

High Performance Driving Instructor Training Manual



Developed by the 2003 National Driver's Education Committee
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National Drivers' Education Instructor Training Program



- **Orientation**

- The Why's and What's of a National DE Instructor Training Program

- **Classroom Instruction**

- Instructor Attributes
- Three Minute Interview
- How to Teach
- What to Teach
- Debriefing and Critiquing

- **On Track Driving Sessions**

- Session One..Introduction
- Session Two..Role playing
- Session Three..Role Playing
- Session Four..Check out

- **Be Safe**
- **Learn**
- **Have Fun**

Classroom Instruction “Instructor Attributes”



- **Positive Attitude**
 - Always encourage students
 - “This is supposed to be fun”
 - Assist in the safety and success of event
 - “Be part of the solution, not the problem”
 - Leave the Ego at home
 - This is **NOT** racing



Classroom Instruction “Instructor Attributes”



- **Professionalism**

- Use Discretion
 - In discussing students, exploits, other instructors
- Cooperate with colleagues
 - Especially in handling “issues”, such as passing infractions, etc.
- Use a communicator (helmet intercom)
- Be on time to your student(s)
- Fill out evaluations forms/log books



Classroom Instruction “Instructor Attributes”



- **Continuing Education**

- Keep current

- Learn new teaching techniques and philosophies
- Learn new cars and their characteristics
- Learn Porsche models other than your own

- **Be Safe**

- **Learn**

- **Have Fun**

Classroom Instruction “Instructor Attributes”



- **Continuing Education**

- Peer Mentoring
 - Take advantage of talents of other instructors
- Continue to improve skills as driver and teacher
- Ask for feedback from:
 - Your students, other instructors, the chief instructor, your evaluations
- Remember to enjoy and learn from your students!

- **Be Safe**

- **Learn**

- **Have Fun**

Classroom Instruction “Three Minute Interview”



- ***The Most Important 3 to 5 Minutes of the Day***
- Why have an interview at all?
 - Provides a formal meeting, one especially arranged for assessing the preparation and prior knowledge of the student
 - To provide instructors with a standardized starting point of instruction for every student



Classroom Instruction “Three Minute Interview”



- **The Fastest Way to Gain Information is to:**
 - ask pointed questions
 - get the student to talk about him or herself
 - create some humor, it relaxes people
 - show interest in the car, you need to know the car’s set-up and characteristics

Listening is crucial; it requires your full attention



Classroom Instruction “Three Minute Interview”



- **Gain Insight into Your Student’s:**
 - ***attitude***: eager, scared, know-it-all, or clueless
 - ***motives***: have fun, drive better, club race, etc
 - ***capabilities***: autocross, track experience, involved in sports such as skiing
 - ***preparation***: looked at track map, reviewed track guide, knows the meaning of the flags



Classroom Instruction “Three Minute Interview”



- **Interpreting Student Responses**

- What is the current mental state of your student
 - tired? alert? anticipatory?
- How does this person learn?
 - Is s/he a visual or auditory learner?
A combination of both?
 - Use cues from his/her answers to plan your teaching strategy

- **Be Safe**

- **Learn**

- **Have Fun**

Classroom Instruction “Three Minute Interview”



- **Formulate a Starting Point for Instruction**
 - Use the answers to your questions to plan a strategy to instruct this student
 - Do you need more information?
 - Do you have a fall-back plan?



Classroom Instruction “Three Minute Interview”



- **The four parts of the interview**
 - Social
 - Technical
 - Safety
 - Directive

- **Be Safe**
- **Learn**
- **Have Fun**

Classroom Instruction “Three Minute Interview”



- **Social**

- What do you do in real life?
- Is this your car?
- How long have you been driving it?
- Do you know anyone else at the event?
- How are you feeling?

- **Be Safe**

- **Learn**

- **Have Fun**

Classroom Instruction “Three Minute Interview”



- **Technical**

- Do you have any previous high-speed driving experience?
- What sort of changes have you made to the car?
- What kind of tires?
- Do you do your own work?



