Case-Based Learning: Accelerating the Path to Expert Performance

by Marty Rosenheck, Ph.D., CPT

Joan, a new claims representative for a large insurance company, has just completed a new-hire training program. She sits down at her desk and starts taking the first of many calls that day. She quickly begins to feel overwhelmed with the workload: working with the computer system, dealing with upset customers, trying to remember how to handle complex policy issues. Although these skills were covered in her training classes, Joan is overcome by the challenge of handling everything at once. She puts callers on hold to seek assistance from her supervisor and the colleague at the next desk. Callers become upset about the wait, and she knows she is making errors that will have to be corrected. Joan had done well in training, but she now feels quite unprepared to handle the real world complexities of her job.

Learning complex jobs such as claims rep, customer service rep, agent, or underwriter in the insurance industry can be very difficult. People in these roles need to coordinate:

- Policy, procedures, and program knowledge
- Customer service skills and interpersonal skills
- Systems skills
- Continuous learning and research skills
- Workload management and organizational skills

The real costs of achieving proficient job performance in complex jobs come after training is done. These costs are substantial, but are rarely measured. We all know they exist – and they can be huge.

- Those costs show up as:
- Sub-par productivity
- Mistakes
- Dissatisfied customers
- Time spent getting help from others
- Manager time reviewing and correcting work
- Attrition, due to people feeling unprepared or overwhelmed by their jobs

The goal of training is to produce highly proficient performers in as short a time as possible. Insurance companies invest substantial resources in training, yet many trainees find that when placed on the job, they can't perform without substantial help and support. It can take months or even years before they become proficient. That is because people develop expertise through experience with a variety of situations. This takes time that most of us do not have.

If we can reduce the time it takes to become expert or at least proficient performers, we can save our organizations a lot of money, increase retention rates, reduce errors, and improve customer satisfaction. How can we significantly accelerate the process of developing expert performers?

Case-Based Learning

The answer: provide them with a case-based curriculum. Readers of this publication may already know that case-based learning makes use of realistic situations to set the stage for learning.

Performance-Centered Learning is a particular case-based learning methodology that was developed based on research in cognitive science. When correctly implemented, this methodology accelerates the learning process and

creates truly expert performers. Trainees are systematically exposed to situations in a compressed timeframe that it would otherwise take years to experience. When trainees are exposed to a large number of cases, they construct a mental "library" of situations that they can call on when faced with a new situation. They can see how the new case is similar and different to those they've experienced in the past and adjust accordingly.

People become expert performers by

- Encountering a wide variety of experiences or cases
- Reflecting on their experiences – within a community of learners
- Accessing key information as they need it – at the teachable moment.
- Progressing from simpler to more challenging cases
- Beginning with substantial support and guidance and gradually reducing the degree of guidance
- Organizing and categorizing their experiences in a mental index so they can retrieve the right ones when needed.

We can move insurance trainees more quickly along the path to expert performance by designing such a case-based curriculum. This is different from traditional training, which is a "bottom-up" approach. The usual approach is to break down the content into small components, present each topic, practice it, and test.

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Conceptual and policy content, systems, customer service, and interpersonal skills are taught in separate modules. At the end of the process, trainees are asked to somehow put the pieces together.

By contrast, the case-based approach is a top-down process – trainees are almost immediately immersed in realistic and integrated case simulations. They get the information they need at the teachable moment – when they are primed to learn and use it. They are motivated to learn the content because they need it to move through the case. They are better able to apply the content on the job because the content is linked in their minds to the situations in which it is used.

Design Principles for Case-Based Learning

Over the years, we have developed a methodology for effective case-based learning that we call Performance-Centered Learning. This method is based on cognitive research on how people develop expertise. The key design principles are:

- Learning by Doing
- The Teachable Moment
- Scaffolding
- Simple to Complex
- Spiral
- Integrate Knowledge, Systems, Skills
- Community of Learners

Learning by Doing

The central element of Performance-Centered Learning is learning by doing. This is not a new idea. Confucius said thousands of years ago: *I hear and I forget. I see and I remember. I do and I understand.* Apprenticeship was the learning by doing model used for learning most trades in the past. Cognitive apprenticeship models were developed by cognitive scientists to apply the same principles to knowledge workers – people who work with their minds instead of their hands.

The usual approach to training has been to provide all the background knowledge and skills first – and then have the trainees practice. The case-based approach turns that sequence on its head. In a case-based curriculum, we quickly immerse trainees in realistic cases after providing them with a very brief overview of the key background information – just enough to provide a framework from which they delve into case work. This is where the real learning takes place--by working through cases.

