

Car crashes rank among the leading causes of death in the United States.

Online Basic Driver Education Programs

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Abstract

This report summarizes the results of a study of online basic driver education, conducted by Dunlap and Associates, Inc. for the National Highway Traffic Safety Administration. The purpose of this report is to highlight the study's major findings, particularly those relevant to policymakers, driving school owners, and state administrators looking to improve the quality of the online products offered to new drivers. The full report, *Examination of Supplementary Driver Training and Online Basic Driver Education* (DTNH22-05-D-35043), is available from the National Highway Traffic Safety Administration.

Introduction

Motor vehicle crashes remain the leading killer of Americans ages three-34, and the teen population is especially impacted. In 2009 alone, more than 2,300 drivers ages 15-20 died in traffic crashes, and nearly 200,000 more were injured.¹ Traffic fatalities make up over one-third of all deaths in this age group.² Inexperience, immaturity, and an elevated tendency for risk taking are often cited as the major reasons for the elevated crash rates of young drivers. In an effort to address this, basic driver education programs – those intended to prepare new drivers to pass their state's licensure exams – were developed to teach the skills and habits necessary for safe vehicle operation.¹ Such courses have been prominent in the United States since the 1950s, when the now-traditional "30/6" model emerged in which many high schools provided students with 30 hours of classroom instruction and six hours of invehicle practice.¹ Today, about half of the states continue to require that teens take some form of driver education prior to licensure, and several others offer benefits and incentives for doing so, such as early eligibility for obtaining a license or learner's permit.³ Demand for such programs has thus remained strong, with the 30/6 model remaining a high school fixture for many teens across the country.

Despite their popularity, basic driver education programs continue to be the subject of scrutiny and debate. Several high-profile evaluations have produced no evidence that basic driver education programs reduced crash rates; some have even suggested that such programs have had adverse safety impacts due to incentive structures in numerous states that allow teens who complete driver's education to begin driving at a younger age or to hold their learner's permits or intermediate licenses for a shorter period of time. Researchers also note that in general, the results of evaluations of driver education programs have not been used in any systematic way to conduct follow-up studies of the reasons for programs' successes or failures, or to build upon them in an attempt to improve programs. The lack of firm evidence that basic driver education reduces the crash rates of young drivers, in conjunction with the general popularity of driver education and the need for some type of mechanism to teach new drivers how to drive, has led to increased interest in improving the quality of driver education programs.

In 2009, for example, the National Highway Traffic Safety Administration (NHTSA) distributed the *Novice Teen Driver Education and Training Administrative Standards*, with the objective of "enhancing consistency and providing guidance to states seeking to improve the novice teen driver education and training experience." This publication promotes best practices and sets minimum standards that states are encouraged to meet in areas such as program administration, instructor qualifications, parental involvement, and coordination with driver licensing authorities; it also includes nationally-recognized curriculum standards established by the American Driver and Traffic Safety Education Association (ADTSEA) and Driving School Association of the Americas (DSAA). Additionally, the AAA Foundation for

Traffic Safety is currently supporting a large, multi-year, multi-jurisdiction research effort to evaluate the effectiveness of basic driver education. Titled the *Large Scale Evaluation of Driver Education* (LSEDE), this ongoing project assesses safety outcomes and seeks to comprehensively address program theory, context, products, processes, and management in driver education. The project's literature review found that most evaluations of driver education concluded that programs had a negligible – or even negative – impact on safety, but noted that some credible evidence of positive safety benefits has been found, as well. Follow-up on all of these findings is needed in order to be able to systematically use the evaluation process to strengthen driver education. ⁶

With demand high for driver education due to state licensing requirements and incentives; public sector funding drying up due to doubts about program effectiveness;¹ private driving schools and other providers increasingly stepping in to meet demand;³ and researchers and policymakers quickly trying to establish stronger administrative and course standards, a new medium for basic driver education has been gaining prominence: online courses. While online education is generally less expensive than traditional classroom programs, and has been gaining in popularity across a number of fields, the effectiveness of online driver education courses specifically – like their classroom-based counterparts – remains unknown.

