Driver training: The collective dimension in trainers’ activity

Vidal-Gomel Christine
Laboratoire “Paragraphe” University Paris-8
UFR Psychologie
2, rue de la Liberté
F-93526 Saint-Denis Cedex2
vidal@univ-paris8.fr

Rogalski Janine
Laboratoire “CHART” University Paris-8
UFR Psychologie
2, rue de la Liberté
F-93526 Saint-Denis Cedex2
rogalskij@univ-paris8.fr

ABSTRACT

Motivation – To analyse the collective dimension in professional trainers’ activity, in the context of studies on driver training for safety.

Research approach – The paper presents an explorative field study in the domain of initial driver training about trainers’ activity depending whether they individually follow trainee’s progression or share it with other trainers. A particular focus is put on the methodology for analysing trainers’ interventions during driving sessions from a collective point of view.

Findings – The results suggest that trainers did not seem to come upon great difficulties for anticipating trainees’ “didactical guidance” when they did not manage the previous training session. However, formal constructs implemented in a “driver-training reference” frame –(DTR) and a “trainee’s record form” (TRF)– appeared as relatively low efficient tools in the asynchronous cooperation: the DTR training progression was not fully followed, and there was no homogeneity in filling TRF in. There were ambiguities in the written comments, concerning trainees’ progression and trainers’ future didactical focus. Typical cases called for direct face-to-face mediation both between trainers and with the trainee.

Research limitations/Implications – Only few training sessions were analysed, from a limited sample of trainees at various driving levels. However the methodology developed for analysing trainers’ didactical actions was generic. Implications concern both the organisation of driver-training situations and the formal initial training of the trainers themselves, including the use of TRF as a communication tool between trainers.

Originality/Value – The research contributes to the design of methods for studying individual and collective trainers’ activity in situations designed for professional learning and competence development.

Keywords
Driver training, trainers’ activity, asynchronous cooperation, cognitive artefacts.

INTRODUCTION

The question presented in the study articulates two types of issues: the first one is related to driving safety, the second one to trainers’ activity in professional settings.

Road safety is an internationally shared concern. It depends on equipments, regulations, driving support systems, and drivers’ competence and behaviour. The over-representation of young and inexperienced drivers in road crashes is widely acknowledged as one of the most persistent safety problems. A shared hypothesis is that drivers’ competence is –at least partly– determined by driver training. However, an object of debate is the extend to which driver training results in improving road safety (Williams & Fergusson, 2004). Evaluation of various forms and purposes of training has been the focus of a lot of studies concerning initial training, graduated training, post-licensing training (one can refer to: Hedlund, Shults & Compton, 2006; Engeström, Gregersen, Hemetkoski, Keskinen, & Nyberg, 2003; ADVANCED, 2002). In this context, composition of formal driver education and training are in discussion and are topics of numerous researches (Williams, 2006; Hatakka, Keskinen, Gregersen, Glad, & Hemetkoski, 2002; Mayhew & Simpson, 2002). However few studies have analysed the trainers’ activity in driver training –Groeger & Clegg (2000) and Rismark & Solvberg (2007) seem to be exceptions– compared to studies which dealt with training assessment, even though trainers competencies was considered as an important factor, among others, in driver trainees’ acquisitions (ADVANCED, 2003; MERIT, 2005).

On the other hand, in the driving training context as in other domains, studies on how trainers implement training procedures, choose training situations, and interact with trainees, remain very scarce.

Groeger’s research team analysed instruction given to 20 trainees on a set of 17 manoeuvres, along their driving training (each with only one instructor). Their report is mainly oriented toward designing and evaluating driver training courses (Groeger & Clegg, 2000). The focus is on the tasks performed by the trainees, and on the instruction given (or not) by the
trainee depending on the trainees’ progression toward their licensing test (Groeger & Clegg, in press). Rismark and Solvberg (2007) present an in-depth analysis of teachers-pupils dialogues in driver education. Their goal is to understand how dialogues lead to a mutual understanding of ideas, comments and questions about driving, in order to contribute to “effective driver education programs” (p. 600).

