

Teens have the highest crash rate of any group in the United States.



Improving Parental Supervision of Novice Drivers Using an Evidence-Based Approach

August 2013



Title

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Authors

Arthur H. Goodwin (UNC Highway Safety Research Center), Lewis H. Margolis (Maternal and Child Health, UNC School of Public Health), Robert D. Foss, Stephanie Harrell, Natalie P. O'Brien, and Bevan B. Kirley (UNC Highway Safety Research Center)

Acknowledgements

We would like to thank several individuals for their help and guidance in developing the Parent Coaching session, including Dr. Wallace Hannum with the UNC School of Education, Dr. Ruth Shults with CDC, and Jurek Grabowski and Brian Tefft with the AAA Foundation for Traffic Safety.

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607 14th Street, NW, Suite 201
Washington, DC 20005
202-638-5944
www.AAAFoundation.org

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Overview

The goal of this project was to develop a cutting edge, evidence-based program to assist parents who are responsible for supervising a beginning teen driver. This report describes the background and development of the “Parent Coaching” session, and results of initial concept testing.

The Parent Coaching session emphasizes what parents can do to help their teen develop more quickly into an experienced, safe driver. The content was developed with guidance from recent research about the strengths and weaknesses of parental supervision of teens’ early driving, as well as findings from recent, on-going naturalistic studies of teenage driving. During the two-hour in-person session, parents view and discuss actual video clips of parents and teens during supervised driving. This helps parents understand the situations and challenges that are likely to occur during practice driving, and how they can best handle those situations. The session also highlights the importance of teens obtaining considerable driving experience in a wide variety of situations/conditions. The failure to provide this variety is one of the main, documented shortcomings in how most parents currently approach supervision of their teen’s driving. Additionally, parent-teen communication is a major focus of the session; specifically, how parents can help their teen begin to develop a higher-order understanding of driving.

The mode of delivery adheres to well-established principles of adult learning, which differ in significant ways from didactic approaches oriented toward child learning in traditional classroom settings. Rather than presenting facts and statistics, with participants viewed as passive recipients of information, the session is centered on discussions and problem-solving activities. During discussions, parents are encouraged to draw upon and share their own experiences. The size of sessions is limited to 8-12 parents to foster participation and interaction among participants.

This report is structured as follows:

- Background
- Adult learning
- Behavior objectives for parents
- Developing the Parent Coaching session
- Concept testing
- Limitations
- Summary and next steps
- References

Background

Although graduated driver licensing (GDL) systems have been highly successful in reducing crashes among teenagers,^{1,2} novice drivers continue to crash at much higher rates than those with a few years of driving experience.^{3,4} Most young driver experts believe improving parental involvement with novice drivers is among the most promising approaches for further reducing young driver crashes and fatalities.⁵ Parents influence the timing of licensure, supervise their teens' early driving experience, influence choice of vehicles, are the primary “enforcers” of their teens' license restrictions, and may further limit driving conditions or extend limits beyond what the state requires.

To assist parents with this responsibility, there are hundreds of sources of advice available of widely varying detail and quality. Some try to help parents teach teens how to drive during the learner stage; others encourage parents to enforce night, passenger, and other driving limits during the provisional license stage. At present, however, there is no evidence that any parental advice reduces teen driver crashes, or even influences parental behavior. Simply providing parents with written materials has shown no measurable effect on their behavior.^{6,7} The most well-funded and well-tested program designed to date – the *Checkpoints* program – uses a variety of persuasive communications and a driving agreement to increase parental limits on teens once they begin independent driving. Even this program has shown only modest effects on parent behavior, and no effect on subsequent teen driver crashes.⁸⁻¹⁰ The *Checkpoints* materials are delivered passively, which may be inadequate for producing the behavior change necessary for reducing crashes.

