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Asking questions… getting answers

A sociopragmatic approach to vocational training interaction

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Adopting a sociopragmatic and interactional perspective, the paper proposes to investigate how apprentices engage in questioning practices and how trainers respond to these questions. A detailed empirical analysis of audio/video data collected in the context of Swiss training companies establishes that answers provided by trainers in response to questions do not constitute the dominant form of questioning work observed. Alternative interactional patterns that stress the tensions connected with questioning in the workplace context and the complexity of the social practices associated with workplace learning are identified and described. These findings illuminate the challenges faced by apprentices when joining the workplace and underscore the importance of a sociopragmatic perspective in addressing social issues related to initial vocational education.

Keywords: questioning, answering, interaction, apprenticeship, workplace learning, sociopragmatics

Introduction

The present paper investigates issues in initial vocational education, a domain that has not attracted much attention amongst discourse analysts. It aims at understanding how apprentices access vocational knowledge and experience identity transformations during training programs in everyday workplace contexts. What kinds of learning opportunities does the practical experience of work afford? What roles do trainers and co-workers play in sharing their expertise and assisting apprentices in their learning? These questions have become of interest for policymakers and educational researchers in Switzerland, in a context where a growing number of young people are dropping out of apprenticeship programs.

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These issues are not extraneous to language use and sociopragmatic phenomena. Becoming a skilled worker and sharing expertise require, at least to some extent, to engage in interactional activities mediated by a variety of sociopragmatic processes. These processes can be regarded as valuable methodological resources for understanding the complexities associated with vocational education. From that standpoint, discourse analysts can contribute to a better understanding of the challenges facing apprentices when accomplishing a transition from schooling to employment.

To illustrate the overall relevance of a sociopragmatic approach in vocational education research, a specific interactional phenomenon will be put under scrutiny. When apprentices engage in productive tasks, they often address questions to their trainers or colleagues in order to elicit information, to request clarification or to gain permission to proceed to further steps of their activities. These questions are part of a larger set of strategies by which apprentices display help-seeking behaviors to cope with the requirements of workplace environments they are not yet familiar with. These help-seeking behaviors play an important role in the practice-based pedagogy underlying workplace learning. They are often left to the initiative of apprentices and are seen as opportunities to gain vocational knowledge from more experienced workers (Billett 2001: 150).

The purpose of the paper is to contribute to a better understanding of how apprentices and their trainers do this questioning work in the context of the workplace. More specifically, how do apprentices ask questions in the workplace? How do vocational trainers respond to these questions? To what extent do these questions and answers differ from or replicate questioning practices observed in other education settings, like classrooms for instance? And what implications in terms of vocational learning and professional socialization can be drawn from the various existing patterns?

Addressing these issues requires taking a number of steps. The first section of the paper provides a brief overview of the Swiss initial vocational training system and discusses some of the problems that currently constitute challenges for this area of education. Section two proposes a brief literature review about questions and questioning in educational settings. Section three presents a theoretical frame in which 'questioning sequences' are seen as relevant units of analysis for examining the collective and dynamic nature of questioning work in interaction. Section four focuses on methodological considerations and describes how specific data were collected for supporting this study. An empirical approach taking the form of a case study is developed in section five. Based on a collection of questioning sequences recorded in one training company of the Geneva area, a classification of interactional patterns is proposed. This classification supports the idea that direct answers are neither the only nor the dominant type of utterances that trainers offer

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in response to questions initiated by apprentices. Through their discourse, trainers address other sorts of activities than the ones framed in the questions and also display specific attitudes towards the conditions in which questioning work is done in context. Finally, section six reflects on the significance of the various interactional patterns observed and links the micro-pragmatic and interactional processes involved in questioning work with wider social and educational concerns regarding initial vocational training.

1. Guided learning at work: Apprenticeship in the Swiss vocational education and training context

Switzerland is often acknowledged for the specifics of its vocational education and training (VET) programs (Dubs 2006). These programs play a central role in the educational system. After completion of compulsory education at lower secondary level, 65% of the students enroll in the VET system and only one-third specialize in programs of general education at upper secondary and tertiary levels. Apprenticeship programs proposed in what has been termed the 'dual training model' remain the predominant form of upper secondary education in Switzerland. These apprenticeship programs combine school-based teaching with practical experience gathered in production environments at the workplace. For a long time, the 'dual' pathway has been seen as an effective solution for securing smooth transitions from school to work, and from education to employment.

