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Is teaching theory necessary if it's never used?

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The point is that the theory really was not used. However, it is still important to teach theory so a student has a profound understanding of why things occur, react or work because of the underlying, unseen moving parts. Knowing the theory can help troubleshoot any issue that arises if we understand how something functions when attempting to take corrective action to resolve it.

It is easy to just touch this or push or pull that to get a desired effect. However, if they do not understand *why* they are doing it based on the parameters given and what the gauges are telling them, it may have an undesired result.

What will they do when something goes wrong? Probably panic!

One of the techniques we taught was what a driver had to do in case the engine started to overheat in the middle of an active fire and pumping operation. Candidates were taught to lightly spray the radiator at the front of the truck with a hose line and nozzle to cool the engine.

I had candidates say to me during a practical exam, "I know we have to spray the radiator with a hose line and nozzle, but how does that work?" Once again I needed to explain the theory so it made sense to them.

"Just like when you sweat and there is moisture on your skin, as air passes over it you feel cooler," I replied. "Therefore, by spraying the radiator, you are having the incoming air pass through a moisture barrier to cool the warmer ambient air temperature passing through the veins of the radiator, therefore helping to cool down the engine by cooling the water in the radiator."

Once this was said, the light bulb went off! Some individuals are book smart and are good candidates. However, sometimes they do not have the practical knowledge. Explaining the theory makes systems function easier for some to comprehend and retain.

Teaching drivers what happens inside a water pump, a fire hose, the properties of water, fluid dynamics, effects on a truck when in motion and the different forces that can affect it are all important. Why we do what we do, and why we use what we use need to be explained.

The culmination of all the classwork and lecture comes together at the pump panel and applying the theory into a hands-on, practical aspect. "More time at the pump panel" was the only issue most candidates identified in the post-driver course critique.

Even though fire apparatus is designed for severe service and hours upon hours of operation, wear and tear on the components occur. Also, take into consideration the diesel fuel being used and the cost. As we say, it's the cost of doing business.

Plus, there's the fact that the training center usually got the hand-me-downs for apparatus, making breakdowns and malfunctions more commonplace than newer front-line apparatus. Training center apparatus sometimes got used more than the front-line apparatus! Seeing the malfunctions and breakdowns with the training apparatus, and explaining why they occur, gave us the ability to see firsthand the component wear and how to prolong or avoid it.

Candidates knowing how systems work also helps them "maintain" the apparatus and catch items or issues when they are small before they become costly. This contributes to saving money in the long run. Knowing the do's and don'ts goes a long way.

One of the best advantages for anyone is ability to pass on the knowledge to others. A person will get a profound understanding once they teach or instruct other interested individuals.

Never in my wildest dreams would I have thought that instructing driver candidates would provide a wealth of knowledge, part of which was realizing the many things I was not doing properly because I thought I knew better, until I started teaching it!

About the Author



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