The issue of the collective dimension in teaching and training remains widely open, while being involved in long-term activity. In fact, in the French context, several trainers may intervene in the driver training process for a given trainee (due to organisational constraints or to pedagogical decisions). The present study aims at contributing to research on the issue of individual and collective dimension of trainer’s activity. The theoretical framework is professional didactics (Samurçay, 2000), in a perspective, which articulates the developmental, constructivist approaches of Piaget and Vygotsky (Shayer, 2003), with cognitive ergonomics (Rogalski, 2004). Activity analysis is at the centre of this framework, from two points of view: 1) analysis of the target activity –here driving– for positioning training goals and trainee’s actual competence; 2) analysis of the trainer’s activity as a mediation in driver training.

MODELS OF DRIVING AND DRIVER TRAINING
Several hierarchical models have been proposed for describing drivers’ task and skills. The following model (Hatakka, Keskinen, Gregersen, & Glad, 1999) was used in European research for proposing training situations (TRAINER, 2001). It was also used in the MERIT project (2005) for defining training content for drivers’ trainers in the European context.

• The “highest level” (Hatakka et al., 1999, p. 36) is concerned with goals for life and skills for living. It includes importance of cars and driving on personal development and skills for safe control. Different researches have stressed that life-style factors and values affect drivers’ behaviours.
• The following level (we will denote it “third level”) is related to goals and context of driving, when “the drivers decide for what purpose, where, with whom, with what and at what time to drive”. It refers to navigational and planning tasks and also to journey-related goals and driving context.
• The “second level”, mastering traffic situation, is concerned with the adaptation of the drivers “personal behaviour to others road-users’ behaviour and to the traffic environment. This includes making their behaviour predictable to others”.
• The “lowest level” (op. cit., p. 36) is vehicle manoeuvring. It mainly concerns controlling speed, direction, and position.

Driving education is defined at each level, along three axes: knowledge and skills to be mastered; risk factors that must be identified and avoided; personal elements whose consciousness is expected.

INDIVIDUAL AND COLLECTIVE DIMENSIONS IN TRAINERS’ ACTIVITY
Following Rogalski (2005), trainer’s activity is considered from a triple point of view: it is a case of managing a dynamic process (trainees competencies development), it is a didactical activity and it is a professional activity:

• Trainers’ interventions interact with the dynamic of the trainee development. This means that trainers have to elaborate a representation of the dynamic relations between the trainee’s development and the competences to be acquired, and a representation of their interventions effects. In driver training, this first dynamic process is embedded with a second one as driving is itself a case of dynamic environment management.
• In driving training the objective is not to travel: the didactical activity consists in selecting driving situations corresponding to the progression of trainee’s competencies, and in ensuring a trainee’s guidance, that can be more or less direct, from taking car commands to commenting the driving situation.
• Finally, trainers are involved in an organisation system: they must follow formal constructs (see below the French driving-context) and they operate in a given organisation that may require cooperation.

As in other training situations, trainers may be involved in cooperative didactical actions. It may be the case that a trainee follows successive training sessions with different trainers, depending on their time availability. In such a case, assessing and acting on the trainee’s progression is shared between two (or more) trainers, in an asynchronous cooperation. In such cases, formal constructs “objectified” in artefacts may constitute mediation tools for this cooperation (Schmidt, 1999).

THE FIELD STUDY
Our explorative study on the collective dimension of driving-trainers’ activity is part of a project on trainers’ competence (Vidal-Gomel et al., 2007). A preliminary study consisted in interviewing trainers about their representations on driving and driver training. Their answers showed a limited shared referential: their representations were split up between different points related to the second and to the lowest level of the Hatakka’s model. They also referred to difficulties when confronted to collective interventions in a trainee’s progression. This point is the main object of the present paper.

At the present step in the project, we do not try to identify effects of trainers’ activity on trainees’ driving competences: we focus on defining a general methodology for identifying important features in the dynamics of trainer’s activity during a lesson. One key issue is the coherence between initial diagnosis of the trainee’s past progression, anticipation of didactical goals for the present lesson, guidance during the driving phase, didactical synthesis and evaluation of the session...
and anticipation of future didactical goals –during the debriefing phase.