Classroom Instruction “Three Minute Interview”



- **Safety**

- Do you remember where the passing zones are?
- Do you know where the corner stations are?
- Should we review the flags?
- Did you drive in yesterday or this morning?
- Are you tired, or ready to go?
- Review emergency procedures



Classroom Instruction “Three Minute Interview”



- **Directive**

- Setting the tone for the instructional process
- Words or phrases, with hand signals
 - Brake
 - Accelerate/Lift
 - Track right/Track left
 - Turn in now
 - Unwind
 - Smooth
 - Apex
 - Shift



Classroom Instruction “Three Minute Interview”



- **Goals**

- “We are going to concentrate on”

- Vision (looking ahead) (eyes in front of the car)
- The line (turn-in, apex, track-out)
- Braking
- Being smooth
- Specifics for this individual’s needs

- **Be Safe**

- **Learn**

- **Have Fun**

Classroom Instruction “Three Minute Interview”



- **Instructor Checklist**
 - Safety items
 - Goals
 - Vocabulary
 - Driving position
 - Car
 - Let’s go have some fun!



Classroom Instruction "Three Minute Interview"



- **End of Session One...
Three Minute Interview**
- **Questions?**



Scenario One FIRST RIDE



Mentor Role: To model good teaching technique and the language of instructing. The ride becomes the standard that the candidate will practice towards in the next two rides. The mentor will drive and demonstrate the following:

1. The “three minute” interview (before entering the car).
2. “Staging orientation” where proper seat and hand positions are discussed as well as emergency procedures, hand signals, etc.
3. “Two-lap orientation” ride in which all flag stations, run-off areas and general track layout are discussed.
4. After the two-lap orientation, the mentor, still from the left seat, will demonstrate the methods of instruction that will be discussed in the classroom, including; for example, proper use of vision, teaching the line, general car placement and control, mirrors and passing, etc.
5. After the session ends, the mentor will model critiquing and goal setting in a debrief.

Classroom Instruction “ How to Teach”



- **Session Two**
How to Teach
 - How Adults Learn
 - Methods and Skills of Teaching



Classroom Instruction

“How to Teach” – Adult Learners



- **Theory of Learning – “How People Learn”**

- Levels of Learning
- Laws of Learning
- Learning Process
- Learning Curve
- Learning Styles
- Barriers to Learning

- **Be Safe**

- **Learn**

- **Have Fun**

Classroom Instruction

“How to Teach” – Adult Learners



- **Levels of Learning**

- Unconscious Incompetent: Novice
- Conscious Incompetent: Enlightened Novice
- Conscious Competent: Beginner/Intermediate
- Unconscious Competent: Advanced

Classroom Instruction

“How to Teach” – Adult Learners



Thorndike’s Laws of Learning

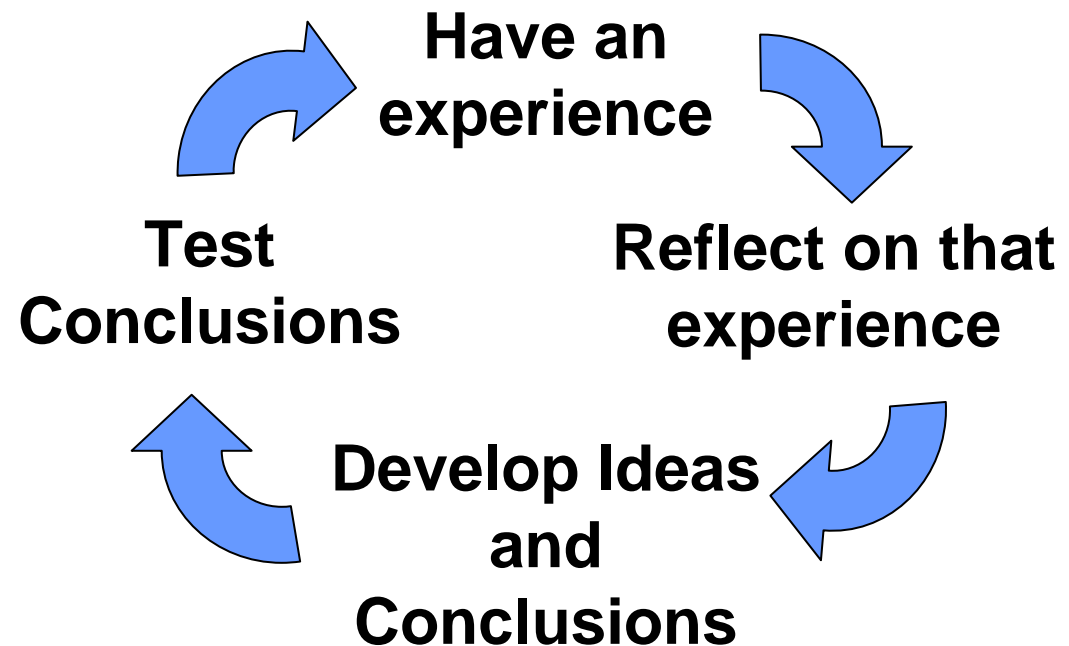
1. Readiness – motivation, clear objectives & strong purpose
2. Exercise – repetition, practice
3. Effect – fun factor strengthens learning
4. Primacy – Teach correctness..bad habits learned early are hard to break
5. Intensity – vivid experiences teach best
6. Recency – most recent, best remembered

