

## **The Effects of Experiential Learning upon the Reactions of Drivers in Case of a Side-Slip**

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### ***Abstract***

*This study illustrates the ways to make driving behaviors, i.e. the experiential prevention and intervention in defensive driving, more efficient. The exercises chosen in the prevention phase prepare the drivers for the examination situation, and also for the preventive driving of the vehicle, while the experiential training optimizes their reactions in case of a side-slip. The results thus obtained underline the importance of these two types of interventions in the change of the manner in which drivers react in traffic.*

***Keywords: driver, side-slip, prevention, experiential learning***

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## **I. Introduction**

Defensive driving has as main goal the reduction of causeway accidents through the education of those that take part in such courses. Our society, through the ways in which it implements driving in different domains (from amateur driving to the professional kind), to the infrastructure developed and the mentality of the driver imprints each driver specific objectives to which he or she needs to resist. These objectives demand to apply to each person firstly as methods of education – in the preparation for getting one's driver's license, and afterwards to become a responsible driver, through its driving and traffic behavior. At the beginning, the driver's conduct is based on learnt abilities and on rules. While in time this person specializes, certain components interiorize and the behavior becomes predictable and homogenous. Mikknonen and Keskinen, cited by Hăvârneanu, specify the fact that in the driving behavior there are three levels of interior models: "maneuvering the vehicle, the knowledge of the situations and objects in traffic and the context in which the driving takes place. (Hăvârneanu, 2011, p. 49). Through education, the drivers assimilate theoretical notions referring to the act of driving and traffic, rules and regulations, they gain experience, and through this they form their interior models which will regulate the act of driving the vehicle (Hăvârneanu, 2011).

Defensive driving is a domain that is relatively new in the scientific research sphere, the studies that took place thus far, even though having an extremely good methodological fundament, do not offer indisputable results referring more to the general aspects of the studies in the domain (Lund, William, 1985). Defensive driving implies a set of measures to create mental patterns which can predict the reality in critical situations and also a polishing or a creation of experience which is generally invoked in studies on defensive driving.

The driver's education in the direction of defensive driving seems to be the key to reduce the number of causeway accidents and implicitly reduce recovery and assistance costs for both vehicles and people. Their education makes the difference in certain states even in what regards the age to obtain a driver's license (USA) or the duration to receive a sanction (UK) (Insurance Institute for Highway Safety, 2006). In what regards the educational part in this area that draws attention to prevention, this will make the difference between a better or a worse driver. The preventive driver is calm and pondered in traffic reactions, does not have precedents (or has very little

of those and coming from conditions independent of him or her), while an agitated driver is impulsive and aggressive in traffic, with multiple precedents. In the area of social education politics for drivers, the roles of the specialists who are engaged in the domain are: a role centered on the prevention side in order to outline the profile of the drivers with a good conduit in traffic, a role of formation for the drivers (amateur or professional) and a role of intervention for survivors in case of car crashes. In this whole domain of education for traffic it is necessary that we have an understanding of the fact that the decision is taken by the driver in traffic in fractions of a second.

This draws the attention over the time and decision factors, and above all, over the understanding of the stimuli and the context in which these happen. In the decision moment, the driver makes a series of attributions as per the two dimensions, external-internal, which will bring him or her towards different possible solutions in traffic. The factors that sustain these attributions are – the capacity or the necessary competences that the driver knows he has, the effort he makes, the difficulty of the task at hand, the context in which it happens and the chance for his solution to be realized. In traffic all these happen under time pressure, but in controlled situations, in simulators, the driver can learn about his or her own reactions, about the decisions he has taken and their effects these have. The driver can adjust his behavior from one that is not suitable for traffic to another one that brings benefits in terms of personal safety and not only. A few directives of education in terms of prevention in the case of driving behavior are:

- the direction to diminish the negative affective disposition and the conflicts in traffic, of low self-confidence, risk behaviors and difficulties to learn in traffic situations
- the direction of organization of a driving style that is adequate for a traffic behavior without accidents
- directions to educate for a healthy driving conduct (without alcohol or substance consumption, without aggression, having a good sleep-fatigue rapport etc.)
- directions to train the population with as many prevention activities as possible for a civilized traffic
- optimizing, developing and updating education, for a civilized traffic on the professional driver's side, but also on the amateur driver's side (especially after being involved in accidents).