Hence, a critical question is how to motivate parents to adopt the most useful parenting practices for supervising and managing a teen driver. In one effort to provide this motivation, policy-makers have begun to enact legislation requiring parents to attend a formal orientation session when their teen begins the licensing process. Jurisdictions with this requirement include:

- **Connecticut:** Each parent/guardian must attend a two-hour mandatory parent training class, in conjunction with an eight-hour course that all new drivers must complete. The parent course is taught by licensed driving school instructors and covers the state's GDL program, driving skills needed to pass a road test, the importance of developing good driving skills, and driving behaviors to avoid.
- **Massachusetts:** Massachusetts parents are required to attend a two-hour education program (without their teens) as part of a “train-the-trainer” initiative. During the program, parents learn about the state's driver education program, the junior operator's law, and the importance of parents as coaches. The program includes some time for questions and discussion.
- **Northern Virginia:** Parents/guardians in the Washington, DC Metropolitan area of northern Virginia[†] are required to attend a 90-minute traffic safety program together with their teen as part of the in-classroom portion of the driver education

[†] The requirement covers Virginia's Planning District 8 which includes Prince William, Fairfax, Loudoun, and Arlington counties and the independent cities of Manassas, Manassas Park, Falls Church, and Alexandria.

curriculum. The program requirement must be met before a student can receive a Driver Education Certificate of Completion card (DEC-1 card). The program covers the licensing process and Virginia's GDL system, how to coach a new driver, and discussion about the risks of distracted, aggressive, and impaired driving.

Other States, such as New Jersey, have recently introduced legislation with similar requirements. Meanwhile, another 20 states offer voluntary training opportunities for parents.¹¹ More locally, a number of individual driving schools and school systems across the country require parents to attend an orientation session. Given the increasing focus on parents of teen drivers, it seems likely that other jurisdictions will soon enact similar mandates.

Requiring attendance at a session will unquestionably get the attention of more parents than simply providing written, web-based or other types of information. However, there is still uncertainty about what should be done during a brief (90 – 120 minute) session to maximize the likelihood that parents take action and do the kinds of things that demonstrably improve teens' learning. Unless these sessions are based on scientific evidence documenting what parents need to know, what will encourage parents to act, and what will increase the likelihood of positive outcomes if they do act, it is highly likely that a golden opportunity will be missed.

Until recently, there was no evidence about parental supervising behaviors that could provide guidance for needed content or structure of parent sessions. To address this we conducted a first-of-a-kind study, using in-vehicle cameras and multiple interviews, to thoroughly examine how parents supervise young beginning drivers during the learner permit phase of the licensing process.¹² The study revealed substantial interest, concern and commitment by parents. It also identified several difficulties that parents confront, ranging from mundane issues like busy schedules of teens and parents which severely limit opportunities for supervised driving experience, to more substantive issues. Among the latter is the failure of many teens to obtain practice in a wide variety of settings such as darkness, inclement weather, highways/interstates, rural roads and heavy traffic. Rather, most teen practice occurs during "routine" trips that offer a fairly narrow range of experience. Moreover, the study revealed a widespread failure of parents to transfer their own wealth of wisdom about driving to their children. This is not surprising, as most adults are not aware of how much they know that is central to safe driving. They have long since forgotten how overwhelming and unsettling it can feel to be a learner tackling a complex undertaking that requires many months, if not years, to master. Moreover, no parents of current beginning teenage drivers experienced the stepwise approach to becoming a driver that is embodied in modern GDL programs.

We believe many parents are well-equipped to be mentors to their children as they begin driving. They know their teen well, and understand which types of interpersonal approaches work, and which don't. They are also highly experienced drivers who know a great deal about the subtle aspects of driving, including how to recognize and avoid potential dangers. This is not to say that all parents are "good drivers" – that is, they do not always avoid risky actions or adhere to driving regulations, nor do they have the vehicle-handling skills of a professional driver. Parents do, however, bring the knowledge and understanding of a highly experienced driver, knowing situations and actions that carry

increased risk. Presently, it appears few programs try to assist parents in sharing this accumulated driving “wisdom” with their teens.

The seeds of the next policy effort to influence parental action are evident in the Connecticut, Massachusetts, and Virginia mandates for parents to attend an orientation session. If such sessions take full advantage of the opportunity provided, this could be a highly promising approach for encouraging parents to improve their supervisory practices. The goal of the present study was to develop a training session for parents of new drivers founded on recent evidence of how parents can help their teen become a wiser, safer driver. The mode of delivery of the session was based on well-established principles of adult learning, as described in the next section.

Adult Learning

As observed by Zemke and Zemke, “Adults can be ordered into a classroom and prodded into seats, but they can’t be forced to learn.”¹³ Fortunately, a sizeable research literature on adult learning identifies effective methods and techniques for increasing the likelihood that adults will learn. This literature guided our thinking and choices as we designed the session for parents.