Although the effectiveness of online driver education is unknown, research has suggested that Internet-based learning in general – from domains other than driving – has the potential to offer a highly-effective learning experience. According to a 2009 meta-analysis such courses can be particularly valuable when blended with face-to-face instruction and when students are given opportunities to reflect on the material and control their interactions with online media and resources.³ In addition, general standards for online education established by the International Association for K-12 Online Learning (iNACOL) provide guidelines that are referenced and accepted by NHTSA for adoption in Internet-based driver education courses.⁵ These include providing frequent opportunities for student assessments and communication with instructors, giving timely feedback, dividing materials into units with clear objectives, and fostering active learning.³ Such research into this field has provided a foundation and context for analyzing the rigor and quality of online programs, though clearly there is much more to learn about this relatively new medium for learning and its application to driver education.

Toward this end, NHTSA funded one of the first major studies aimed at documenting the growth in online basic driver education programs and the prevalence and current status of such courses nationwide. The study was conducted for NHTSA by Dunlap and Associates, Inc. and the findings were presented in a report titled *Examination of Supplementary Driver Training and Online Basic Driver Education*. Prior to completion of this study, little was known about this expanding and increasingly-significant area of driver training.³ In addition to reviewing the current state of practice with regards to online basic driver education, the study sought to develop a meaningful way to classify the programs currently in existence and offer suggestions for further research priorities.

Purpose and Objectives

The purpose of the study was to document the current state of online basic driver education. With little known about the prevalence of such training, the methods used by states to approve online programs, and the characteristics and quality of courses offered, specific objectives included:

- Identifying states that had approved online courses in-lieu of traditional in-classroom programs and documenting their approaches in doing so;
- Developing a meaningful classification system of existing online basic driver education courses; and
- Inventorying as many online programs as possible and obtaining detailed data about these courses by speaking with program personnel.

This AAA Foundation report serves as a summary and discussion of the findings and implications of the portion of the NHTSA study dedicated to online driver education (a separate report covers the supplementary training portion.) The purpose is to highlight the study's major findings, particularly those relevant to policymakers, driving school owners, and state administrators looking to improve the quality of the products offered to teens. It is worth noting that the study reported here did not seek to conduct a scientific evaluation of the effectiveness of online learning in general nor of online driver education effectiveness specifically; such formal assessments were beyond its scope. The research reported here is intended to provide an overview of the state of practice with regards to online basic driver education and suggests – in light of existing research – qualities and characteristics that may promote active learning and make programs particularly strong.

Methods

Researchers began by identifying states that approved one or more online driver education courses and contacting driver licensing or driver education administrators for information on the approval and oversight process, as well as student enrollment and eligibility requirements. Administrators also provided lists of approved courses in their states, which served as the starting point for identifying and documenting current online driver education offerings. Researchers contacted as many providers as possible to obtain additional information about their courses. For first-hand knowledge, the research team also took the free demonstrations of the programs or enrolled as students and completed the full curricula.

Taken together, the information and insight obtained from speaking with providers and enrolling in the courses was used to build a classification system and provide examples illustrating the various characteristics of programs available to teens today. Existing standards and research into the value of Internet-based education (in general) may be suggestive of certain program features and attributes that contribute to robust, effective courses; however, the classification process did not involve judgments regarding the efficacy or effectiveness of courses.³

Unless otherwise cited, all information presented in this document is based on the findings of the study. More detailed descriptions and breakdowns of state regulations and course offerings are available in the full report, along with case studies providing overviews of specific online programs analyzed by the research team.

Key Findings

Researchers identified 15 states that, at the time the research was carried out in early 2010, either approved or accepted one or more online courses in-lieu of traditional, in-classroom instruction:

- California
- Colorado
- Florida
- Georgia
- Idaho

- Indiana
- Kansas
- Nebraska
- Nevada
- Oklahoma

- Pennsylvania
- Texas
- Utah
- Virginia
- Wisconsin

All of these states required that teens complete a driver education program for initial licensure, or offered an incentive for doing so, such as early eligibility for licensure.³ The states varied greatly, however, in their driver education requirements, and in their approaches to regulating curriculum and online course providers.

