ANSTSE
Association of National Stakeholders in Traffic Safety Education

The Importance of Driver Education in a World of Vehicle Technology

New vehicle technologies that support and assist drivers are increasingly available as standard features on new vehicles. The purpose of these new technologies is to mitigate common driver errors and improve safety which is a top priority for consumers when purchasing a vehicle.

However, while these new technologies have the potential to substantially reduce collisions and fatalities, research shows that driver knowledge and awareness about their proper use is quite low. As such, driver education remains essential to ensure that new drivers, as well as more experienced drivers, do not mistakenly under-estimate their role in the safety equation and that they are able to reap the safety benefits offered by these new technologies.

In addition, there is an immediate need for effective strategies to overcome misperceptions about the role of drivers in semi-automated vehicles which may be available in the near future. This means that continuing education for all drivers will be paramount to help them keep pace with new technologies and maximize their effectiveness by reinforcing safe driving practices.

Common misperceptions about safety features reported in recent surveys revealed that:

- Less than 1/3 of drivers reported they are familiar with most advanced driver assistance safety technologies that have become standard on new vehicles in the last decade.
- Many drivers believe that they are able to perform better than safety technologies.
- Some drivers are willing to take more risks when driving because they have safety technologies on their vehicle. *(Robertson et al. 2016; Hedlund 2016; Deloitte 2017)*

Ways that safety technologies can protect drivers:

Many of the newer safety technologies have been designed to address common driver errors that often play a role in collisions.

- **Automatic Emergency Braking:** This feature can sense slow or stopped traffic ahead and urgently apply the brakes if the driver fails to respond. This feature may typically be paired with a feature called forward collision warning. That feature scans the road ahead while you drive, warning you if you're about to crash into a car. If you don't react in time, automatic emergency braking quickly slows down your car or can even bring your car to a stop. It can't always prevent a rear end collision, but may lessen the severity.
- **Forward Collision Warning Systems:** These systems are designed to warn drivers if they are about to hit an object on the road ahead. These systems use audible, visual, and vibrating alarm warnings to warn drivers of an impending collision. In some vehicles, this feature may even apply the brakes if drivers fail to respond. However the design of these systems is not standard across manufacturers and they vary in terms of the type of alarm, whether the brakes engage, and what type of objects are detected.
- **Lane Keeping Assist:** This system can help return you to your lane if you drift out by signaling an alert, via a sound, flashing light or vibration. Respond by returning to your lane. If you do not take action, this feature may gently steer you back to the center of the lane. This could help prevent a crash. This feature relies on painted lane markings to operate. These include the markings between lanes and along the edges of the road. Some versions of this feature may also help prevent you from driving off the road.

Some newer vehicles also now offer combined-function safety features that permit multiple features to work in tandem. For example, collision avoidance systems combined with adaptive cruise control enable drivers to maintain a set distance from the vehicle in front of them as speed varies.

The importance of educating drivers about the limitations of safety technologies.

Many safety technologies rely on input from drivers in the form of steering or braking before they engage. For example:

- **Back-up warning systems** alert drivers of objects behind their car as they back out of spaces like driveways or parking spots. If drivers feel or hear a warning, there may be an object in their backing path and they should turn and check to be sure it's safe before backing.
- **Drowsiness alert systems** alert drivers when they are drowsy and driving in and out of their lane, the feature will alert the driver with a sound, visual warning or vibration. The driver should take a break when it is safe to do so.
- **Lane departure warning systems** alert drivers if they are drifting out of their lane using visual, vibration or sound warnings. The driver must steer back to their lane if they receive an alert.

It is important to understand that one of the major limitations to these technologies is that it is not uniform across all manufacturers. There are variations between manufacturers on all aspects of these technologies, including the names of certain features. This further highlights the need for driver education and underscores its importance.

The need for driver education is critical as new safety technologies emerge.

Despite rapid advances in vehicle technologies, it is essential that drivers remain engaged in the driving task and are able to take control of the vehicle with little notice, particularly in high-risk conditions such as inclement weather or heavy traffic. Moreover, while it is anticipated that semi-automated vehicles will become available in the next few years, there is debate regarding how long it will take to achieve widespread adoption of these vehicles.

In addition, semi-automated vehicle are anticipated to change the way that drivers interact with their vehicle. There are concerns that driving skills will remain a critical need, and drivers will have to learn how to retain basic skills to take control of a vehicle, even if they do not have to drive every day. This will present new challenges that driver educators must be prepared to address, and continuous driver education may become essential for all drivers, as opposed to just new drivers.

The rapidly evolving nature of this technology highlights how static driver education that is delivered before drivers are fully licensed will no longer be adequate to respond to a changing road environment. Driver education must adapt to the needs of drivers and prepare to support the development and maintenance of safe driving skills as a lifelong process.

Learn more about advanced driver assistance systems at:

- www.mycardoeswhat.org
- www.brainonboard.ca
- http://tirf.ca/wp-content/uploads/2017/01/Automated-Vehicles-Driver-Knowledge-Attitudes-and-Practices-9.pdf

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