Some of the key principles of adult learning include:^{13,14,15}

- Adults learn more effectively through experiential techniques such as discussion, problem-solving and dynamic activities than they do through passive listening. Lecture presentations should be limited as much as possible.
- Small groups can create a learning environment that is more engaging than either large group or one-on-one approaches. Small groups promote teamwork, encourage participation and cooperation, and provide opportunities for peer support.
- Adult learners’ experiences can be a valuable resource. Having adults share situations and perspectives from their own lives not only provides useful information for others, but makes learning a cooperative enterprise in which both teachers and learners have something to contribute.
- Concepts should be presented one at a time so learners have time to organize and integrate information. To increase the likelihood new information will be retained, it is important to introduce only a small number of new concepts and to summarize these concepts frequently.
- Analogies and “storytelling” can help adults incorporate new knowledge into their existing knowledge or understanding.
- To enhance learning, multiple instructional formats should be used whenever possible; for example, combining group discussion with videos, printed materials, and other media.

Each of the above principles was incorporated into our session for parents of new drivers. Rather than presenting facts and statistics in a passive environment, the session involves discussions and problem-solving among participants. Group size is limited to 8-12 parents to foster participation and interaction. Parents are encouraged to draw upon their own experiences and to share these with the group. These include prior experiences in supervising a novice driver, challenges in communicating with teenagers, expectations for the learner stage, or anticipated problems. Analogies are used to help relate concepts with existing knowledge, and videos and other instructional tools are incorporated throughout. Finally, the parent session focuses on just a few key learning objectives, and a brief summary is included at the end of each activity to emphasize and reiterate what was learned.

The literature on adult learning shows motivation to learn is greatest during certain windows of opportunity, when adults reach a point in life where they see a need for learning something new or different. Also key is having the opportunity to apply newly learned information quickly, so new knowledge and skills are not lost. Accordingly, the parent session was created with the goal of reaching parents at the point when their teen has just obtained a learner's permit. This seems the optimal time for both engaging parents and encouraging them to take action to incorporate what they have learned in supervising their teen.

Behavior Objectives for Parents

The first step in developing an orientation session for parents was to determine the essential behavior objectives of the session. Recognizing that it's unrealistic to expect much in the way of behavior change or adoption of new behaviors as the result of a single encounter with parents, we spent considerable time discussing what we believe are the few most important "take away points" for parents. Ultimately, we identified two main behavior objectives that current evidence suggests are most likely to produce safer teenage drivers if they are effectively deployed by parents. These are what we want parents to *do* following participation in the program.

Behavior objective #1: Ensure teens drive "enough" during the learner license stage

"Enough" was defined as making sure the teen has considerable experience in a wide variety of situations, to a point where the parent feels confident the teen could handle the same situation when driving unsupervised. In most cases, the parent will need to go beyond simply supervising routine trips to ensure the teen obtains considerable experience driving in inclement weather, darkness, and heavy traffic, and on rural roads, divided high-speed expressways, etc. Teens who have completed the extended learner stage have high crash rates when they begin driving unsupervised.^{16,17,18} Clearly they learn a great deal during those first several months of independent driving as reflected by the steep drop in crashes during that period.³ Ideally, at least some of this learning should have taken place during the supervised driving period. Crash data and modern learning theory suggest the only way to accomplish this is by doing. Hence, a primary goal is to persuade parents to provide ample opportunities for this learning to occur during the initial learner stage.

Although teens need experience in a wide variety of settings, it's important to begin in benign driving settings and conditions, gradually introducing variety and new challenges as appropriate given the teen's competence and comfort. Under modern GDL systems, families have 6-12 months to do this, allowing time for a steady progression from simple to complex settings. It is important that new challenges include both the external setting (e.g., inclement weather, darkness, highways, rural roads) and the internal setting (e.g., music, passengers).