**The French driver-training context**

For choosing didactical situations trainers have to follow the progression prescribed in a national document: the DTR (the driver-training reference). DTR constitutes a training referential which particularly specifies four steps:

- 1: mastering the vehicle at low or moderate speed with low (or no) traffic.
- 2: choosing the road placement, crossing an intersection, changing travel direction.
- 3: driving in normal conditions on roads or in urban centres.
- 4: knowing situations with specific difficulties.

This prescribed progression also structures a trainee’s record form (TRF), which is a file the trainer has to fill in at the end of every lesson. The trainee must communicate it to the trainer at the beginning of any new lesson. This means that TRF is also designed as a communication tool between trainers.

TRF consists in a 13 pages booklet; after data about the trainee and the training agenda, the core of TRF is devoted to the 4 DTR steps: 1. “car mastering at slow or limited speed, with light or null traffic”; 2. “choosing road positioning, executing manoeuvres in crossroads”; 3. “driving in normal conditions on road or in urban traffic”; 4. “knowing situations with peculiar difficulties”. Among the list of sub-goals expressed in TRF for each step, it is possible to identify references to the various levels of the Hatakka’s model.

Trainers may write comments in front of each sub-goal and are asked to fill in a grid for a synthetic evaluation of each step. Finally, a place is open to free comments and schemata.

**Trainers and trainees in the field study**

For the explorative study, two experienced trainers were observed (Pat and Dan), with similar competence (considered as efficient ones by their colleagues and hierarchy), in a driving school where the collective dimension was the general rule. Eight trainees accepted to be observed and audio-recorded, all young (between 18 and 24 years old), with diversity in their progression (driving hours as well as driving competence).

Table 1 presents the trainees: sex, number of driving experience (hours of training), steps of DTR that were validated. The coding Di refers to Dan being the trainer in the observed session, Pi to Pat. Indexes 1 to 4 indicate the relative familiarity of the trainer with the trainee: Only one trainee had always been followed by each trainer (respectively denoted P1 and D1), enabling to contrast with the other cases involving the collective dimension in trainer’s activity. P4 and D4 were the least familiar for each trainer.

<table>
<thead>
<tr>
<th>Code</th>
<th>Sex</th>
<th>Validated DTR steps</th>
<th>Driving hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>M</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>P2</td>
<td>F</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>P3</td>
<td>F</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>P4</td>
<td>F</td>
<td>-</td>
<td>12</td>
</tr>
<tr>
<td>D1</td>
<td>F</td>
<td>1 &amp; 2</td>
<td>22</td>
</tr>
<tr>
<td>D2</td>
<td>F</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>D3</td>
<td>M</td>
<td>1 &amp; 3</td>
<td>19</td>
</tr>
<tr>
<td>D4</td>
<td>F</td>
<td>2 &amp; 3</td>
<td>40</td>
</tr>
</tbody>
</table>

There were two “singular points”: P4 presented a problem of mobility with her right ankle, which created difficulties in using accelerator and brake. D4 recently failed her driving test and had a previous lesson with another trainer (than Pat and Dan).

**Methodology**

The focus was put on the dynamics of trainers’ activity, with a specific emphasis on their use of the TRF tool.

We differentiated three phases in a driving lesson:

- **Briefing:** the trainer gathers information about the trainee progression, elaborates a diagnosis about this progression and takes a preliminary decision about what must be done in the driving session.
- **Driving session:** the trainee is driving. The trainer gathers information about the environment evolutions, about the trainee driving activities, elaborates an on-line diagnosis and takes guidance decisions (he intervenes or not, the intervention may be more or less strong: from a simple comment to an injunction to execute a precise procedure).
- **Debriefing:** the car is stopped. The trainer comments on the driving session; he may announce the objectives of the next lesson.

Concerning the interactions with the trainee, data were gathered on the following points:

- what the trainer announced in the briefing about the content of the driving lesson, in terms of tasks to be performed and/or trainee’s activity and behaviour to be developed,
- what was effectively done during the driving session,
- the situations giving rise to trainer’s intervention, the content and the nature of the intervention,
- what the trainer said during the debriefing: evaluations concerning the driving session (tasks or activity and behaviour) anticipation for the following lesson (same content).

