

Investigating the impact of innovative treatments on driving behavior at school bus stops: A driving simulator study

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Problem statement

- School bus related crashes account for a substantial proportion of fatalities and injuries
- There were 1,113 school bus related crashes and 1,241 fatalities from 2008 to 2017 in the U.S.
- The likelihood of students in getting involved in a school bus related crashes increases during loading/unloading
- The illegal passing of the stopped school bus has been identified as one of the leading causes of students' injuries and fatalities



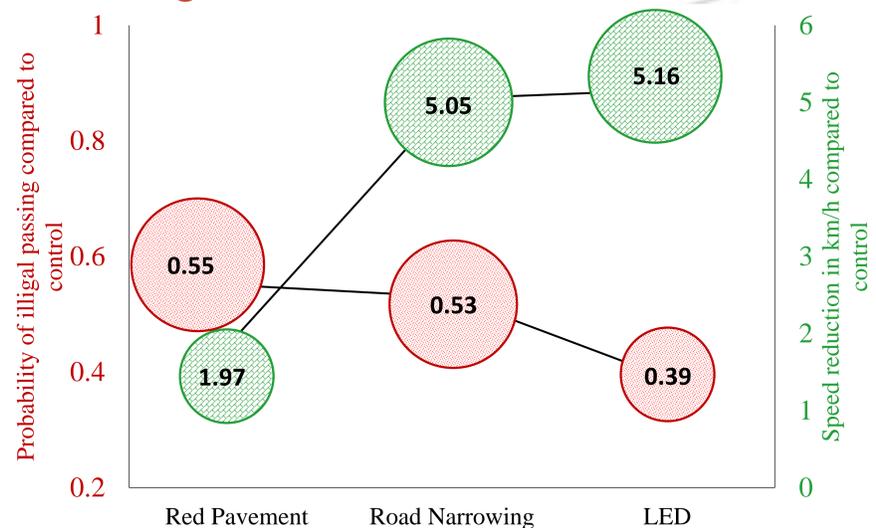
Source: <http://www.findlocal.com/CA/Toronto/146525122063057/Friendly-Truck-Driving-School>

Objectives

- Improving safety at loading/unloading locations of school buses
- Improving the acceleration/deceleration behavior of drivers
- Stimulating drivers to slow down even in the absence of the school bus

INTRODUCTION

Main findings



Recommendations

- A combination of LED with Road Narrowing could further improve the safety of students
- Evaluating the effectiveness of the proposed treatments in a real world experiment



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CONCLUSION

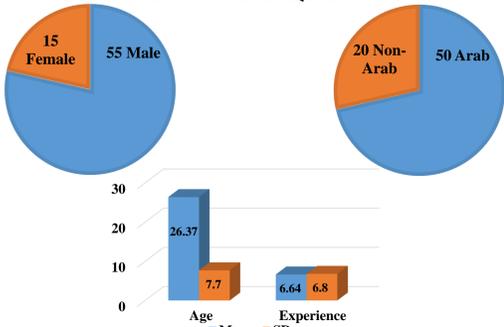
METHODOLOGY

Apparatus



Participants

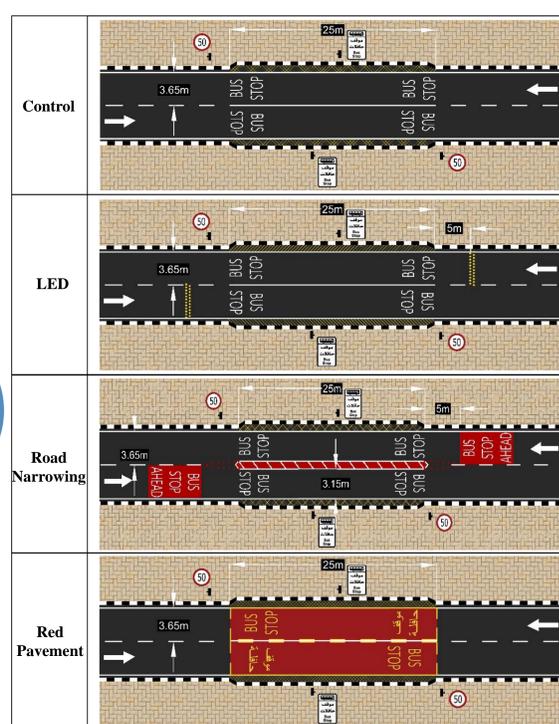
- 70 drivers with valid Qatari license



Situations

- Situation 1: Bus is stopped on same driving lane
- Situation 2: Bus is stopped on opposite driving lane
- Situation 3: No bus

Scenarios

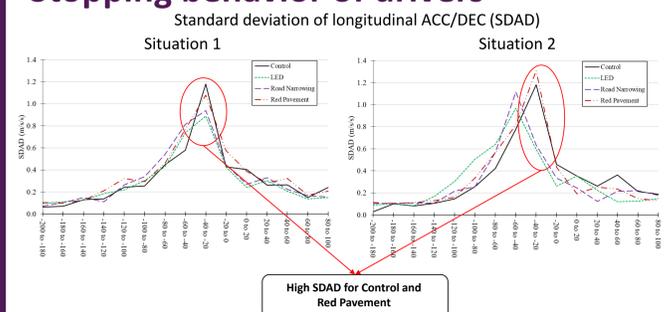


RESULTS

Analysis of illegal passing



Stopping behavior of drivers



Analysis of speed for Situation 3

Mean speed profiles of drivers for the four conditions in situation 3

