

"The Model Teen Driver: Delphi Process"

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DE & Training

- ***Classroom instruction & in-car training***
- ***Mixed results for driver safety***
 - ***Teaches teens basic driving skills***
 - ***May not 'weed out' less capable students (threshold for passing is relatively modest)***
 - ***Increases risk of exposure by allowing >18 teens to drive***
 - ***Historically not linked to reduction in tickets & crashes***
 - ***However, in Oregon & Texas teens can choose to take DE or not***
 - ***Research shows that those w/out DE have more tickets & crashes***
- ***Institutional constraints***
 - ***Short duration & limited driving instruction***
 - ***\$\$\$***
 - ***No identified or validated model for a "safe teen driver"***

DE & Training

- **Essential problem -- no identified or validated model for a “safe teen driver” in terms of ability, knowledge, skills, attitudes, motivation, or any other measurable indicator**
 - **Effective education is based on desired outcomes**
 - **Guides the development & evaluation of design, delivery, & assessments**
 - **DE standards are inconsistent & incomplete**
 - **All states have program standards**
 - **Some have curriculum content standards to guide lesson planning**
 - **Fewer have student performance standards to indicate levels of mastery**
 - **Current DE configuration does not meet current needs**
 - **30 hours in the classroom & 6 hours behind-the-wheel**
- ➔ **Identifying & achieving appropriate educational outcomes should result in improvements to driving ability, knowledge, skill, attitudes, & motivation**

The Model Teen Driver: Delphi Process

- **Purpose**

- **Determine a “safe teen driver” in terms of ability, knowledge, skills, attitudes, motivation, or any other measurable indicator**

- **Delphi Process**

- **Research method**

- **Efficiently & effectively elicit opinions on a particular topic from a panel of experts with the goal of obtaining group consensus in the end**

- **Characterized by**

- **Anonymity for all respondents**
- **Use of a broad question to elicit initial responses**
- **Ranking of initial responses in successive iterations with controlled feedback**
- **Statistically interpretable group responses**

- **This method should yield valuable information to assist in the development, implementation, modification, evaluation, & promotion of young driver policies in DE & GDL**

The Delphi Process

- **Step 1: Define the problem & determine one broad & open question or a series of questions to which experts will respond**
 - **Problem: No validated model for safe teen driver**
 - **Question: What is a “safe teen driver” in terms of ability, knowledge, skills, attitudes, motivation, or any other measurable indicator?**
- **Step 2: Send the question or questions to everyone who is in the expert group & ask them to respond**
 - **Survey #1**
- **Step 3: Collate expert responses into a single anonymous list or sets of lists**
- **Step 4: Send the collated list/lists back out to everyone with the request to score each item on a given scale (typically 1 to 5)**
 - **Survey #2**
 - **Items scored in terms of relevance/importance (1=low to 5=high)**
 - **Suggestions for further items or any other changes made**
- **Repeat Steps 3 & 4 as many times as is deemed appropriate**
 - **Surveys #3-6**
- **Little editing of expert responses by researcher (most was done in accordance with participant feedback) to “preserve the spirit” of the Delphi process**

Methods

- **Sample**

- **Experts in the field of teen driving in research & driver training as identified through:**

- **Traffic Education & Regulation Committee of the Transportation Research Board (TRB)**
- **American Driver & Traffic Safety Education Association (ADTSEA)**
- **Driver Education & Training Administrators (DETA)**

- **Participants**

- **79 identified & invited**

- **52 agreed to participate (66%)**
- **About 1/3 of each**
 - **Driver education/training**
 - **Administration**
 - **Research**

- **Procedures**

- **Research invitations & informed consent were emailed**

- **Initial & subsequent survey iterations were online**

- **Participants were sent initial & follow-up emails with links to the on-line surveys**

Results

- **Data reduction**

- **Expert responses were categorized**
- **Experts ranked each item, and low-ranked items were dropped**
- **Expert comments were considered for reducing redundancy, breaking up ideas within items, and reducing categories**