Idaho lay at one end of the spectrum, and had among the most stringent requirements for online driver education. Only one online course was approved in the state, and it included a concurrent behind-the-wheel component, real-time online instruction by a certified driver education teacher, and adherence to national curriculum and online instruction standards established by ADTSEA and iNACOL.³ At the other extreme was California, where online providers that were designated as private secondary schools were not subject to state oversight. This, therefore, prevented the research team from compiling a comprehensive list of accepted courses in the state.³ Florida was unique, because it did not require traditional driver education but did require first-time licensees to complete a four-hour Traffic Law and Substance Abuse Education (TLSAE) Course. Florida was included in the study because six of the eight state-approved providers of these classes offered an online version.³ The Florida programs were not included, however, in the course classification developed by the research team because that system was designed to document programs that replaced traditional 30-hour driver education courses, which Florida did not require.³ The findings from Florida were included elsewhere in the report.

Student eligibility to take a basic driver education program online in-lieu of in a classroom setting also varied. While in most cases the online courses had been approved for anybody wishing to take them, some states only offered an online option to home-schooled students or as a parent-taught substitute for a traditional program. In these cases, courses included additional guidance to help parents serve as instructors. States with these additional types of eligibility restrictions included Texas, Oklahoma, and Virginia.³

Researchers found that several states maintained some level of data that could be used to gauge program effectiveness, such as where students completed driver education and what type of program they took. Despite this, only Texas, Florida, and Virginia had actually attempted to carry out evaluations.³ Texas' examination of its various parent-taught driver education programs was not limited to online courses and could not distinguish between the various types being used. Virginia's analysis linked student driving and crash records with data on where and how they completed their basic driver education, and in a preliminary evaluation found that students attending commercial driving schools and home schooled students – who typically, but not exclusively, completed their driver education requirements online – had higher crash rates than students taking driver education as part of their standard high school curriculum. In Florida, providers wishing to offer online programs had first to have

their in-person classes evaluated by the Division of Highway Safety and Motor Vehicles based on graduates' crash and violation history.³

Researchers also found that the extent to which states regulated curriculum and course delivery, and placed restrictions on student eligibility to complete driver education requirements online, generally impacted enrollment levels. In California, 33-50 percent of teens completing driver education did so online, whereas this figure was less than five percent in Idaho. Texas and Georgia also had a high percentage of students completing online programs; Virginia, which offered driver education as part of the 10th grade health curriculum in high schools and generally only permitted home-schooled students to take online courses, and Wisconsin, which only approved two state-run programs and prohibited commercial driving schools from offering online courses, had fewer than five percent of teens completing basic driver education online.³

Figure 1 presents a numerical breakdown of key findings regarding course providers (blue) and course offerings (red). Figure 2 highlights some of the key facts and policies in states that have approved online substitutions for traditional classroom-based driver education. (Note that while Nebraska approves four such courses, insufficient information was provided to be able to include it in Figure 2; the remaining 14 "online" states are shown.)

Figure 1. Characteristics of Courses and Providers, Select States, 2010

15

Number of states that accept an online program as an alternative to a traditional classroom course

The Providers...

1 - 22

Range in the number of online courses and/or course providers approved by a given state*

40

Number of unique providers of online teen driver education courses identified

Non-profit providers

State/local entity providers

30 For-profit providers

The Courses...

<5% - 50%

Range in the percentage of teens in a given state completing their driver education program online**

45

Number of online courses identified

\$19 - \$425

Cost range of online courses***

7

Number of courses with homework requirements

24 & 25

Number of courses using video and animation, respectively

^{*}Lowest was Idaho, which approved only one program. Pennsylvania approved driving schools, 22 of which offered online programs. However, PA didn't approve each program individually. Range also doesn't include California or Kansas, whose numbers of approved courses remain unknown

^{**}Highest percentages were found in California, Georgia, and Texas. Idaho, Virginia, and Wisconsin all reported that less than 5% of teens completed their driver education online.