Behavior objective #2: Transfer parents' driving "wisdom" to their teen

Parents have a well-developed understanding of driving based on their many years of driving experience. Their crash rates are low, in large part, because they have learned through experience how to identify and avoid potential dangers. At present, research suggests parents do little during the learner stage to communicate "higher order" concepts, such as perceiving hazards or anticipating both predictable and erratic actions of other road users.¹⁹ This may not be surprising, since parents may not even realize what they understand about driving that their teen does not. Nonetheless, the lengthy learner periods now included in young driver licensing systems provide an opportunity for parents to help their teens develop not only into "skilled" drivers, but also into "wise" drivers.

Although sharing wisdom may be beneficial, during the initial weeks of driving it may be best to limit communication to the essentials (e.g., providing directions, warning of immediate dangers). Staying quiet and appearing calm is important, as is providing positive reinforcement. Once teens are comfortable and can extend their focus, parents can begin transferring wisdom. It is also important to recognize that teens are often nervous and can be hypersensitive to words as well as non-verbal communication. Therefore, effective communication must consider both *what* the parent says and *how* he or she says it.

Developing the Parent Coaching Session

Like many programs that are built from scratch, development of the Parent Coaching session was a difficult and sometimes messy process. With each step forward, there were often two (or more) steps back. Initially, we held a number of brainstorming sessions to formulate possible content for the session, designed to move parents toward one of the two behavior objectives mentioned above: 1) ensuring teens drive "enough" during the learner license stage, and 2) transferring parents' driving "wisdom" to their teens. The overarching goal was to ensure parents were both motivated and equipped to supervise their teen in ways that should increase the speed with which the teen moves from driving like a complete novice to driving like an experienced driver.

During these brainstorming sessions, we generated dozens of potential activities for parents. Some were just kernels of an idea; others were more thought-out. From these, we selected approximately 20 activities that we considered most promising for further development. Each of the activities was assigned to a team member who took the lead role in expanding and giving substance to the activity. A template was created to assist in laying out goals, resources needed, steps involved, etc. Once an initial draft of the activity was ready, the entire team reviewed the activity description together and made further

modifications to the activity. We then conducted “dress rehearsals” for each activity within our research team.

During this process, several activities clearly seemed to convey important points better than others. Eventually we narrowed our list to six activities that seemed most promising and logistically feasible for a small group meeting with parents in a community setting. These six activities were then tested during several rounds of “concept testing” with groups of parent volunteers (see the next section). The concept testing was helpful for determining what worked about each activity, what didn’t work, and where improvements were needed. This was an iterative process that took many months to complete. After each parent session, we fine-tuned the activities to make them more engaging and to ensure the main point of the activity was clear. The revised activities were then tested with additional groups of parents, and further refinements were made. As an example, it became clear during our test sessions that parents were eager for an opportunity to talk with other parents who were in the process of teaching a teen to drive. For that reason, we incorporated small-group discussions among parents into several of the activities. Additional testing suggested parents seemed to enjoy and benefit from this structured, but informal conversation with other parents.

In sum, the process of developing the Parent Coaching session was lengthy and complex. After generating an initial list of potential activities, considerable trial-and-error was needed to determine which activities were most promising, and to produce activities that were enlightening for parents. Testing the activities with parent volunteers was critical to this process. Our impressions from these testing sessions – along with the feedback we received from parents – was essential for making enhancements to each activity.

The objectives of the final six activities for parents are described below:

- **Just Starting Out.** The primary goals of this activity are to help parents understand (1) that learning to drive can be overwhelming for beginners, and (2) that driving is not simply a matter of handling the vehicle, but rather a complex cognitive task that takes lots of practice to master.
- **Simple to Complicated.** The goals are to help parents understand (1) the importance of their managing the driving environment, both inside and outside the vehicle, and (2) that teens eventually need experience in a wide variety of settings to be fully prepared for independent driving.
- **Sharing Wisdom.** The goals are (1) to show how inexperienced drivers can miss important cues in the driving environment that an experienced driver would typically notice, and (2) how parents can help their teen develop the ability to recognize these cues and avoid trouble.
- **Effective Communication.** The goal is to help parents understand both effective and ineffective communication so they are better prepared to begin sharing their driving “wisdom” with their teen in a helpful manner.

- **Getting Enough Practice.** The goal is to help parents understand the importance of practice and how to overcome barriers to getting practice. In addition, parents learn about the value of a parent-teen driving agreement as a way to address these barriers.
- **Putting It All Together.** The goal is to help parents learn about their state’s licensing requirements, and how parents can know when their teen has obtained “enough” practice during supervised driving.