Survey	Number of Respondents	Number of Items	Number of Categories
Survey #1	44 (85%)	389 total responses (each expert listed up to 10 answers to question)	N/A
Survey #2	47 (90%)	304 (from #1 that “fit” as “A safe teen driver is...”)	18
Survey #3	45 (87%)	175 (after low-ranked from #2 dropped)	16
Survey #4	40 (77%)	126 (after low-ranked from #3 dropped)	16
Survey #5	43 (83%)	65 (after low-ranked from #4 dropped)	9
Survey #6	37 (71%)	39 (after low-ranked from #5 dropped)	6
FINAL LIST	N/A	18 (after drops & expert final comments)	3

Reduction of Categories

Survey #1	#2	#3	#4	#5	#6	FINAL
<i>Teen characteristics</i>	X	X	X	-	-	-
<i>Parent involvement</i>	X	X	X	X	X	X
<i>Traffic laws</i>	X	X	X	X	X	X
<i>Driving experience</i>	X	X	X			
<i>Vehicle control</i>	X	X	X	X	X	
<i>Speed control</i>	X	X	X			
<i>Visual skills</i>	X	X	X			
<i>Spatial skills</i>	X	X	X			
<i>Critical thinking</i>	X	X	X	Risk Reduction	X	X
<i>Risk taking</i>	X	X	X			
<i>Hazard management</i>	X	X	X			
<i>Substance use</i>	X	X	X	X	X	
<i>Peers/passengers</i>	X	X	X	X		
<i>Attention/distractions</i>	X	X	X	X		
<i>Responsibility</i>	X	X	X	X	X	
<i>Respect</i>	X	X	X	X		
<i>Driving attitudes</i>	X	-	-	-	-	-
<i>Defensive driving</i>	X	-	-	-	-	-

Final Categories & Items

Driving Experience (6 items)

- 1. Has had phased or graduated exposure to driving responsibilities*
- 2. Has practiced driving behaviors and decisions in increasingly complex driving situations*
- 3. Complies with all traffic laws (e.g., speed limits and seat belt use), traffic control devices (e.g., signs, lines, and signals), and GDL requirements and restrictions (e.g., nighttime driving curfews and passenger limits)*
- 4. Controls vehicle speed and position and communicates with other road users in a manner to reduce crash risk*
- 5. Understands the influence of adverse weather and road conditions on a vehicle's handling and stopping characteristics and adjusts own driving behavior accordingly*
- 6. Responds to complex and emergency driving situations appropriately, accurately, and in a timely manner*

Parent Involvement (3 items)

- 1. Has parents/guardians/mentors who know and enforce the state's GDL laws and requirements*
- 2. Has parents/guardians/mentors who provide supervised practice driving*
- 3. Has parents/guardians/mentors who monitor the teen's whereabouts in the vehicle*

Final Categories & Items

Risk Reduction (9 items)

- 1. Monitors the environment around the vehicle and searches far ahead of the vehicle to identify any driving-relevant obstacles or risks including vehicles, pedestrians, signs/signals, and road conditions, and adjusts own driving behavior accordingly**
- 2. Always wears a seat belt as the driver and ensures that all passengers wear seat belts**
- 3. Recognizes, reduces the potential for, and avoids the occurrences and influences of distractions inside and outside of the vehicle, including those related to peers, passengers, and cell phones or other electronic devices**
- 4. Never drives after using alcohol or other drugs that impair driving judgment and performance**
- 5. Never drives when impaired by drowsiness, fatigue, poor health, injury, or duress Controls emotions brought to and caused by driving situations**
- 6. Controls emotions brought to and caused by driving situations**
- 7. Recognizes and avoids driving in conditions that are too challenging Never takes intentional risks while driving**
- 8. Never takes intentional risks while driving**
- 9. Shows concern for, tolerance of, and courteousness toward other road users, including motorists, bicyclists, and pedestrians, and adjusts own driving behavior accordingly**

Discussion

- ***Delphi Process***

- ***Started out with a lot, ended with a little***

- ***Issues to grapple with***

- ***What is “safe” vs. “novice” or “responsible”***
- ***How to measure items***
- ***“Tiresome”***

- ***Final items***

- ***Reflect “safety”***

- ***6 items for Driving Experience***
- ***3 items for Parent Involvement***
- ***9 items for Risk Reduction***

- ***Useful for “outcomes”***

- ***Future research***

- ***Determine the knowledge, skills, & behaviors related to outcomes***

- ***Determine the best ways to teach them***