Notice was taken of the use of TRF during the three phases, in terms of gathering information or writing information: drawing schemata, filling required evaluation in predefined fields in the TRF cards, writing open comments.

During the lesson, the trainer may use the TRF:
- *During the briefing*, he may look at the level of validation of the different steps, at the comments (texts and schemas) made on the previous lessons (by himself or other trainers).
- *During the driving session*, he may gather information, write comments, or validate steps.
- *During the debriefing*, he adds more comments or validations; he may develop the comments for the trainee; he can also use predefined schemas or draw personal ones for explaining specific points.

**Coding trainers’ actions**

Our coding scheme differentiates various categories of trainer’s interventions, depending on the moment (in the lesson), and the nature: direct action on the vehicle, interaction with the trainee, and “interaction” with TRF. As we focus on the trainer’s activity dynamics, we classify interventions depending on their temporality.

- Some interventions occur only during the driving session. The trainer may intervene to guide the trainee: he may verbally correct or command an activity (a control or an action, for example), a task (“turning left”, for example) or behaviour (“to be serious”, for example). In an emergency situation he may act on the vehicle controls. For each one, we wrote down the content of the intervention (type of task, activity or behaviour) and the context of its occurrence.

  For example, the trainer: “organize yourself!”, this intervention occurred during a motorway entrance, we coded it: `<commanding> <behaviour> <organisation> <motorway entrance>`.

- Some interventions may occur during the briefing, the driving session (in this case we note the context as in the previous example) or the debriefing.

  - The trainer may read a document, or write something on a document. We note the nature of the document and content of what is written (he draws a schemata about an intersection on the TRF, we code it: `<writing> <TRF> <schemata> <intersection>`).

  - He may give explanations about a task, an activity, behaviour, or something else (the driving licence test, for example). Evaluations relate to an activity, a task or behaviour but sometimes the trainer do not precise it. We note the value of the evaluation (positive or negative) and whether the evaluation refers to occurring, previous or future lesson.

For example, “it’s better”, this intervention occurs during a motorway entrance, was coded: `<assessing> <positive> <motorway entrance>`.

He may ask questions about a previous lesson or evaluation, or the trainee’s progression.

We choose the predicate `<prescribing>` for coding the prescription of a task not being later commented in any way.

- Some interventions occur only during briefing or debriefing: the trainer may announce task, activity or behaviour that must be practiced in the actual or future lesson.

For example, “today, you will work on you head mobility” was coded: `<announcing> <activity> <head mobility> <actual lesson>`.

Those different categories were used to identify the trainer’s initial diagnosis about the trainee’s progression, which determines the didactical decisions announced, and the use of the TRF in these activities. We also analyse the content on the driving session and the information written in the TRF and possibly oriented toward the following trainer during the next lesson.

The method is the following.

First, an initial file is designed that describes the series of events in a lesson, in terms of trainee’s tasks, trainer’s physical acts, and trainer’s verbalisations, coded as previously indicated. Then, we define a «condensed» protocol, with the set of the different trainer’s activities (same coding), without taking into account neither their temporal order nor their repetition.

This enable to compare the categories of points anticipated during the briefing, the points approached during the driving session, and their presence or absence in the debriefing phase, and on the Trainee’s Record Form (TRF) at the end of the session.

An example is given below for the three phases of the lesson for P1.

<table>
<thead>
<tr>
<th>briefing</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <code>&lt;announcing&gt;&lt;activity&gt;&lt;head mobility&gt;&lt;actual lesson&gt;</code></td>
</tr>
<tr>
<td>• <code>&lt;announcing&gt;&lt;task&gt;&lt;roundabout&gt;&lt;actual lesson&gt;</code></td>
</tr>
<tr>
<td>• <code>&lt;announcing&gt;&lt;task&gt;&lt;road positioning&gt;&lt;actual lesson&gt;</code></td>
</tr>
</tbody>
</table>

One can remark that tasks and activities as announced can be defined at various levels: for instance, in P1 example, roundabout is a global task related to a general objective of step2 of DTR; road positioning is a sub-task in several tasks; the same is true for the activity related to head mobility.
In the present phase of our study, the methodology is not fully used. Given its exploratory character and its objective of testing the coding scheme, the number of trainers and trainees was limited. Nevertheless, results will allow tracing the use of TRF as a tool for the trainer, the trainee or other trainers.