Nevertheless, during the past few years, recurrent problems have emerged in this area of education. According to a recent longitudinal survey conducted in Switzerland (Stalder and Nägele 2011), the first problem often experienced by youth in a market-driven VET system is the delayed access to upper secondary education. More than 20% of all young people completing compulsory school do not manage to directly enter upper secondary education. Candidates with migrant background are also significantly more often enrolled in 'bridging courses' before moving into apprenticeship programs. The second problem that has attracted attention over the years is the increasing level of attrition and change in apprenticeship programs. Depending on the occupation, between 20% and 40% of apprentices who enter the dual VET pathway do not finish their apprenticeship within the stated terms of the contract. Given these circumstances, it has become crucial to gain a better understanding of the causes leading to attrition and to reflect upon ways of transforming apprenticeship programs so they respond to this social issue. Recent research conducted in this area (Lamamra and Masdonati 2009) has, for instance, investigated the reasons apprentices mention for interrupting their apprenticeship before completion. This qualitative study establishes that poor

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working conditions, low support by trainers, and relational problems with workers are most often cited as causes of dropout.

From a theoretical as well as empirical standpoint, it is not sufficient to identify causes, reasons, and factors leading to non-completed training pathways. Instead, there is a need for understanding the *processes* by which these causes and factors are being enacted in practice, how attrition is constructed in action, and what kind of relational and practical issues apprentices, trainers, and workers are experiencing when engaging in work. This requires a comprehensive explanation of the complex mechanisms by which apprentices learn through work as well as a better empirical knowledge of the actual conditions they face in the various contexts in which they are trained.

Analyzing the unfolding of *questions* and *answers* in vocational training interactions can be seen as a relevant step in this direction. As pointed out by Billett (2001), it is often by means of questioning practices of different sorts that experienced workers may (or may not) assist novices to build up expertise and that knowledge may be made visible and shared in instructional activities. Hence, the empirical conditions in which this questioning work is being accomplished in interaction deserve particular attention, as they may illuminate how fine-grained pragmatic phenomena contribute to cognitive as well as relational dimensions of vocational learning in the workplace.

2. Questioning in educational settings

Questions and answers have been studied by scholars belonging to a wide range of areas in linguistics (Fried 1994). The scope of the present paper does not permit an extensive literature review of this diversity. Alternatively, it may be useful to examine how research conducted in the field of education has approached the process of questioning and what sorts of issues have been investigated in such a field. In the following sub-sections, an attempt is made in that direction through discussing the major achievements visible in this area of research.

2.1 Questioning and instructing

In the field of education, questions and answers have often been seen as one of the most important tools by which instruction is provided at various ages and in diverse institutional settings. Conversation Analysis (CA) has been fruitfully applied in this area and has provided a substantial contribution to the understanding of questioning practices in school settings. By promoting a naturalistic study of everyday classroom interactions, CA has become interested in describing how

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participants engage in 'questioning work' and 'do questioning' in the classroom (Mehan 1979; Cazden 2001; Macbeth 2003). As these practices are to a large extent initiated by teachers, the way teachers design questioning has attracted particular attention. Two major findings from this research area can be highlighted. The first consists in observing that questions addressed by teachers to students generally have a rather distinct meaning compared to questions asked in ordinary conversations. Indeed, teachers use a wide range of questioning devices to elicit from students notions they already possess. They use questions to display knowledge to the class and to orient the students' attention towards specific information. The second finding has to do with the specific sequential order by which questions are being asked, responded to, and evaluated by participants. Mehan (1979) identified for instance the sequence Initiation — Response — Evaluation (IRE) as a recurrent sequence of classroom instruction. This pattern stresses the 'lived orderliness' of classroom discourse and the collective and dynamic nature of social practices conducted in educational settings. Over the years, questions with known answers and IRE sequences have been investigated in a vast array of empirical contexts, related to various conversational processes. The abundant studies conducted in a CA perspective have provided alternative views on cognitive approaches to learning and instruction. They have stressed the idea that "knowledge of the correct answer is not a cognitive state external to the interaction and independent from the way in which interaction is organized by participants" (Margutti 2006: 244).

2.2 Questioning and scaffolding

In the fields of developmental and socio-cultural psychology, questions with known answers have often been investigated in reference to 'scaffolding'. Initially developed in the context of dyadic interactions between parents and young children (Bruner 1983; Wood, Bruner and Ross 1976), the concept of scaffolding refers to the discourse-mediated teaching and learning process, wherein the adult helps the child progress from assisted performances to unassisted ones, aligning to what Vygotsky (1978) called the Zone of Proximal Development. Based on this seminal work, numerous scholars have attempted to transpose the concept of scaffolding into the context of school interactions (Mercer 2000; Rojas-Drummond and Mercer 2003; Panselinas and Komis 2009) in order to investigate the educative value of various sorts of dialogues (i.e. teacher-led dialogues or peer group discussions). From this standpoint, questioning practices initiated by teachers have been seen as powerful communicative means by which students are guided to elaborate their own thinking. Interestingly, the practice of scaffolding has also been investigated in adult and vocational education. In the field of workplace learning for instance, Billett (2001: 150) sees questioning dialogues initiated by experts as efficient ways