In the car crash sphere, a special role is held by the side slip. Defined in the subjective experience of many drivers as a moment in which the car seems uncontrollable, the side slip attracts after itself mostly

inadequate reactions of braking and the exaggerated tendency to control the deviations from the car's trajectory. The solution that can change the ending of a side-slip completely is that of a light acceleration and a small push against the turn that the back of the car slips towards (Pausan, Aur, 2011).

Considering the limitations of the research in this domain and trying to argue differently why the measures to change the driving behavior lead to the decrease of the number of accidents, we have framed the discussion of the problematic of defensive driving through approaching a research theme based on an innovation of the "Titi Aur" Academy, which is the car with a double direction system, which reveals the behavior of a vehicle in a side slip. Hence students can learn to cope with traffic situations, in a controlled environment and to discover what abilities they have to find solutions in these kinds of situations. Through this kind of exercises, the drivers learn to control a part of the factors which intervene in traffic, i.e. maneuvering the vehicle in side slip conditions, the knowledge of situations that can appear in these cases and the personal reactions to it, but also the different contexts in which this situation can happen.

## **II. Objectives**

Highlighting the role of experiential interventions for drivers, such as:

O1. Showcasing the role of an experiential program for prevention for drivers.

O2. Objectifying the role of an experiential training on maneuvering a vehicle in a side slip.

### **General study hypothesis:**

Optimizing the driving behavior in case of a side slip can be realized through prevention programs and through experiential training programs, using the side-slip simulator.

### **Samples and instruments used in research:**

In order to test this hypothesis we have used the data gathered after the realization of several prevention programs and the data collected in the framing of the "Titi Aur" Academy. The data has thus been subjected to statistical analysis with the help of the SPSS2.0. program. The sample has been formed of 61 students from the driving school who wanted to participate in the exam to obtain their driver's license (in different categories) and 90 people have participated in a training realized with the help of side slip simulators.

The tools used were as follows:

– For prevention – programs centered on themes based on self-knowledge, reactions in different

situations, the level of anxiety and methods to diminish it, as well as questionnaires to evaluate the subjective perception tied to different traffic or examination situations.

– For training – side slip simulators and the multi-axial questionnaire to evaluate performance. It is to be mentioned that this questionnaire has been completed by several evaluators, pre and post training.

## **III. Results**

### **Hypothesis 1**

The prevention activity has been realized at a driving school in order to make driving behaviors more efficient and in order to increase the degree of traffic safety. The participation in this program was on a volunteering basis and has been realized in parallel with the theoretical preparation of the future drivers for the driver's license examination (in different categories). The prevention program has included the following themes – the knowledge of a few dimensions of their own personality involved in their driving behaviour, anxiety towards the testing, and the stress of several factors involved in the testing. The first meetings were centered on the success theme, where success was defined (by the students) by two dimensions of accomplishment: succeeding in taking the exam and the preventive driving behaviour. The understanding of the two led to the internalization, for each participant, of the values that correspond to this type of success and accessing the personal resources to attain these two objectives in traffic.