^{***}The highest-priced courses included subsequent behind-the-wheel instruction

Figure 2. Description of Various State Driver Education Requirements and Resources, 2010

	Driver Education (DE)	Hours of DE (Classroom; Driving; Observation)	Number of Approved Online Courses Or Providers	State Kept Data on Where Students Took DE?	State Attempted Evaluation of Online Programs?	Amt. of Students Completing Online DE
California	Required to obtain license before age 18	30; 6; 0	Unknown	No	No	33% - 50%
Colorado	Allowed early permit eligibility	30; 6; 0	9	Yes	No	17.50%
Florida	Required for all first-time drivers	4-hour TLSAE course or equivalent	6	Yes	Yes	183,000
Georgia	Allowed license eligibility one year earlier (at 16)	30; 6; 0 (40 hours driving w/ parent replaces 6 w/ professional)	5	Yes	No	40%
ldaho	Required for all students ages 15-17	30; 6; 6	1	Yes	No	2%
Indiana	Allowed early permit and probationary license	30; 6; 0	3	No	No	Unreported
Kansas	Eliminated DMV testing requirements	Classroom and behind- the-wheel; length varied	Unknown	Yes	No	9%
Nevada	Required to obtain license before age 18	30; 0; 0 (Each hour driving cuts classroom req. by 3 hours)	17	No	No	Unreported
Oklahoma	Allowed early permit, shorter intermediate license period	30; 55; 0 (For parent-taught alternative)	6	No	No	Unreported
Pennsylvania	Allowed early eligibility for full licensure	30 hours for online courses	22	No	No	Unreported
Texas	Required to obtain license before 18; road test waived	Length varied; 7; 7	5	Yes	Yes	35% - 40%
Utah	Required for all first-time license applicants	Length varied; 6; 6	3	No	No	Unreported
Virginia	Required for all teens under age 19	36; 7; 7	4	Yes	Yes	3.13%
Wisconsin	Required to obtain license before age 18	30; 6; 6	2	No	No	<5%

Overall, researchers identified and gathered information on 45 online courses offered by 40 providers, finding that the content of these programs was often dictated by state-mandated curricula and therefore didn't generally vary significantly from course to course within a given state. What did vary greatly, however, was the manner in which this content was presented, with some courses amounting to little more than electronic textbooks and others offering full, interactive instruction in a virtual classroom setting. Because course content and curricula tended to be dictated by the states and often was quite similar between programs, researchers based their classification system of online basic driver education courses on the more varying nature of their delivery. In analyzing the broad range in course delivery, researchers identified seven key variables with each representing a spectrum of qualities and characteristics. These are presented in Figure 3.

Figure 3. Characteristics of Online Driver Education Courses, 2010

Seven Key Components of Online Driver Education Course Delivery							
	Weak Characteristics	Strong Characteristics					
General Course Delivery & Presentation	Lengthy screens of text	Short, easy-to-read screens, interactive animations, photos and diagrams, videos, puzzles					
Level of Interaction with Instructor	Clerical/technical support only Interaction only when sought by the student	Certified driving instructors provide personalized feedback on tests, assignments, and progress					
Time Requirements	Minimal; students advance through material as fast as they can Students can skip all lessons and take final exam	Lessons required to be spread out over a number of days/weeks Timers prevent skipping or moving too quickly through lesson screens					
Linkage with Other Training	None; standalone online program Enrollment in separate on-road training course required	Integrated behind-the-wheel component, either with parent or other driving school/instructor					
Level of Parental Involvement	Parents take no part; students complete the program independently	Parents copied on all correspondence with students, including feedback on assignments Parents proctor tests, provide in-vehicle instruction, verify student driving experience					
Security & Identity Verification	Not addressed Limited to "I Accept" button after words of caution regarding fraud	Students must verify identity by answering security questions throughout course Tests monitored by parents using pass codes, or given in-person					
Exam Difficulty/Rigor	One test only that can be re-taken after seeing correct answers Very easy multiple choice questions	Multiple versions of exams with large, challenging question pool Must complete additional assignments prior to re-taking a failed exam					

Taken together, the distinctions and variations depicted in Figure 3 yielded a large range in the degree to which these courses encouraged active learning and promoted long-term information retention.³ While very little evaluation specifically of online basic driver education programs has been conducted to date, existing research on the effectiveness of Internet-based courses in general does suggest that instructional models encouraging active learning, coupled with human interaction and feedback, result in particularly valuable experiences.³

Online driver education courses, therefore, that required students to find and report on information from outside sources, or apply skills learned online in follow-up lessons behind the wheel, appeared to have the potential to provide more effective learning experiences.³ Similarly, some courses made a greater effort to promote long-term information retention by providing repeated exposure to concepts and requiring comprehensive final examinations.³ Absent formal evaluations specific to online driver education courses, though, it is unknown whether these more robust learning experiences actually lead to safer drivers and decreased crash rates.