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"to engage learners in a process of learning through successive phases of questions and responses". In the Francophone field of so-called *vocational didactics* ('didactique professionnelle'), similar claims have been made. Mayen (2002) for instance stresses the role of questions asked by experts in order to help novices understand, and acquire knowledge of, the work-process, while Kunégel (2005) sees questioning dialogues as a dominant interactional pattern belonging to specific phases of apprenticeship programs.

2.3 Questioning and engagement in learning

Besides the questioning work initiated by teachers and experts in classroom discourse, other linguists and educationists have also focused on questions asked by students. This orientation is the origin of an important field of investigation in educational psychology; it represents a change from a "psychology of instruction" towards a "psychology of inquiry" (Resnik 1983). Numerous studies have been conducted on students' questioning, claiming that question asking should be regarded as a critical mechanism for comprehension, problem-solving, creativity, and intelligence (King 1994; Newman 2000). One striking and recurrent observation stemming from this research area is that students usually ask few questions and tend to avoid active help-seeking attitudes (Susskind 1979). As put by Dillon (1988: 197) in rather pessimistic terms, "those who ask questions — teachers, texts, tests — are not seeking knowledge; those who would seek knowledge — students — do not ask questions". There have been numerous attempts to explain why students refrain from asking questions to teachers (Ryan, Ghen and Midgley 1998; Butler 1998). Personal as well as social and environmental factors are recurrently seen as important causes. But interestingly, teachers' attitudes towards students' questions and judgments about learners themselves also play a crucial role and indicate that students' passivity is very much induced by the teachers themselves (Good, Slavings and Mason 1988; Beck 1998).

Two properties of the studies reported here deserve brief comments. The first consists in observing that amongst the diverse body of research devoted to questioning in educational contexts, parent-children interactions as well as classroom practices appear to have attracted major attention. Except for studies conduced on scaffolding in workplace learning, few scholars have investigated the practice of questioning in vocational education and training. The second comment relates to the methodological gap between 'naturalistic' and 'cognitive' approaches to teaching and learning: naturalistic approaches have focused primarily on teachers' or experts' questioning, whereas cognitive approaches have also addressed the students' perspective on questioning. Consequently, there is a need for empirical description of questioning initiated by learners in vocational education. Social

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approaches to discourse and interaction may profitably inform our understanding of these social practices.

3. A sociopragmatic approach to questioning sequences

In the present section, the notion of *questioning sequence* is taken as a relevant unit of analysis for studying how questions are initiated by apprentices and responded to by trainers. More specifically, questions and answers are embraced as *praxeological*, *dynamic*, *multimodal*, and *relational* processes. In the following, these various properties are elaborated on in more detail.

Firstly, as shown by the founders of pragmatics (among others, Austin 1962; Searle 1969), questions and answers have practical implications in the world: they convey rights and obligations towards speakers and recipients and transform the participants' state of knowledge. Hence, questions and answers are seen as instances of *speech acts*, actions that are accomplished through the mediation of language use. Over the years, there have been continuing debates regarding the mapping of forms and functions of questions and the extent to which the pragmatic meaning of questions and answers is encoded in the semantics and syntax of utterances (Fried 1994). In line with Schegloff's position (1984: 34), it is argued by the present author that interrogative sentences of various kinds (*yes-no* questions, *wh-* questions, alternative questions, tag-questions) may convey meanings other than questioning and that, conversely, questioning can be accomplished by linguistic forms other than straightforward questions. Consequently, an important distinction is to be made between *questions*, defined as specific grammatical structures, and the social practice of *questioning*. Analyzing the latter requires paying attention to the former, but should not be limited to the examination of linguistic properties.

The social practice of questioning is closely related to that of answering and should be regarded as a dynamic and collective construction. Following McHoul (1987), we take questioning as being very much a "hearer's problem": analyzing the construction of answers makes visible the respondent's interpretation of the question and the motives of the questioner. In other words, it is when questions are answered that their pragmatic status in discourse can be fully identified. This sequential way of looking at questioning has been widely promoted by conversation analysts. For CA, questions and answers are linked pair parts of sequences of talk (Sacks, Schegloff and Jefferson 1978). Questions are first pair parts that make the production of an answer in the subsequent turn conditionally relevant. This, of course, does not mean that all questions are followed by answers, but that questions may project various 'preferred' or 'dispreferred' responses. Consequently, it is assumed that the relevant unit of analysis for investigating questioning work in

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interaction includes not only the ways speakers design questioning, but also the ways recipients elect to respond to these questions by providing answers or exhibiting alternative interactional behavior. It is this more global unit of analysis we define as the 'questioning sequence'.