Classroom Instruction

“How to Teach” – Adult Learners



- **Learning Process** – circular in four steps
 - Have an experience
 - Reflect on that experience
 - Develop ideas and conclusions
 - Test conclusions
 - Have an experience



Classroom Instruction

“How to Teach” – Adult Learners



- **Learning Curve**
 - Rapid early improvement
 - Plateau (normal)
 - Regression (the intermediate’s downfall)



Classroom Instruction

“How to Teach” – Adult Learners



- **Learning Styles**

Each person is a unique combination of these styles, with one generally dominant.

Each instructor tends to teach in their primary learning style

1. Learns by doing
2. Learns by thinking and understanding
3. Learns by experiencing “the process”
4. Learns by watching and listening



Classroom Instruction

“How to Teach” – Adult Learners



- **Barriers to Learning**

1. Fear – of the unknown, of failure, of physical harm, and of showing fear itself
2. Self-Concept
3. Defense Mechanisms
 - Rationalization (justification)
 - Flight (excuses for failure)
 - Aggression (complaining)
 - Resignation (gives up)
4. Stress and Anxiety
5. Impatience and Overconfidence

- **Be Safe**
- **Learn**
- **Have Fun**

Classroom Instruction

“How to Teach – Methods and Skills”



- **Methods and Skills of the Successful Instructor**
 - Vision
 - Demonstration Drive
 - Communication
 - Situational Control



Classroom Instruction

“How to Teach – Methods and Skills”



- **Vision**

- The most important tool in your toolbox

“Students think they come to the track already knowing how to drive, and how to see...”

“Progress from point to point driving to a smooth curve....”



Classroom Instruction

“How to Teach – Methods and Skills”



- **Vision – novices tend to:**
 - look down at pavement in front of car
 - follow the car in front of them
 - make directional corrections in turns
 - Drive point-to-point (cone-to-cone)
 - See only the “road”, not flaggers, etc

All symptomatic of **not looking far enough ahead**



Classroom Instruction

“How to Teach – Methods and Skills”



- **Vision - how it works**
- **At 100 mph, you travel 150 feet per second**
 - One second out: 150 feet is history (no reaction time) = **fear** (foot lifts)
 - Brain overload, the eyes fixate, muscles tense
 - Two seconds out: 300 feet allows time to **react = anxiety**
 - Judgment oscillates, the eyes dart, inputs are harsh
 - Three seconds out: 450 feet (to horizon) gives time to **act = comfort** (on the throttle)
 - Proactive thinking, eyes lead car, muscles relax, smooth inputs

Classroom Instruction

“How to Teach – Methods and Skills”



- **Demonstration Drive Benefits**

- Visual learners – “picture worth a thousand words”
 - SHOW line, technique, etc
- See what the car is capable of
 - “you mean the car can really do that?”
- Student can see, hear, and feel more when not concentrating on driving at the same time
 - Ask them to observe your inputs, the gauges, and listen to the car
- Student sees high speed driving done right
 - Drive your best, and explain any errors
- Student can ask questions in real time

Classroom Instruction

“How to Teach – Methods and Skills”



- **Demonstration Drive Risks**

- May scare student
- May excite student
- May overdrive their ability afterwards
 - **Always** caution student that this may happen
 - “Do as I say, not as I do!”



