

# The role of simulation in the training of novice drivers

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## Abstract

The accident risk of novice drivers is still relatively high. To reduce accident involvement of novice drivers, the EU project TRAINER developed a new European driving curriculum. Using a multi-media tool and a driving simulator, the training program focuses on higher-order driving skills like anticipatory driving, risk awareness and hazard perception. These skills are very important to become a safe driver, but are difficult to train on the road. As a consequence they are insufficiently addressed in 'classic' driver education. To acquire these skills, two new driving simulators have been developed, one simple model featuring a single monitor and a static base, and one more sophisticated version with three monitors and motion support. Thirty-one scenarios, each focusing on a specific topic related to a particular higher order driving skill, have been implemented. Currently experiments are run to validate the new curriculum, i. e. to examine if simulator-based training effects are transferred to real driving situations.

## Introduction

The risk of an accident is much higher for novice drivers than for the rest of the driving population. This is due to several reasons. Novice drivers are not familiar with the actual dynamics of their vehicle and overestimate their driving skills. Furthermore they lack the strategies for anticipatory risk perception and they are often unfamiliar with new technology installed in modern cars.

Classic driver training using vehicles with dual controls in real traffic has its limitations and cannot sufficiently address the issues mentioned before. Therefore novice drivers obtain their driving licence with still poorly developed higher driving skills (e.g. risk perception, driving under difficult weather conditions, tailgating in dense traffic). They have to get the necessary experience in real traffic, which can deny them the chance to learn from mistakes.

The TRAINER-project targets these weaknesses of current driver training making use of the possibilities modern simulation technology offers. The rapid development of simulation technology allows the construction of high quality simulators at costs affordable for average driving schools. Completely new developed training scenarios aim at novice drivers acquiring those skills that are important for safe driving but are difficult to address in real traffic.

In D. de Waard, K.A. Brookhuis, S.M. Sommer, and W.B. Verwey (2003), *Human Factors in the Age of Virtual Reality* (pp. 159 - 161). Maastricht, the Netherlands: Shaker Publishing.