Taking into account all of the various qualities and characteristics presented in Figure 3, such as degree of human interaction, testing methods, and information presentation, researchers identified *levels of student engagement* as the underlying basis on which to classify the programs.³ For purposes of the classification, *engagement* was defined as "the extent to which a student must actively participate in the learning exercises and the extent to which the student must participate in outside activities as part of the online driver education course."³

Figure 4 presents each of these levels – low, average, and high – and provides descriptions and examples of typical features representative of that category. The far-right column provides the rough breakdown of the share of identified courses accounted for by each classification level.³ As noted earlier, this system excludes the unique four-hour Florida programs.

Figure 4. Classification of Online Driver Education Courses by Student Engagement Levels, 2010

Student Engagement	General Description	Typical Features	Proportion of Courses (n=45) at this Level
Low	 Least interactive of all classification levels Courses create passive learning environment; can be finished quickly Students may complete without ever reviewing or learning the material 	 Text-heavy screens Ability to click through text at any speed, or skip entirely Ability to take tests repeatedly, and copy/ share responses 	15%
Average	 Representative of most common types of driver education courses teens take online Require more than a half-day to complete Teens generally can complete independently without seeking help from parents or instructors 	 Short, readable screens with images, clickable animations, videos, etc. Content repetition to encourage retention Comprehensive exams with attention to test security Help available via internet or telephone from course instructors 	50%
High	 Virtual classrooms with high degree of human interaction Require active learning Certified instructors or parents track student progress, provide feedback May be longer than traditional inclassroom programs 	 Graded homework assignments Concurrent behind-the-wheel activities, either with parents or professional instructors Students seek and analyze additional information, and apply what they learn 	35%

Discussion and Conclusions

This examination of the current state of online basic driver education programs reveals how varied the products available to teens today are in terms of their teaching methods, robustness, and content delivery, as well as their promotion of active learning and information retention. With the rapid proliferation of these programs, many states and course providers have expressed support for stronger regulations and oversight to ensure that the courses being offered are of high quality. Toward this end, the new NHTSA administrative standards may also prove helpful in providing useful guidelines for managing successful programs.

Current research and standards for online learning, such as those established by iNACOL, suggest numerous takeaways from this study regarding the effectiveness of program offerings. Courses combining accessible instructors, parental oversight requirements, comprehensive testing, and repeated exposure to topics and concepts are thought to be particularly effective, though their ability in the driver education field to create safer drivers has not been assessed. As online driver education programs evolve, incorporating and building upon these characteristics may be an excellent starting point, with additional validation and evaluation required to ensure they are effective in developing the skills teens need to be safe drivers.

That said, the "best" model for online driver education programs has yet to be determined. Researchers stress that there is a critical need for scientific evaluations of program effectiveness and impact on young driver safety.³ In addition, with the rapid proliferation of these online programs, states have struggled to keep pace with their regulations. Researchers suggest that efforts be directed toward building on current knowledge regarding online learning to develop scientifically supported standards for web-based driver education courses specifically.³

Notable success in reducing teen fatalities has been achieved through graduated driver licensing (GDL) systems, wherein new drivers are granted increased privileges as they gain experience. By limiting exposure to high-risk situations such as driving at night or with passengers, GDL laws allow teens to gain much-needed experience behind the wheel before being exposed to riskier circumstances. With some states considering implementing certain driver education requirements as part of their GDL programs, this study further highlights the importance of establishing clear standards and guidelines for online courses.³

With many teens likely to keep looking to complete their driver education online, and with motor vehicle crashes still the leading cause of death for teens and young adults, this study comes at a critical time for states, course providers, families, and others who are grappling with the task of saving lives on the nation's roadways. With improved oversight, more interactive and effective courses, and increased parental involvement, online basic driver education courses may be an important new tool in the effort to keep teens safe, but additional validation and evaluation research is needed.

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