Classroom Instruction

“How to Teach – Methods and Skills”



- **Communication is a Two-Way Street**
 - Listen and observe just as much as you talk
 - We tend naturally to teach in our own learning style
 - Ask if you are talking too much, or not enough
 - Save long explanations for the pits, not at speed



Classroom Instruction

“How to Teach – Methods and Skills”



- **Communication is a Two-Way Street**

- Ask questions:
 - Elicit what student is thinking, feeling, doing
 - “Do you like things explained? To read about it? To see it demonstrated? To just “do it”?”
- As an instructor, “Are you really *listening*, or just waiting to talk?”
- Watch the student - observe



Classroom Instruction

“How to Teach – Methods and Skills”



- **Non-Verbal**

- Hand signals – fist up (brake), point left/right, hand forward (throttle on)
- Body Language – a foot on an invisible brake or a death grip on door handle is a give-away



Classroom Instruction

“How to Teach – Methods and Skills”



- **Praise**

- Your most important tool
 - Praise immediately to reinforce the correct behavior
 - “Good job with your mirrors”, “Nice downshift”
- Avoid negativism, instead be encouraging
 - “You’ll get it next lap”, “Let’s turn in a little later”



Classroom Instruction

“How to Teach – Methods and Skills”



- **Comfort Zone**
 - Yours
 - Be in it, let the Chief Instructor know what makes you uncomfortable
 - Theirs
 - Observe student, and assess it – don't push beyond, and also don't hold back when they are ready to move forward

- **Be Safe**
- **Learn**
- **Have Fun**

Classroom Instruction

“How to Teach – Methods and Skills”



- **Instructor - Student Roles**
 - YOU are in control
 - “Perception is Reality”, display confidence
 - You have authority through your position as instructor
 - Allow your CI to give you guidance if required
 - If you are a rookie instructor, or have never been to this track, it is not necessary to “confess”



Classroom Instruction

“How to Teach – Methods and Skills”



- **Instructor - Student Roles**

- Be approachable
 - Most students by nature will want your approval and to follow your instructions – let them!
- Be directive
 - “Let’s stay under 70 mph during the first two warm up laps to concentrate on the line”, “downshift only at turn 2 and stay in 3rd gear for the rest of the track”



Classroom Instruction

“How to Teach – Methods and Skills”



- **In a Situation**

- Use calm, clear, firm tone of voice
- Direct driver clearly – “Brake, brake hard, harder”
 - Don’t just watch it happen...
 - Do not grab the wheel - unless disaster is truly imminent
- Pit in after incident & analyze what went wrong



Classroom Instruction

“ How to Teach”



- **End of Session Two...
How to Teach**
- Questions



Scenario Two SECOND RIDE



Candidate's Role: The Candidate instructs the entire session. The scenario will mimic a standard "first ride" for a novice student which would include:

1. "Three Minute" interview
2. "Staging" interview which will include seat and hand position and general safety concerns.
3. Two lap orientation ride (as determined by regional practices)
4. After the orientation ride, the candidate will enter the pits and switch seats as per a normal novice orientation. (if appropriate)
5. The candidate will then instruct from the right hand seat for the remainder of this session and the entire third session.

Mentor's Role: The mentor will behave as a first time novice student. S/he will observe the interview and staging procedures and follow the instruction from the candidate instructor. This is a teaching exercise where the mentor's function is to "coach" the candidate instructor. This will mean that the mentor comes out of role-playing to stress or correct a certain point or procedure. The terms "time-out" and "time-in" are convenient to go in and out of role.