During all but the final activity, parents view real-life (not staged) driving clips showing parents supervising a novice teen driver, or slightly-older teens who were no longer driving with supervision. Each activity includes considerable group discussion, and several involve brainstorming and problem-solving. At the end of each activity, the facilitator guides parents through a wrap-up exercise to summarize what was learned from the activity. We also created several worksheets to supplement the activities. The worksheets are used by the facilitator to clarify and illustrate important points during the session. They also included specific actions parents could take at home following the session. They include:

- **Sharing Wisdom.** The goal of this worksheet is to help parents understand the rationale for sharing wisdom with their teen, and specific steps for how they can do so. This worksheet accompanies the “Sharing Wisdom” activity.
- **Parent/Teen Driving Agreement.** The goal of this worksheet is to help families make a plan for ensuring teens gets plenty of practice in a wide variety of settings. The driving agreement accompanies the “Getting Enough Practice” activity.
- **Graduated Driver Licensing.** The goal of this worksheet is to help parents understand the rationale for GDL and the role of parents in the licensing process. This worksheet accompanies the “Putting It All Together” activity.
- **Teen Driver Progress Worksheet.** The goal of this worksheet is to help parents assess their teen’s growing experience and understanding as an aid to determining when their teen has had sufficient experience in different driving situations. This worksheet accompanies the “Getting Enough Practice” activity.

Lastly, we created a visual presentation to assist the facilitator in conducting the session. Bullet points show the main goal of each activity and emphasize important takeaway points. Additionally, videos were embedded within the presentation to create seamless transitions between discussions and driving clips.

Concept Testing

As mentioned above, once the activities for parents were developed, the next step was testing the Parent Coaching session with small groups of parents of novice drivers. Our objective was to determine which activities resonate with parents and most effectively achieve desired goals. This testing was conducted in two waves, separated by approximately eight months. Between the two waves, a number of changes and

improvements were made to the content of the activities and the structure of the session based on feedback obtained from parents during the initial series of sessions.

Parent recruitment

We recruited parents for the concept testing via two mass emails to the local University community. UNC's mass email system was created to inform faculty, staff, and students about events at the university, and to recruit individuals for various research studies being conducted on campus. The advantage of this approach was it allowed us to reach a large number of parents very quickly. The disadvantage is the sample of volunteers might not be representative of parents more generally. The mass emails were distributed to every employee at the university. We received 141 responses from parents of teen drivers who were interested in participating in the study.

Over the two waves of testing, we conducted nine sessions with a total of 70 parents. The number of parents attending these sessions ranged from four to ten. Each session lasted approximately 2 to 2½ hours. Sessions were held at different times of day to accommodate the schedules of parents. Food and drinks were provided at each session, and parents received \$50 for participating.

The 70 parents represented a fairly diverse group in terms of their background and experience with supervising a novice teen driver. Approximately half had a child who would soon be eligible for a permit. Some parents were already supervising a teen with a learner's permit, while a number of parents had one (or more) older teen(s) who already had a license to drive unsupervised. Participants included 16 fathers and 54 mothers. Sixty-four percent of the sample was Caucasian, 30 percent was African-American, and six percent was Asian. They ranged from 35 to 58 years old, with an average age of 48.

The sessions were facilitated by a member of the research team with extensive experience working with adult learners in small group discussion formats. The facilitator began the session by welcoming parents and providing an overview of the study. He then led parents through the six activities. Between activities, parents filled out a brief questionnaire providing thoughts and feedback about the activity they had just completed. At the end of the session, parents completed a final questionnaire about the entire program.

Responses to the session

Overall, parents responded quite positively to the Parent Coaching session. They were highly engaged and there was a great deal of lively discussion. Based on responses to the post-activity questionnaires, it appeared most parents understood the main point of each activity. Most importantly, parents seemed to have a number of insights and "epiphanies" over the course of the session. The nature of the sessions varied, as is to be expected when following adult learning principles designed to incorporate participants' experiences and perspectives in the process. Some groups of parents were more animated than others, but the experience seemed to be highly positive for nearly all parents.