The dynamic unfolding of questioning sequences should not be regarded strictly as a linguistic construction. Various and heterogeneous semiotic resources are usually combined by participants in order to accomplish questioning work. Selting (1992) for instance has stressed the role of prosody in the making of a question and demonstrated convincingly that the prosody of questioning is far more complex than a system of intonation bound to syntactic structures. Pauses or delayed responses may also be highly meaningful in understanding the sequential organization of questioning sequences (Gardner 2004). Other studies conducted from a CA perspective have stressed the importance of non-verbal actions such as gaze, body positions, and gestures in accomplishing questioning in interaction (Goodwin 2000). As a result, questioning sequences can be viewed as part of a global multimodal meaning-making process by which participants engage with a wide range of symbolic tools available in the environment (Kress *et al*. 2001).

Finally, the dynamic unfolding of questioning also has important social and relational implications for participants. Questions and answers determine rights of, and obligations towards, interactants. Questions and answers are related to the social roles questioners and answerers take in interaction and to the identities they display in social encounters (Goffman 1961). Consequently, the performance of speech acts such as questioning and answering is very much related to institutional arrangements, as pointed out in a large number of studies. 'Face' and other social values are also involved in the process of questioning. In terms of politeness theory (Brown and Levinson 1987), asking questions can endanger the speaker's positive self-image by revealing his or her ignorance; it may also be a threat to the recipient's negative face, by imposing a specific sort of subsequent action to be taken by the speaker. Conversely, answering a question or not may have implications for the participants' positive and/or negative faces.

It is this combination of concepts and analytic tools borrowed from pragmatic linguistics, conversation analysis, multimodal discourse analysis, and politeness theory that supports a sociopragmatic approach to discourse and interaction. Such a combination may be regarded as carrying a certain risk inasmuch as these approaches promote alternate modes of analysis (Macbeth 2003). However, consistent with methodologies recently applied by linguists in various empirical fields, including workplace studies (Holmes and Stubbe 2003) or educational settings (Rex *et al*. 2006), we take a sociopragmatic approach as a relevant analytic frame for investigating the unfolding of questioning sequences at various levels of organization and for supporting a 'thick' description of these discourse practices.

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4. Data and methodology

The empirical material supporting this study comes from a broader research program conducted at the University of Geneva since 2005. The program investigates vocational training interactions in the Swiss apprenticeship system (Filliettaz, de Saint-Georges, and Duc 2008; Filliettaz 2010). These data were collected through long-term ethnographic observation of everyday training practices in three technical trades in the Geneva area: car mechanics, electric assembly, and automation. Various training contexts were observed at different stages of apprentices' learning trajectories. With the consent of participants, observations were video-recorded by the researchers. The complete data set comprises 150 hours of audio/video recordings collected in one vocational school, two training centers and seven different training companies. These recordings document sequences of ordinary training and work activities in which a cohort of approximately 40 apprentices interact with a variety of experts, ranging from vocational teachers and dedicated trainers to experienced co-workers. Field notes, written documents, and research interviews were also used to allow for complementary perspectives on the data.

For the purpose of this study, a specific subset of empirical material will be used. Observations consisted in shadowing Rodney (hereafter ROD), a first-year automation apprentice, at the very beginning of his practical training within a company specialized in the production of electric boards for the building industry. Within the company, ROD was under the supervision of Fernando (FER), his vocational trainer. As is usually the case, Fernando was not dedicated exclusively to the instruction of apprentices. He was also the manager of an important workshop and contributed to productive work tasks. The training model followed by this company was strongly oriented to productive concerns and considered that apprentices should learn by being assigned productive tasks from the very beginning of their apprenticeship program.

The data collected in this specific context comprised five hours of video recordings documenting how ROD engaged in the production of electric boards with the assistance of FER. Amongst these recordings, particular attention was paid to questioning sequences initiated by the apprentice and addressed to his trainer. These questions were part of wider help-seeking behaviors displayed by ROD when facing difficulties at work. They were facilitated by the fact that ROD and FER shared the same work environment; they consisted mainly in eliciting information, clarifications and permission from the trainer.