Performance-Centered Learning puts the real-life situations and cases front and center. The cases can be encountered in many forms: through online simulations, paper-based formats, using the training area of the computer systems, live classroom simulations, using role play, or with structured on-the-job experiences supported by a mentor or coach. Trainees work through a systematic set of cases that include the variety of types of situations they would encounter on the job. The more realistic the scenario, the better it is. This enables trainees to construct a mental "library" of cases that can be referenced on the job, and gives them skills that can be readily transferred.

The Teachable Moment

As trainees work through cases, there are points at which they are faced with a decision of what do next, points where the user thinks "Hmm – I'm not sure what to do now." At that point, that "teachable moment," trainees are motivated to learn, because they need information to complete the task at hand. They are also likely to remember that information later, on the job, because by getting information at the teachable moment, trainees create a mental link between the information and how it is used on the job. This means the information will be "indexed" in trainees' minds, and they are more likely to be able to retrieve it when they need it in real life. The teachable moment is a key feature of Performance- Centered Learning. In Performance- Centered Learning, the cases are constructed to present a series of teachable moments that set up opportunities to learn key content.

For example, we developed series of web-based simulations for a commercial claims unit on investigating complex auto bodily injury claims. The simulated cases set up a series of teachable moments for learning this difficult task. One simulation began with the trainees encountering a call by the claimant who was injured in a head-on car collision. To answer the claimant's questions and decide on next steps in the claim investigation, trainees had to refer to the online claim folder, file notes, and state jurisdiction information. At each point at which the trainees had to decide what to do next in the investigation (the teachable moment), they could click on a resource link to the relevant materials. They could also click another link to bring up an expert relating a brief story of how he had handled a similar claim. Then the trainees immediately applied what they just learned to the case at hand. Instead of going through a long tutorial on how to handle auto claims, the trainees learned the policy, investigation process, systems, and interview skills in small chunks, presented at teachable moments as they worked though the simulated claims. This is inherently more interesting and engaging to the trainee, and more easily transferable to the job.

Scaffolding

While a building is being constructed, scaffolding is put in place to support the structure. As the building moves to completion, the scaffolding can be removed so that it can stand on its own. Similarly, at the beginning of the learning process, trainees need a great deal of support (scaffolding). As trainees build up knowledge and skills, the support is gradually removed until they can stand (perform) on their own.

For example, insurance agents for a large company needed to learn a new policy management system and the related customer interaction skills, policies and procedures. A blended learning curriculum was structured in the following manner, to provide a high degree of scaffolding at the beginning that was gradually removed as the trainees gained competence and confidence:

1. **Classroom Walkthroughs:** Trainees began with brief, but highly structured classroom training in which the instructors walked them through cases and examples of using the new system and processes step by step (maximum scaffolding).
2. **Multimedia Simulations:** Next, trainees worked on their own with multimedia simulations that emulated the system, within the customer situations they would encounter. The simulations provided a high degree of scaffolding by monitoring their actions and giving feedback and guidance at the teachable moment though an online mentor. If they made an error, the online mentor would give them immediate feedback to keep them on track.

Case-Based Learning

1. **Facilitated Practice:** At the next stage, more scaffolding was removed. Trainees practiced on the real system, working with dummy data in the training area of their system, so they had room for error without affecting real data. There was a facilitator available to answer questions and provide guidance when needed – at the teachable moment.
2. **Supervised OJT:** Learners worked on the job, with a mentor available to help. At first the mentor was very involved, answering questions, reviewing work, and giving feedback. Over time, as the trainees demonstrated proficiency at assigned tasks, the mentor became less involved.
3. **Proficient Performance:** Finally, the last piece of scaffolding was removed and the trainees were ready to stand on their own.

Simple to Complex

In a cased-based curriculum, cases are organized from simple to complex. We gradually

increase the difficulty of cases to keep trainees challenged but not overwhelmed so they are continually motivated to learn. This provides a "flow" experience, similar to the way video games make each new level of play more challenging, but not too challenging, to keep people engaged. In this way, trainees gain confidence as they go – handling complete cases along they way.

Spiral

A case-based curriculum is organized by types of cases, not by topics in isolation. Trainees work though entire cases; and each case is designed to focus on a particular area of content in the context of the whole case. There are many teachable moments constructed to get at that component area. The learning is designed to spiral – meaning that in each case some previously learned material is reviewed, to assist in retention, and some new material is previewed. In this way trainees solidify previously learned content and see how it applies in new cases. Aspects of the case that have not yet been focused upon are provided as givens so that when they later become the major focus – they are not brand new to the trainees. As each case in the curriculum spirals up to the next level of complexity, it loops around to touch on what came before and what is yet to come, resulting in an expanded understanding of the content.

