

Dell Education Services Topic-Based Learning

Using Topic-Based Learning (TBL) to Improve the Learning Experience for our Data Protection Certification eLearning Course

<https://doi.org/10.3991/ijac.v13i3.17211>

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Abstract—Traditional learning usually tries to teach the learner everything they might ever need to know. We know that they will forget most of it shortly after the training. Topic-based learning teaches just the critical need-to-know topics closer to the point of need. The rest of the content can be references the learner can look up later. How? In this paper we describe what TBL is, the process we use at Dell to identify those topics, and how to obtain buy-in from the stakeholder. In the end, we create more impactful and memorable training.

Keywords—Topic-based learning, TBL, eLearning

1 Introduction

1.1 Why topic-based learning?

Traditional learning is often delivered as larger courses, requiring more development time, and containing substantial amounts of information. Often, that information is not relevant to the learner and, structured in poor sequence, isn't needed until later in the training (if it is even needed at all). Topic-based learning, also often referred to as task-based learning, differs from traditional learning because it focuses on what the learner needs to do, versus what they should know. TBL focuses on providing need-to-know information, closer to the time of need.

This case study shows how using Topic-Based Learning, or TBL, improved the learning experience for our Data Protection Certification eLearning course. We'll also show how it saved not only time for the learners but also time and resources for the Dell Education Services Department.

1.2 Example of topic-based learning in action

First, what skills does it take to drive a car? Steering? Braking? Knowledge of the Rules of the Road? Before you can drive, must you know how to change a flat tire?

Which of many skills does the driver NEED to know? In contrast, what skills can they look up later, when they need to? Acceleration, steering, braking and the common rules of the road are need-to-know. How to change a tire? They can refer to the driver's manual or an online video if they ever need to change a tire. Similarly, for our information technologies audience, Dell courses often went past “need-to-know” almost to “everything there is to know.” Framing all knowledge as either “need-to-know” or “nice-to-know” provided a useful rule of thumb when figuring out how to pare down week-long classes.

Second, consider your audiences. Where are a new driver and a seasoned driver similar, and where do their needs differ? When developing topics for driving a car, for example:

- Steer and Brake are need-to-know skills, but the seasoned driver already knows them. Which side of the road to drive may need to be taught to the seasoned driver if they are moving from the United States to Australia.
- Do new and seasoned drivers have different job performance goals? The new driver may prioritize getting to their destination safely, while the seasoned driver might prioritize getting there quickly.

Applying TBL to our fictitious driver training, you would create one module teaching how to brake and let both types of drivers take that training. Change a tire? Leave it up to YouTube, or, in the case of a race car, the pit crew.

Third, what is the criticality or impact if the learner does not do the task correctly? Is there a small decrease in performance (perhaps negligible) or will it be a major problem for the client, employee, or organization, (perhaps financially catastrophic)? A small decrease may get a criticality rating of one or two. A possibility of death would get a rating of five. Again, this question helped us parse what could be left out of existing courseware. For example, many Dell products come in multiple models or sizes. If you bought any version of the product, the training also described all other versions of the product in an overview, in case you could use a different version. What was the impact to the learner of omitting this information? Well, none. So out it went.

Lastly, identify any training resources the learner may reference. How to change a tire is an example. If you have a topic that only one audience needs to know and the criticality is low, why put it in the training? Refer the learner to the training resource when they need it. The course is now shorter, easier to update, and you may have the time to add in experiential learning activities to help make the learning stick.

Take all this information and put it into a spreadsheet. Table (1) is an example of a few car driving skills filled out.

Table 1. TBL spreadsheet with a few skills filled in

Skill	Topic	Task	Audience	Critical-ity	Resource
Starting			New Driver	4	
Driving	Accelerate	Accelerate smoothly	* New Drivers * Existing Drivers	2	
	Rules of the road		* New Drivers * Existing Drivers	4	Drivers Ed Manual
Parking			New Driver	2	YouTube

2 Example of TBL in action at Dell

The Data Protection Certification eLearning course was the first course to go through a complete remake using the TBL methodology. TBL allowed us to move away from traditional text-heavy slides shown on the top image and create task-focused content and with hyperlinks out to the “nice-to-know” information on the bottom image. We also see the use of images and videos to explain complex steps and configurations. See Figure 1 to see the visual difference.