They also allow us to identify differences between trainers, an issue that was not considered in the existing research on driver trainers: Groeger and Clegg (2000; in press) focus on general trends in instruction given during driver training, while Rismark and Solvberg (2007) are interested in how driving teachers use the dialogue with trainees into a learning tool.

Our coding scheme is here used for analysing the coherence between the anticipation of training goals expressed during the briefing phase, the effective trainers’ didactical decisions during the driving session, and their final comments during the debriefing phase: oral comments to the trainees and written comments on the TRF.

RESULTS

Results concern: 1) the trainers’ activity and their use of TRF during briefing; 2) the comparison between objectives announced during briefing and what happened during the driving session (trainee’s activity, trainer’s evaluation and use of TRF); 3) what was said during the driving session and what was said during the debriefing phase, and what was finally written in TRF.

Trainers’ activity during the briefing phase

Overall organisation of the briefing

The duration of the phase, the importance of trainer’s interventions, and the use of TRF indicate the following points:
- the briefing phase was short (from 3 to 8 minutes),
- very few questions were asked on previous tasks,
- there were few conversation turns (1 to 8).

There was an exception: for P4 the briefing went on for 15 minutes; there were 11 questions to the trainee, and the exchanges included 69 speaking turns.

Use of the TRF

During the briefing, the two trainers used the TRF differently: Pat used the TRF from the very beginning of the briefing, except in the case of P4: for this trainee presenting a specific problem, he first had a face-to-face with the previous P4 trainer, and he privileged a direct interaction with the trainee about her progression and difficulties, before reading the TRF; Dan made a more variable use of the TRF: he did not use it at all with D1, used it from the very beginning with D3 and only later in the briefing phase with the two other trainees.

Expression of goals for the driving session

The objectives announced at the end of the briefing phase were expressed with a high diversity intra and inter trainers. For instance, Pat proposed a very global orientation to P3: “situation reckoning”, which is not a didactical objective but rather expresses the need for diagnosing the trainee’s present acquisitions. At the contrary, he detailed very specific objectives to P2, concerning points related to step1, such as “reinforce the mechanical mastery, more rhythm, more flexibility, gear change down, smooth clutch in hill start”.

Dan differed from Pat in the number and type of goals he announced. He expressed fewer goals than Pat, and his objectives were focused on activity (“insisting on information gathering”) and behaviour (“be more serious”) without referring to any driving task, while Pat announced seven driving tasks (and referred to 3 activities and 2 behaviours). This difference concerning the training focus of the two trainers was also observed in the oral debriefing and in the comments written in the TRF.

Coherence between the didactical objectives announced in briefing and those appearing in the driving session

For analysing the coherence between what the trainers anticipated in the briefing phase and what they performed in the driving session and during the debriefing phase, we used as cues what was explicitly expressed to trainees (in oral interactions or in written form on TRF).

---

1 There exist several types of parking, whose specification is not useful here.
2 Step2 presents two general objectives: lane choice / cross roads (which include roundabouts).
Initial didactical objectives and goals really managed
The following table presents –for each trainer– the number of didactical goals announced in briefing, among them those which were really managed, and the goals which appeared only in trainers’ interventions during the driving session or in debriefing (added goals).
Table 2. Coherence between goals announced and goals really managed (driving session and debriefing)

<table>
<thead>
<tr>
<th>trainer</th>
<th>type of goals</th>
<th>announced</th>
<th>managed (among announced)</th>
<th>added</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pat</td>
<td>task</td>
<td>7</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>activity</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>behaviour</td>
<td>2</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Dan</td>
<td>task</td>
<td>0</td>
<td>-</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>activity</td>
<td>4</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>behaviour</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Globally, there was less coherence for the didactical objectives expressed in terms of behaviour (3/4 were announced and not managed, while 4 were added). Moreover, a lot of tasks were added to the announced ones (6 for Pat, who announced 7, and 15 for Dan who announced no task at all during briefing).