With the discussion of these notions we have gone to discussing the personality factors which take part in driving and also in attaining certain performances. The discussion on these subjects, as well as the exercises started from the assumption that knowing the factors that are part of driving and a few techniques to self-regulate the behaviors will lead to the augmentation of efficiency and yield of each person's behavior in traffic situations. The exercises suggested have offered the students the possibility to create and evaluate their own different situations (Mitrofan, coord., 2000). Success was studied in most cases with a rapport to performance athletes, but this appears in all activity areas. Thus, Rioux, cited by Holdevici sustains that there are a few characteristics of performers that lead to success, i.e. – a balanced personality, the willing to perfect oneself, increased energy potential which lead to self affirmation, resistance to frustration and emotional stability (Holdevici, 2011). The knowledge of these dimensions for each of the participants in the program consisted of

landmarks which they can refer to in future traffic situations. The emotion that a person lives in different situations is not tied solely to those situations, but also to the interior state of the person while going through the situations (Cucu – Ciuhan, 2014). Thus, a look in the domain of emotional experiences tied to the testing leads, for each of the students, to the understanding of one's own reactions to these types of events.

The anxiety towards the testing model, on which we had worked on is the one proposed by Zeidner, cited by Robu, and it comprises the following dimensions: the characteristics of evaluative situations, the variables tied to the subject towards the testing situation, the answers with an adaptive value towards different situations and the results with an adaptive value registered by the subject (Robu, 2011). Covering the exercises tied to testing anxiety lead to the possibility for each participant to observe where exactly he or she has difficulties and how he/she can

solve them. "Man is a reality with a huge self-transformative potential, having the attribute of unicity, but also the one of qualitative differentiation, awareness, creativity and coping mechanisms". (Mitrofan, Petre, 2013, p.27). The results of the prevention program have been objectified through diminishing self-perceived anxiety towards the testing situation, through strategies to pass through the examination phase, making traffic reactions more efficient and increasing self-knowledge.

### **Hypothesis 2**

In order to emphasize the role of experiential learning on the reactions of drivers in case of a side slip, we have measured the value of the driver's performance before and after the training. The registered data before the training in the side slip simulators was  $m=4,94$ , while after training it increased  $m=8,15$ . The graphic representation of the data obtained is as follows:

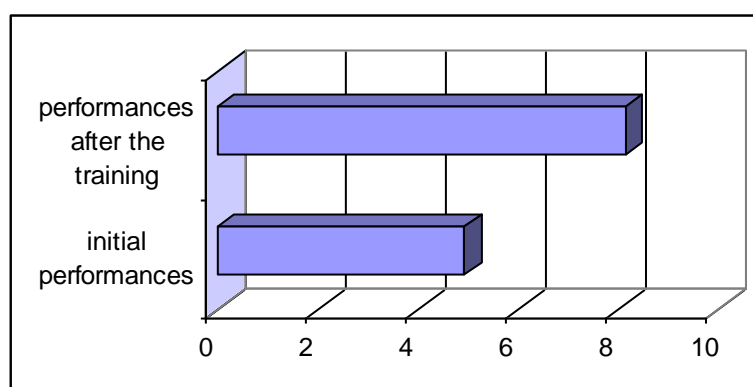


Fig.1. The representation of the average performance before and after the training

Considering the results shown above, the hypothesis of the research according to which there will be an improvement in the techniques of control of the vehicle in a side slip in case of the participation at a training program based on experiential learning of the defensive driving course, is confirmed. The results to the test completed by the authorised instructors revealed an increase in performance values of the participants after the training program ( $m=8.15$  in comparison to the initial result of  $m=4.94$ ) for  $t=-11,32$  and  $p=0.001$ . The limits of trust for increasing the performance for the „side slip acclimation” assessment are situated between  $-3,78$  și  $-2,63$ , an interval that is very close and translates into a better estimation precision.

Considering the application of an additional procedure, such as the one of the calculation of the power of the test, we can affirm the difference between

the two sets of data is significant from this perspective as well. This difference between the averages is valuable, attracts the attention towards the use of simulators to train the students and translates into the capacity of the subject to act correctly in case of a side slip, which leads to reducing the consequences of an accident or even the complete avoidance of one.

### **IV. Conclusions**

The given study brings data on the possibilities of streamlining our reactions while driving and of our behaviour in traffic through two different methods of intervention, which are: experiential prevention programs and the experiential training with side slip simulators. The results thus obtained emphasize the importance of these two types of interventions and make up premises to continue these type of programs in the future.

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