Classroom Instruction

What to Teach



- **Session Three...**
What to Teach
 - **Novice**
 - **Beginner**



Classroom Instruction

“What to Teach”



Novice Benchmarks:

(Skills required before promotion from Novice to Beginner)

- Drives the line accurately and consistently.
- Drives at an appropriate pace for the group.
- Inputs increasingly smooth.
- Makes few mistakes and self corrects.
- Calm in traffic.
- Anticipates slower cars in front.
- Does not “tailgate”.
- Does not give or accept late passing signals.
- Gives passing signals promptly.
- Passes with good safety margins.
- Exhibits good manners and consideration.
- Displays full knowledge of procedures, flags and driving terminology.
- Is safe to drive alone (even if not yet signed off).

Classroom Instruction

“What to Teach”

Novice



- **Track Protocol and Safety**
 - Staging, review driving position, etc
 - Pit-Out/ Pit-In Procedures
 - Flag Meaning and Action
 - Safety / Emergencies
 - Recognize and React
 - Warm Up and Cool Down Laps



Classroom Instruction

“What to Teach”

Novice



- **Driving “the Line”**
 - Turn-in
 - Apex
 - Track-out
 - Between Turns



Classroom Instruction

“What to Teach”

Novice



- **Operating the Car**
 - Steering
 - Hand Position and Movement
 - Accelerating
 - Smooth Throttle Control
 - Shifting
 - Up and Down, Timing
 - Braking
 - Timing, Smoothness



Classroom Instruction

“What to Teach”

Novice



- **Skills and Techniques**

- Vision
 - Up and Out, Reference Points
- Car Control
 - Recognition and Reaction to Understeer and Oversteer
- Passing
 - Too soon, too late, where and how
- Smoothness and Balance
- Consistency and Accuracy



Classroom Instruction

Common Student Errors



- Indecisive use of controls
- Jerky, abrupt inputs
- Early apexes
- Creeping in before initiating the turn
- Failure to let the car track out/Pinching the exit of the turn
- Turning in before releasing the clutch and /or brake pedal
- Inability to judge braking distances and effort
- Inconsistency as speeds increase
- Overly concerned with “lap times”
- Traffic issues..worry about holding others up or not being able to pass
- Mirrors..not checking or overly obsessed and not looking in front



Classroom Instruction “What to Teach”



Beginner Benchmarks:

(Skills required before being signed-off to Intermediate (non-student) status)

- Uses the full track consistently.
- Very smooth inputs, especially braking.
- Uses Ocular Vision in most corners.
- Carries reasonable momentum into corners.
- Practices effective heel and toe braking/downshifting.
- Demonstrates competent car control and recovery skills.
- Prompt and courteous passing signals.
- Good driving record for two events minimum.
- Calmly deals with fast traffic and close passing.
- Demonstrates full compliance with Region DE philosophy.

Classroom Instruction

"What to Teach"

Beginner



- **Operating the Car**
 - Steering
 - Hand Position and Movement
 - Accelerating
 - Throttle Steer
 - Shifting
 - Timing, Heel and Toe
 - Braking
 - Threshold, Transition, Smoothness



Classroom Instruction

“What to Teach”

Beginner



- **Skills and Techniques**
 - Vision
 - Increasing Awareness
 - Car Control
 - Managing the contact patch
 - Passing
 - Handling close traffic & off-line turns
 - Smoothness and Balance
 - Consistency and Accuracy

Classroom Instruction “What to Teach”



- **Vision - favorite maxims**
 - The car goes where you look
 - You can only drive as fast as you can think
 - Turn your head, point your nose
 - The hands follow the eyes
 - The future is more important than the past
 - The future is closer than you think!

“Everything a person does is created twice, once in the mind, once in the execution.”

Classroom Instruction “What to Teach”



- **Vision**

- Scan, don't fixate
- Look 3 seconds ahead
- Trust and use peripheral vision
- Look past or around car in front of you
- Three mistakes in a row: slow down, re-focus



- These concepts are introduced to the novice, reinforced to the beginner, and second nature before sign-off.

