Research Demonstrates Greater Efficiency of Truck Simulator-Based Driver Training

Results from two different scientific studies conducted by the HEC Montreal, a university research leader, show that student truck drivers learn gear-shifting skills more efficiently with a self-paced, driving simulator program than they do during instructor-led sessions in trucks. The studies were done in collaboration with the Centre de Formation en Transport de Charlesbourg (CFTC), a professional truck driver training school in Quebec that graduates 1,000 students annually and Virage Simulation, a Montreal-based driving simulator manufacturer and training program developer.

Efficiency is defined in terms of time required to learn a skill with one method versus another and is measured with a formula called the Transfer Efficiency Ratio (Blaiwes et al., 1973). In both studies, the performance of two groups of student truck drivers was compared. One group had prior driving simulator training (without teacher supervision) on the self-paced Golden Shifter$^{©}$ program. The other group learned in trucks with teacher supervision.

The first study found that students who completed the Golden Shifter© program prior to their in-truck training reached the same level of gear-shifting competence in less than half the time. Specifically, for the Golden Shifter© graduates the Transfer Efficiency Ratio was 1:2.4, meaning that one hour of truck simulator training equaled 2.4 hours of in-truck training (Hirsch et al., 2011).

In the second study, every student who practiced on the simulator for an average of 90 minutes prior to their in-truck training reached a level of gear-shifting competence at the end of the first day of in-truck training that was only reached at the end of the third day by students without simulator training. The Transfer Efficiency Ratio was 1:2, meaning that one hour of self-paced practice on the Golden Shifter$^{©}$ truck simulator training program equaled two hours of in-truck, instructor-led training (Hirsch and Bellavance, 2013).

References:

Blaiwes, A.S., Puig, J.A., and Regan, J.J. (1973). *Transfer of training and the measurement of training effectiveness*. Human Factors. 15(6) 523-533.

Hirsch, P. and Bellavance, F. (2013). [*Transfer-of-Training Efficiency Study*]. Unpublished raw data.

Hirsch, P., Bellavance, F. and Pignatelli, S. (2011). *An Evaluation of the Effectiveness of Simulator-Based Training on the Acquisition of Gear-Shifting Skills for Learner Truck Drivers*. Proceedings of the 21st Canadian Multidisciplinary Road Safety Conference, May 8-11, 2011. Halifax, Nova Scotia.