, while the solution rate of unprompted subjects did not differ from control levels.3

The lesson for organizations is direct. If the classroom and the workplace feel different, people may not link them. A training room, a workbook, and a facilitator form a context that disappears when the person returns to a crowded desk.

Leaders can reduce the gap by teaching with realistic materials, such as actual client emails or live data, and by holding follow-up sessions in the places where the work occurs.

Building general ideas from examples

A paper by Catrambone and Holyoak points to ways of making transfer more likely. It notes that there is evidence that providing multiple examples, even without explicit instruction in general rules, can facilitate transfer, and that Gick and Holyoak found likelihood of transfer increased with the quality of the schema that learners formed.4

A schema is a general picture of a problem type, such as "a strong force that would damage the target is split into weaker forces that converge." Learners build such pictures by comparing several cases and asking what they share.

For trainers, this means that one vivid story is not enough. Offer two or three cases from different fields and ask learners to state the common idea in their own words. The act of comparing builds the abstraction that later travels.

Where the field started

A recent review of analogical reasoning notes that modern work on using analogy to solve problems and learn causal structure began with the Gick and Holyoak studies of 1980 and 1983.5

That history is useful because the same principles keep appearing. People retrieve by surface similarity, they benefit from prompts, and they build general ideas from comparisons. These regularities give leaders a practical checklist for designing learning that moves. The checklist works for classroom courses, coaching, and onboarding alike. It also gives managers a shared vocabulary, so that they can discuss why a lesson did or did not stick.

Near problems and far problems

Not all transfer is equally hard. Applying a method to a problem that looks almost identical to the training case is easy, and most people manage it. Applying the same method to a problem from a different department, a different industry, or a different decade is far harder, because the surface gives no cue.

Leaders should decide which kind of transfer a program needs. A compliance course may need only near transfer, since the situations repeat. A leadership program usually needs far transfer, because the situations vary every time. The second goal demands varied cases, explicit comparison, and plenty of practice with unfamiliar settings.

Honest goal setting also saves money. If you need far transfer and you buy a course built for near transfer, ratings will be high and results will be flat.

Design principles for transfer

First, teach the principle with the example. State the idea in general terms, show it in a case, and then show it in a very different case. Second, vary the practice. Repeating the same exercise builds fluency in that exercise only.

Third, prompt explicitly. Ask, "Where have you seen a problem with this structure before?" and "What would you use from last quarter's project here?" These questions play the role of the hint in the experiments.

Fourth, practice in the real setting. Pair a lesson with a live assignment, so that the first use of the idea takes place under real conditions, with support nearby. Fifth, follow up. A short review after two weeks and again after two months keeps the idea alive and shows what blocked its use.

Coaching for transfer

Coaches can do what classrooms cannot, which is to meet people inside their real problems. A good coach asks the learner to describe a live situation, then asks which earlier lesson might apply and what would need to change. The conversation rehearses the hint-giving step that the experiments found so important, and it moves the person from recognizing an idea to using it.

Managers can borrow the same habit in one-to-one meetings. Ask what the person learned recently, where it could help this week, and what might get in the way. Write down the answer, and ask about it at the next meeting. Small, repeated prompts build the habit of looking for links without adding much work. Over several months, people begin asking the questions for themselves, which is the clearest sign that transfer has become a habit and not an event.

A hypothetical example

Imagine a hypothetical logistics firm that trains supervisors in root-cause analysis using a manufacturing case. Supervisors perform well in class but ignore the method when a delivery delay appears. A new learning lead redesigns the course around three cases from warehousing, customer service, and finance, and asks groups to name what the cases

share.

She also adds a ten-minute prompt at the start of weekly meetings: "Which problem this week has the same structure as one we solved before?" Within a quarter, supervisors start citing earlier cases in their own reports. The scenario is invented, yet it shows how variety, prompts, and local practice can raise use.

Cautions

Transfer is not guaranteed even with good design. Some skills depend on specific tools or contexts, and forcing a general method onto them can waste time. Test the idea in a small case before you rely on it.

Avoid false analogies. A comparison that matches on the surface and differs in structure can mislead. Ask what is different, and check whether the causes or constraints really match.

Finally, measure use and not satisfaction. Course ratings say little about behavior. Track whether people apply the method in real work, and adjust the design when they do not.

- 1Analogical problem solving
- 2Surface and structural similarity in analogical transfer
- 3Context-dependent effects on analogical transfer
- 4Overcoming contextual limitations on problem-solving transfer
- 5Analogical reasoning review (NSF public access)

Summary

Learning transfer thinking treats knowledge as something you must carry deliberately into new settings. Experiments on analogical problem solving showed that people often fail to use a relevant idea until prompted, that context shapes whether they notice it, and that learning from several examples builds more flexible mental models. Leaders can raise transfer by teaching principles, using varied cases, and asking explicit questions about where an idea applies. Pick one skill your team learned recently, name three situations where it could help, and plan one real use of it within the next month with a colleague who

can give you feedback.