Classroom Instruction “What to Teach”



- **Mental Preparedness**

- Judgment is a skill developed with seat time
- Situational Awareness
- Planning-anticipation
- Concentration
- Aggressiveness
- Courtesy
- Self Analysis
- Receptiveness to Learning
- Decision Making - product of experience

- **Be Safe**

- **Learn**

- **Have Fun**

Classroom Instruction “What to Teach”



- **End of Session Three...
What to Teach**
- Questions



Scenario Three

THIRD RIDE



Candidate's Role: The candidate will continue to instruct the “novice student” from the right seat. The student is improving through your instruction so you will also need to use techniques and tools appropriate for an advanced beginner student.

Mentor's Role: The mentor will continue to drive the car as a novice student, but with proper instruction you have now improved to the beginner status and will drive accordingly. You are still a coach and will come out of role playing as needed to stress a point, model a technique, etc. By the end of this session, the candidate ideally should be fully prepared for a check out ride. If the candidate needs more work, the mentoring will continue for the fourth session instead of a check-out ride.

Classroom Instruction “Debriefing & Critiquing”



- **Session Four...**
Debriefing & Critiquing

- **Be Safe**
- **Learn**
- **Have Fun**

Classroom Instruction “Debriefing and Critiquing”



- **Definition of Critique**
 - Webster: To discuss and/or consider the merits and demerits of a performance and judge accordingly.
- **Purpose of the Critique**
 - No instructor’s skill is more important than the ability to analyze, appraise, judge, and correct a student’s performance.



Classroom Instruction “Debriefing and Critiquing”



- **Qualities of a Critique**

- Compare with others of the same experience level
- Be Objective
- Be Acceptable
- Be Constructive
- Be Comprehensive
- Be Thoughtful
- Be Specific
- Be Timely
- Be Positive

- **Be Safe**

- **Learn**

- **Have Fun**

Classroom Instruction “Debriefing and Critiquing”



- **Critique Process**

- Oral Quizzing
- Analyze data for student evaluation in four areas:
 - knowledge**
 - skill**
 - proficiency**
 - judgment**
- Goal Setting

- **Be Safe**

- **Learn**

- **Have Fun**

Classroom Instruction “Debriefing and Critiquing”



- **Oral Quizzing**
 - **Questioning Skills**
 - Effective questions should elicit specific responses
 - Keep questions brief, but challenging
 - Ask “why”, “how” and “where” questions

- **Be Safe**
- **Learn**
- **Have Fun**

Classroom Instruction “Debriefing and Critiquing”



Analyze Data for Student Evaluation

- Knowledge
 - Safety
 - Pit Procedures
 - Flags
 - Driving Line
 - Passing..signals and areas
 - Emergencies
- Skill
 - Vision
 - Car Control

- **Be Safe**
- **Learn**
- **Have Fun**

Classroom Instruction “Debriefing and Critiquing”



Analyze Data for Student Evaluation

- Proficiency
 - Track Awareness
 - Smoothness
 - Consistency
- Judgment
 - Self Analysis
 - Courtesy
 - Aggressiveness



Classroom Instruction “Debriefing and Critiquing”



- **Goal Setting**
 - Collaboratively set goal(s) for each training session and identify obstacles to learning
 - Re-evaluate goals after each training session
 - What went well...
 - What needs work...



Classroom Instruction “Debriefing & Critiquing”



- **End of Session Four...
Debriefing & Critiquing**
- Questions



Check-Out Session



Candidate's Role: The candidate instructor will run through the entire scenario with the check-out mentor as if the mentor is a first time novice student, including the “three minute” interview, “staging” talk and the two lap orientation, which will be done from the right seat to save time. After the “two lap orientation ride”, the candidate will then proceed to instruct as if the mentor is a novice student.

Mentor's Role : The mentor will act as a new student, but will drive the car for the entire session. He/she will exhibit normal novice errors but will take “instruction” from the instructor candidate and should progress to an advanced beginner by the end of the session.

End of Session..The mentor will orally “debrief” with the instructor candidate. The mentor will then fill out the evaluation form and return it to the Classroom Instructor. Do not discuss this evaluation form with the candidate. You may discuss your evaluation with the mentor/coach for this candidate instructor.

Sources



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