This impression was reinforced by responses to the self-report questionnaire. One item examined whether parents thought activities were easy to follow. Parents rated each activity on a scale from 1 to 10, with anchors of "confusing" (1) and "easy to follow" (10). A

second question looked at whether parents thought the activity was interesting, with anchors of “dull/boring” (1) and “interesting/engaging” (10). The table below shows the average scores on the 10-point scale for these two questions.[†]

Activity	Easy to follow Mean (range)	Interesting/ Engaging Mean (range)
Just Starting Out	9.29 (7-10)	9.05 (7-10)
Simple to Complicated	9.13 (5-10)	8.94 (6-10)
Sharing Wisdom	9.41 (7-10)	9.31 (6-10)
Effective Communication	9.41 (7-10)	9.46 (7-10)
Getting Enough Practice	9.36 (7-10)	8.96 (7-10)

Each activity was rated on a 1-10 scale, where 10 is the highest (best) rating.

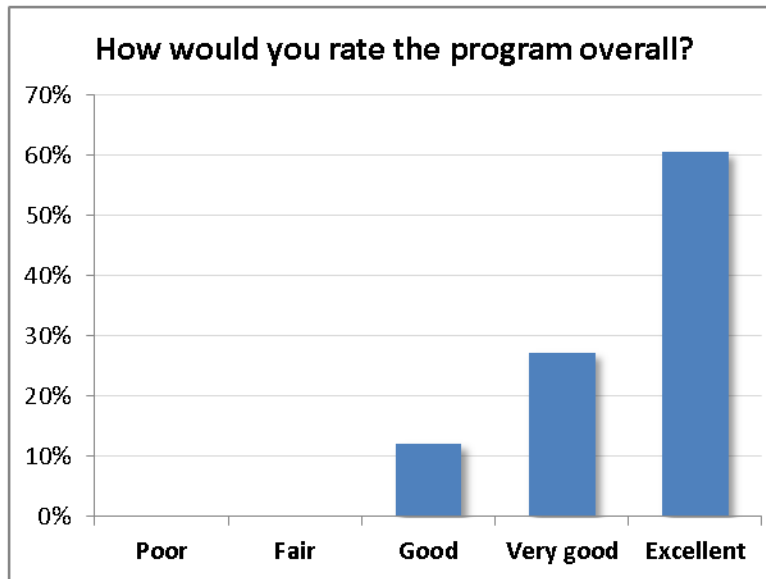
Parent ratings were high on both questions, with mean scores of roughly nine or higher on the 10-point scale for each activity. Scores were particularly high for the “Sharing Wisdom” and “Effective Communication” activities. The lowest rating received on any activity was a 5 for whether the “Simple to Complicated” activity was easy to follow.

Parents were also asked to indicate their agreement with the following statement: “The activity would be useful for a parent who is, or is about to begin, supervising a novice driver.” Responses on this item are shown below.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Just Starting Out	60%	36%	4%	0%	0%
Simple to Complicated	67%	29%	4%	0%	0%
Sharing Wisdom	75%	25%	0%	0%	0%
Effective Communication	92%	4%	4%	0%	0%
Getting Enough Practice	74%	26%	0%	0%	0%

Again, parents were highly positive in their ratings of the session. Nearly all felt each of the five activities would be useful for other parents who will be supervising a novice driver. At the end of the session, parents were asked several questions about their overall assessment of the program. The first question was, “How would you rate this program overall?” As shown below, parents were very positive in their overall rating of the program.

[†] The activity “Putting It All Together” was developed later than the other activities, so there were insufficient responses to include this activity in the tabulations.



All 70 parents (100%) said they would recommend that other parents of new drivers attend the session. Eighty-one percent (81%) thought the session should be *required* for parents of all new drivers. When asked about the length of the session, 82 percent said it was “just right;” 18 percent felt it was “too long.”

The positive response to the session was further reflected in comments that parents wrote on their surveys. A few examples:

- “This program helped me realize how important my role is in my children’s driving experience. There’s a lot more to being the ‘supervisor’ than I realized.”
- “Very helpful real-life examples. I wish I had taken this class before my children got their permits. The clips are awesome.”
- “I think it was great. Very useful to see scenarios and see videos, hear other parents experience the same issues.”
- “This course provided more information than I ever imagined before participating.”
- “I think this is a great program and I hope it’s developed into a finished product that is available to all parents before their teens take driver’s ed.”
- “I want all parents to have to see this before their kids start driving!”