In fact, there were differences depending on the fact that the trainers had direct or important cues about the trainees’ progression. For P1 the coherence in Pat’s objectives was perfect. Dan announced no didactical objective for D1 and D4, so that it was impossible to analyse how coherent was his anticipation about trainees he knew (directly for D1, and indirectly for D4 who failed her first driving test).

From interventions during the driving session to comments during the debriefing phase
Some trainer’s interventions done when the trainees were driving were not resumed during the debriefing phase (in oral or written form). For Pat, it concerned 1 task and 4 activities –four of them involved P3 who received a general negative final evaluation. For Dan, it concerned 6 tasks and 5 activities – and involved all trainees.

In fact, the content of the interventions during the driving task was generally detailed: what “disappeared” was precision. For instance, one activity negatively commented: “use of indicator when parking on the left side” could have been included in the general final comment “lack of seriousness”.

Use of the TRF during the driving phase
Data were written on the TRF during the driving phase for each trainee, with three types of use: 1) Written information intended to prepare the debriefing phase without interaction with the trainee; these “en route” comments were the most numerous (12 for Pat and 11 for Dan); 2) Written information was immediately commented for the trainee (2 for Pat and 5 for Dan); 3) The trainer commanded the trainee to stop the car, drew a schemata on TRF and used it for explaining specific driving points (3 for Pat and 1 for Dan). The main use of TRF was oriented toward the trainer himself, for memorising elements to be noticed, and eventually commented later in the debriefing phase.

From oral debriefing to comments written in TRF
During debriefing, trainers addressed their oral comments only to the trainees. The written comments (on the TRF) were also possible resources for asynchronous communication between trainers. Discrepancies between trainers’ oral debriefing and their written comments can be interpreted as cues of a dominant orientation in the use of TRF. Differences in expressing comments can inform about how a trainer took into account information needs of his following colleague.

Two elements were considered: 1) the difference between the number of oral and written comments, and 2) precisions or ambiguities of the formulation itself. Table 3 presents the first comparison.
Table 3. Number of trainers’ oral and written comments depending on their target (task, activity or behaviour).

<table>
<thead>
<tr>
<th>trainer</th>
<th>target of the comment</th>
<th>oral comments</th>
<th>written comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pat</td>
<td>task</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>activity</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>behaviour</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Dan</td>
<td>task</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>activity</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>behaviour</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

In terms of trainers’ total number of comments, there was no real difference between oral and written comments: TRF might constitute a significant source of information.

For both trainers, tasks were the dominant target in oral comments, while in written comments Pat remained centred on tasks (but referred to less tasks on TRF: 7 instead of 11), and Dan also referred to trainees’ activity and behaviour.

However, the terms used in the written comments were not always without ambiguity. Two types of ambiguities were encountered. The first one is an imprecision between what has been done and what must be done. The second one is related to how the following trainer may interpret a comment in an operational didactical way.

For instance, “driving in motorways must be revised” is a clear indication for a future didactical objective in terms of task, whereas “motorway entrance” alone is ambiguous. The activity referred to in the comment “let take time for reading road indications” is clear, while “more controls” might refer to a recent acquisition as well as to a lack in information gathering.

For each trainer, five cases of ambiguous formulations
were observed, mainly concerning trainees’ activity (7 on 10) on a variety of issues (taking information, analysing information, anticipating, …). The dynamics of trainees’ acquisition was more often expressed by Pat (7 occurrences), such as “roundabouts in progress”, “motorway exit not yet acquired”; “road position is still uncertain”. Dan used more often indications about what tasks should be performed in the future lesson (“to be revised: motorways entrance”) and used few linguistic cues of progression (“it’s better but always difficulties to remain attentive”).

DISCUSSION AND CONCLUSION
An exploratory study was conducted about driver trainers’ activity depending on whether they individually follow a trainee’s progression or share training with other trainers. Two experienced trainers were observed during driving lessons, each with 4 trainees. Two main goals oriented the study: 1) defining a general methodology for analysing trainers’ activity as expressed toward trainees or in a tool designed for communication with trainees and between trainers (TRF); 2) identifying the extend to which interacting with a trainee previously trained by another trainer placed specific difficulties for defining didactical objectives for the observed lesson; a related research objective was to analyse the use of the communication tool.

