

# Article review

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Teacher Article Review General Problem Distracted driving contributes to accidents. National Safety Council found that the use of cell phone while driving attributed to 26 percent of all car accidents (Gorman 1). The article prescribed for this assignment presents results of researches conducted by researchers in this area. They studied the impact of cell phone conversation on driving performance. These studies found that the use of cell phone while driving impaired driving performance variables such as, reaction time to breaking, driving speed, and probability of missing traffic lights. However, these studies did not adequately address whether dual-task driving practice could reduce or eliminate the adverse impacts on driving when the driver is on a cell phone. The current study is meant to address this issue.

#### The Purpose of the Study

The primary objective of the study was to assess the effect of practice on concurrent driving and phone conversation (Cooper and Strayer 893-894). The study expected to see that training in repeated scenarios would reduce dual task impairment driving aspects such as, collisions, break reaction time, and speed compliance.

#### Methodology

##### Subjects

The subjects of this study were two groups of students. Each group consisted of 30 participants. One group had 5% or less concurrent real world use of the cell-phone experience, and the other had group had 41% or more.

##### Variables

For highway driving environment, independent variables were following distance and braking reaction time. For city driving environment, in addition to them also included was speed compliance. The dependent variable was

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number of crashes.

### Procedure

The subjects performed driving for a period of four consecutive days in a simulator using four driving scenarios; two were created using highway database, and two were created using city road database. The highway driving scenario simulated 18-mile beltway with on and off ramps, overpass, and 2-3 traffic lanes in each direction. In this scenario, participants were following a pace car by maintaining an approximate headway of 2 seconds. The pace car was driving at 65 mph and decelerating to one of the four minimum speeds; 30 mph, 35 mph, 40 mph, and 45 mph. The city driving scenario simulated a 2-square-mile mixed downtown and residential environment with different posted speed limits, traffic lights, stop signs, one-way and two-way roads, distractor vehicles and the sudden appearance of human and animal. The experiment also used transfer scenario such as, from highway driving to city driving and vice versa.

### Highlight of the Study

Highlights are described below; the researchers categorized them into real world experience, repeated scenario practice and transfer performance.

Mean reaction time, mean following distance and speed control in the city environment failed to reveal any significant effects of real-world cell phone and driving experience.

In real world scenario, the impact of cell phone conversation on driving performance was highly significant.

Participants on the cell phone were significantly slower to apply their brakes in response to the lead vehicle.

Chi-square test of practice day 1 revealed that the difference between

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collisions with single and double tasks was significant.

Chi-square test of training day 4 showed that the difference between collisions with single and double tasks was not significant.

Consistent with day 1, practice results on day 4 showed that participants on the cell phone were significantly slower to apply their brakes

Practice did not reduce in interference of driving variables except collisions.

On the contrary, speed compliance in the city environment was significantly diverged with practice.

Transfer performance showed that when driver conversed on cell phones, they were again more likely to be involved in a collision; drivers on cell phones had slower reaction times.

#### Implication of the Research

The authors wanted to find if dual-task practice on a simulator can reduce number of collisions; improve brake reaction time, forward following distance and speed compliance. The authors, from their research, found that experience gained whether through real world or simulator does not significantly improve the ability to converse on a cell phone while driving.

#### Assessment of the Research

##### Strengths

The study used two groups dual task participants; one had small experience (5% or less) of use of cell phones while and other had substantial experience (41% or high). It imitates the real world situation as described by previous researchers. Previous researchers noted that real world experience might have no effect on a dual task performance. However, they suggested that research should study if repeated practice could limit impairment of driving performance during a dual task. The study successfully verified it and built a

pavement for further research in this area.

#### Weakness

The weakness of this study is the time allocated for research that investigates dual-task driving performance.

#### Recommendation

We recommend conducting experiment using more practice time with complex driving scenarios. We also recommend conducting statistical analysis using multivariate regression model for different scenarios.

#### Works Cited

Cooper, J. M. and David L. Strayer. “ Effects of Simulator Practice and Real-World Experience on Cell-Phone-Related Driver Distraction.” utah. edu. Department of Psychology, University of Utah, 2008. Web. 09 Feb. 2015.

Gorman, R. “ One in four car accidents caused by cell phone use while driving.” mail. co. uk. Mail Online, 2014. Web. 09 Feb. 2015.