When asked what they liked most about the session, parents typically cited the video clips and the small group interaction/discussion with other parents. Some parents also mentioned specific skills learned (e.g., strategies for getting more practice, techniques for communicating with their teen), the handouts for parents, and the session facilitator. Parents also provided a number of specific suggestions for improving the session.

Overall, the small group format seemed to create a learning environment that was highly engaging for parents. The small groups appeared to promote teamwork, encourage participation and cooperation, and provide opportunities for peer support. Moreover, parents seemed to appreciate having the opportunity to share their experiences and perspectives with one another. The end result was a more cooperative enterprise than could have been achieved in a traditional, lecture-oriented setting.

Limitations

Although the findings from the concept testing are encouraging, there are several limitations/cautions that must be considered. First, the findings are based on self-report and do not reveal whether (or how) parents would use the information and/or insights gained from their participation in the session. Second, the findings come from a sample of parents who volunteered to participate in a research study. Parents who are required to attend this type of session may not respond as favorably. Third, the sample consisted mostly of university employees. By and large, this was a well-educated group (all had at least some college experience, with most holding a bachelor's degree). In sum, it is important to keep in mind this was an initial assessment of the session's efficacy; that is, the extent to which the session could have a positive effect under ideal circumstances. The session's effectiveness under "real world" conditions is not yet known.

Summary and Next Steps

With the limitations above in mind, the findings from the concept testing represent an important first step. They suggest the Parent Coaching session was well received by parents, and that the program has a good potential to produce beneficial change in parents' supervisory efforts.

The next step[†] will be to pilot test the session with larger groups of parents to examine its effect on parental behavior. We plan to randomly assign several hundred parents to one of three groups: (1) the Parent Coaching session; (2) a parent orientation session that uses a more traditional approach similar to those being used elsewhere (e.g., an existing state-mandated program or a parent program available through an existing commercial provider); and (3) a comparison group that receives no additional information beyond what is currently provided through the standard Driver Education curriculum. Following the class, we will conduct interviews with both parents and teens to measure how the different class curricula influence the amount and type of supervision that parents provide for their teen and whether this results in safer driving. Measures of teens' driving development will be included as well. The most basic of these is simply self-reported crashes. Although crashes are rare events, they are sufficiently common among novice drivers (20-25% experience a reportable crash during their first year of driving⁴) to provide a reasonably sensitive measure of driving, especially if minor crashes are also considered.

Other questions we will consider as development of the Parent Coaching session continues include the following:

[†] This follow-on validation will be conducted with funding from the North Carolina Governor's Highway Safety Program.

- **Can contact with parents be maintained after the session ends?** Recognizing the difficulty of changing behavior in a single, brief (two hour) contact with parents, we are considering several options for reinforcing the behavior objectives of the session through additional contacts with parents. This might include a website, smartphone app, or other technologic approaches.
- **Is it possible to communicate with parents who did not attend the session?** Typically, only one parent from a family will attend a parent orientation session. However, in most families more than one parent acts as a supervisor on at least some occasions.¹² Hence, we are exploring ways to reach the parents who did not attend the session. It is important the parent team be consistent in their goals and supervising practices.
- **Should teens be involved in the program?** At present, the session focuses exclusively on parents in an attempt to influence the parent-teen partnership. However, there may be value in incorporating teens in some aspects of the session.
- **Is the Parent Coaching session scalable?** In developing the session, we were more concerned with creating a model/exemplary program for parents than producing something that could easily be conducted on a large scale. The Parent Coaching session, in its current form, is not appropriate for groups of more than 15 parents. Larger groups would inhibit the interaction and discussion that are critical to the session's value. However, for cost and logistical reasons, it may be difficult to implement this kind of session for an entire population of parents.
- **Could the Parent Coaching session be delivered online or through other media?** Although the video clips of parents and teens could be viewed online, the interaction between parents, with guidance from the facilitator, would be extremely challenging to accomplish online. These interactions are central features of the session, not merely a sidelight of the in-person format. For the session to work through on-line delivery, it would be important to capture the interactive, face-to-face dimension of the session. New methods and technologies in online education may make this feasible, but there are a number of challenges that would need to be met.

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