Integrate Knowledge, Systems, Skills

In many traditional training programs, content knowledge, computer systems, and interpersonal skills are taught separately. However, an expert performer needs to integrate and coordinate multiple aspects of the job simultaneously, such as systems usage, policy, procedures, interpersonal and customer service skills, research skills, workload management and organizational skills. When trainees learn these in isolation, they are unprepared to put them together on the job. They feel overwhelmed and things fall between the cracks, resulting in errors, lower productivity and unsatisfied customers. That is the big challenge – to teach trainees to coordinate skills and knowledge to serve the customer.

> ***I hear and I forget.***
> ***I see and I remember.***
> ***I do and I understand.***
> *Confucius*

For example, consider how best to teach someone to make a pot of spaghetti. The most natural method is to make a pot of spaghetti with them, showing them how while doing the task. However, the usual corporate training approach would be to first break up the task into discrete steps (boiling water, measuring spaghetti, testing for tenderness, straining, etc.). Each step would be taught separately and mastered in isolation, and then the trainee would be asked to "put them together." Clearly this is a less effective manner, and deprives the trainee of the opportunity to organize the underlying knowledge until the end of the process.

> ***The central element of Performance-Centered Learning is learning by doing.***

In a case-based curriculum, all aspects of a job are practiced in an integrated way from the beginning. By the time trainees are on the job, they have had a large amount of experience under their belts with integrating the various aspects of their work.

Community of Learners

The case-based curriculum is best done in a community of learners. The benefits of building a community of learners are:

- Enabling discussion and reflection to solidify learning
- Motivating learning through peer interaction
- Building a feeling of belonging and loyalty to the organization
- Forming relationships that can last over a career
- Making learning more enjoyable

The community of learners can be created though groups that meet locally or through virtual communities that use communication technologies – electronic message boards, instant message, web conferences, and email – to keep in touch. The learning community meets regularly (physically or virtually) to discuss cases, support each other and ask questions. In one organization we've worked with, trainees met regularly together with a mentor to present and discuss cases in a roundtable format. Talking about cases in a community of learners expands the range of case knowledge for everyone and helps people put the cases into a usable context.

Developing Case-based Curricula

With these case-based design principles in mind, we can develop a powerful curriculum that

truly prepares trainees to become expert performers on the job. The following are the key steps in using the Performance-Centered Learning methodology when creating a case-based curriculum.

- Use existing training materials as background and source material.
- Identify subject matter experts (SMEs) who are true expert performers on the job (not just experts who are managers and are removed from the day to day work).
- Facilitate meetings with the SMEs and use knowledge engineering techniques to uncover how expert performers organize their knowledge.
- Build taxonomy of cases organized by type of case.
- Identify the factors of complexity in the set of cases and rank the cases from simple to complex.
- Work through prototypical cases to map key content point and skills on to the cases. Create a matrix of steps in handling each case linked to each content point and skill. These become the teachable moments.
- Identify content to be provided at each teachable moment. In going through this process with SMEs, we determine what knowledge is really necessary to work the cases, and eliminate (or move to a reference tool) the content that is only nice to know.
- Challenge SMEs to get at the implicit knowledge or rules of thumb that they use in working cases.
- Identify media and methods for providing the case experiences (e.g., live simulations, web-based simulations, etc.).
- Build the cases and sequence them based on the design principles discussed above.

It may take more time and resources to develop a case-based curriculum than a traditional curriculum. However, the investment pays off in spades because when people complete training, they are ready to hit the ground running. Their time to actual job proficiency is greatly reduced – leading to gains in productivity, and reduced time spent by supervisors and co-workers in helping new workers figure out what to do, and correcting mistakes. The investment up front to develop a case-based curriculum results in large savings at the back end.

If Joan had been though a case-based curriculum, she would be well on the path to achieving an expert performance herself.

Biography

Marty Rosenheck, Ph.D., CPT, is vice president of design and development at Cedar Interactive, a custom training and performance solutions company. He has been helping people and organizations develop expert performance for over 20 years. Marty has designed award-winning learning systems, conducted needs assessments, developed curricula, and created blended learning strategies for numerous non-profit and for-profit organizations, including Allstate, Aon, Blue- Cross BlueShield, Citibank, St. Paul Company, and the Social Security Administration. Based on his doctoral work in Cognitive Science, Marty developed a learning approach called Performance Centered Learning that helps people build expertise through guided simulations. He can be reached at mroseheck@cedarinteractive.com.