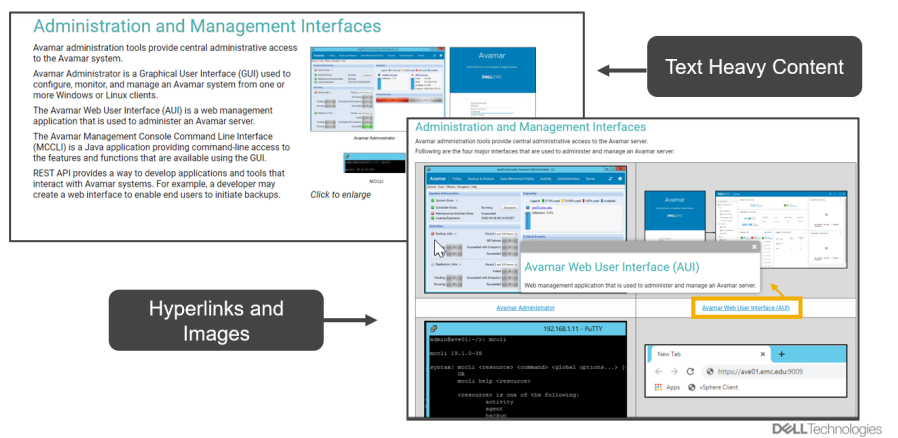


Fig. 1. Training before and after applying TBL

A 35-minute video demonstration comparing the old and new training and demonstrating the new UI may be found here:

<https://edutube.emc.com/Player.aspx?vno=5DuSTL6Gg1vkiUz2cO8xug==>

2.1 Results

The Topic-Based Learning pilot provided a way for us to modernize the way Dell develops training, and to move us into the future of training. We took our traditional large monolithic course and broke it down into smaller, self-contained topic-based learning objects that could stand on their own as small microlearning job aids, or combine to create larger learning experiences. The smaller topic-based development allowed the training content to be developed once, but it could be output to multiple formats such as an eLearning, instructor-led classroom course, or as individual microlearning job aids.

Our goal was to develop a process that could be used going forward to create a course once, yet interchange the content in multiple ways without having to recreate the content for each delivery format. Each topic-based learning object could include assessments, instructor notes, and student guides, and if needed, combine with other topic-based learning objects to create larger formal certification learning experiences.

Each topic-based learning object included an experiential learning piece. We focused on creating performance-based activities at the task level. These tasks mirror actual on-the-job tasks as much as possible, so students would easily transfer the skills from the training to their actual jobs. For example, we created an activity that had users map a network drive. It didn't include editing the mapping or deleting the mapping since each of those are their own task. Each activity centered around one single task. This allowed the content to be mixed and matched to meet the specific learning need while still being reusable with other content.

Each experiential activity included an introduction to the concept. This included a walk-through of the concept, and could be a video demonstration for complex processes or procedures. Next, the participant was given an interactive experience through the use of simulations or hands-on labs. At the end of the activity, the participant was given key points to reflect on. Instructors could use these key points as discussion points if the content were used for a classroom training.

The pilot's development team focused on the need-to-know content vs. the nice-to-know content so that each topic reflected what needed to be done on the job, while the nice-to-know content was linked out. This allowed participants to personalize their learning experience by allowing them to dive deeper if they wanted to; or, they could solely go to the content they needed to fit their own learning objectives.

The team utilized Articulate Storyline to create simulation activities with just-in-time help activities so participants could jump directly into the content and not have to spend time up front learning about the layout of the material (as many traditional courses force participants through).

An added benefit of the smaller, more focused course content was that quality reviews were quicker and easier. Traditional quality reviews of large monolithic courses often take multiple days and can be long and tedious, resulting in rushed reviews that let typos and other mistakes slip through. The reviews of the topic-based content were about ten slides long, and could be done quickly while still keeping the quality of the reviews high. This increased the number of people that could help with the reviews, since the reviews were short enough to fit between other daily work tasks.

It was also easy for us to recruit volunteers to review the content, since it was a quick and painless process.

Throughout the pilot, there was close collaboration between our development teams and our classroom instructors. Because of the small size of the learning objects, instructor feedback could easily be integrated back into the content, which helped create an iterative development process. This also helped improve the quality of the instructor notes since they could easily be collected and integrated back into a single master, peer-reviewed by all instructors.

3 Where we go from here

The topic-based pilot was a great success for Dell Technologies Education Services. The courses are now quicker to build, publish, and release to the market. Updates to the course now happen within a shorter timeframe. We have laid a solid foundation with Topic-Based Learning and have continued to build on the learnings from this pilot to create a modernized learning strategy that will take us and our customers into the future.

4 Authors

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Article submitted 2020-07-22. Resubmitted 2020-07-28. Final acceptance 2020-07-29. Final version published as submitted by the authors.