The method of analysis focused on explicit trainers’ interventions expressing didactical goals during briefing, prescribing tasks, commenting task performing, trainee’s activity and behaviour during and after the driving session. The “level of granularity” in our coding scheme was defined by the trainers’ verbalisations and not by a detailed analysis of the driving tasks and manoeuvres as in Groeger and Clegg (2000, in press). This scheme of coding enable us to analyse the dynamics of trainers’ activity, and to identify differences between trainers’ didactical orientations in all phases of the training session Pat was focused on driving tasks whereas Dan expressed his initial didactical objectives in terms of trainee’s activity or behaviour, and devoted an important part of his written comments on TRF on these last issues.

Groeger and Clegg (op. cit.) shown that trainers’ interventions are depending on trainees’ difficulties and acquisitions: their number decrease with increasing trainee’s autonomy. For deepening trainers’ activity analysis in this direction, it appears useful to search for more precision about the content of trainers’ interventions. For instance, our coding scheme aims at taking into account the dynamical dimension in trainee’s competence, (expressed through evaluations such as “in progress”, “to be practised”, etc.), beyond their positive or negative valence, without loosing information about the driving task triggering the trainer’s comment, to the difference to Rismark and Solvberg (2007), who did not refer to such a task analysis.

Globally, in analysing the coherence along the training session, we did not identify noticeable difficulties in their initial diagnosis nor discrepancies between what they intended to reach as didactical objectives and what was performed during the driving session, even with trainees they were not familiar with. However, present data do not enable us to tackle the issue of the depth of initial diagnosis and anticipation.

TRF was designed as a communication tool between trainers. In Pat’s and Dan’s utilisation it was also used as a tool oriented the trainer himself for memorising observations of trainee’s driving competence; the fact that such an use was made in the driving context and oriented toward the trainer himself might contribute to create ambiguity for a collective use. TRF was also used as a mediation between trainee and trainer in the didactical interaction during the lesson. These points should deserve interest in a process of continued design of the TRF tool.

We can also underline the fact that when a trainee presented a peculiar difficulty –such as a lack of ankle flexibility with strong consequences as regarding the vehicle mastery, the lowest level in all driving models–, the previous trainer and the present one discussed the case face-to-face before the lesson and devoted more time in direct interaction with the trainee during the briefing phase: direct interaction was privileged with regards to a relation mediated by the TRF.

Moreover, many comments written in TRF expressed in terms of trainee’s activity and behaviour were difficult to be made operational at a didactical level: this point calls for a specific attention in designing trainers’ training.

Schmidt argued that “written artefacts can at any time be mobilised as a referential for clarifying ambiguities” (1999, p. 326). In our case of asynchronous cooperation in driver training such a use was not observed. A converging result was observed in cases of asynchronous co-operation in healthcare (Hamek et al., 2005): ambiguities were generally solved by the existence of mutual knowledge, but complex diagnosis and planning called for face-to-face interaction, as was observed in our study in a specific trainee’s case.

This exploratory study indicates several ways for further research, in order to deepen the analysis of the collective dimension in driver trainers’ activity. Firstly, we need to identify more precisely the information trainers gather from TRF when they did not know at all the trainees and their previous trainers, compared to their interpretation of TRF comments when they know their author. Deepening the analysis of this initial diagnosis may highlight the difficulties that may be encountered by trainers in asynchronous co-operation depending on shared knowledge, and orient possible changes in the TRF design. Finally, the issue of how to assess precise elements concerning trainees’ activity and behaviour should lead to reconsider trainers’ training.
ACKNOWLEDGMENTS
This study received a financial support of the ACI “Sécurité routière et société” (INRETS-CNRS-Ministère des Transports). We thank Claire Bellouin and Josué Timianguel for their participation in the study, and instructors, driver trainers and trainees for their cooperation. Christian Lefebvre’s expertise, in driving analysis, drivers’ and trainers’ training, was an invaluable help.

REFERENCES