A collection of thirty questioning sequences was extracted from the data and the transcribed sequences were analyzed in detail, aimed at understanding how participants engaged in questioning work. The analysis resulted in the identification of recurrent patterns by which ROD addressed questions to FER and by

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which FER responded to these questions. In what follows, we illustrate the various patterns observed and reflect on the relational and pedagogical implications of the sequential order relating questions to answers.

5. Patterns of questioning sequences in vocational training interactions

Although answers usually constitute preferred responses in adjacency pairs initiated by questions, a detailed analysis of our data showed that directly answering a question was far from being the dominant way for participants to do questioning work in interaction. And even if sequences of questions and answers were sometimes observed, a variety of alternative patterns does exist. In the following subsections, we define and illustrate the standard questioning pattern observed in the data (5.1), before exploring the various alternative ways ROD and FER engage in questioning work, whether by reframing the activity type (5.2), by doing scaffolding (5.3), by delaying the answer (5.4), or by withholding the question (5.5).

5.1 The standard questioning pattern

The standard pattern of questioning refers to cases in which the trainer chooses to respond to the question by providing an immediate answer. The pattern unfolds in a three step sequence in which: a) a question is asked by the apprentice, b) an answer is provided by the trainer in the following turn, and c) the apprentice may ratify the answer.

Excerpt (1) illustrates such a questioning pattern. This excerpt takes place when FER explains to ROD how to fix a brass clip on an electric board by using a screw larger than the pre-existing hole:

(1) *making a small hole (Film no. 226, 25'28–25'32)*[1]

1.	ROD:	OK\ . j'fais un petit trou/
		OK I make a small hole?
2.	FER:	ouais t'agrandis le trou/
		yep you enlarge the hole
3.	ROD:	ah OK\
		oh OK

In this first sequence, ROD produces a declarative with a rising intonation in line 1 ("OK I make a small hole?"). It is sequentially interpreted by FER as a question, as indicates his immediate answer ("yep you enlarge the hole", l. 2). ROD then ratifies this answer, displaying that he has understood the instruction provided by FER.

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This standard questioning pattern may appear on its own, in the form of the basic sequence described above. It may also unfold recursively and take place in more complex sequential arrangements that cannot be illustrated here due to space limitations.

5.2 Reframing the activity type

Alternatively to the standard questioning pattern illustrated above, trainers may touch on other sorts of activities than the ones explicitly framed in the apprentices' questions. This shift from one activity to another requires that participants successively pursue different and sometimes distant goals, associated with specific social roles. We use the notion of *reframing* to define such questioning patterns in which the answering to the question introduces changes in the local context and transforms the activity type of the encounter (Goffman 1974).

Excerpt (2) provides an illustration of this reframing pattern. ROD has just finished assembling his electric board and is ready to move towards the next step of the production procedure, consisting in the engraving of plastic tags. Four different colors are used for these tags (blue, black, white, red), each color having a specific meaning in the field of electric assembly. Excerpt (2) shows how the color of such tags becomes a practical problem to be solved by ROD when he initiates the engraving procedure.

(2) *Choosing the right tag (Film no. 226, 08'56–11'01)*

1. ROD: bon je vais couper les étiquettes
   so I'll cut the tags
2. ((ROD se dirige *vers le local du PC*)) [**#1**]
   ((ROD moves towards the computer room))
3. ROD: Fernando/ .
   Fernando?
4. FER: <u>quoi\</u>
   what?
5. ROD: ((se retourne et s'oriente vers FER)) [**#2**]
   <u>c'est des</u> étiqu- des étiquettes euh bleues/
   ((turns around and orients his body towards FER))
   shall I use blue tags?
6. FER: non\
   no
7. ROD: noires/
   black?
8. FER: non non\ . je t'explique tu notes dans ton cahier\
   no no I'll explain it to you, write it down in your notebook

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9. ROD: ouais\ ((se dirige vers son établi et prend son cahier))
yep ((goes back to his place and takes his notebook))
10. FER: tu notes\ . «COULEUR/ étiquettes\»
you write «color [of] tags»
11. ROD: attends\ ((prend un stylo et ouvre son cahier, 4 sec.)) [**#3**]
wait ((takes a pen and opens his notebook, 4 sec.))
12. parce que y a des: .. OK\
because there are- OK
13. ((écrit le texte dicté, 15 sec.))
((copies the dictated text in his notebook, 15 sec.))
14. ROD: étiquettes\
tags
15. FER: t'as marqué «couleur étiquettes/»
did you write «color [of] tags»?
16. ROD: ouais\
yeah
17. FER: OK\ . «appareil Hager/» . donc «disjoncteur Hager» si tu veux/
OK «Hager device» or «Hager breaker» if you like
18. ROD: OK\
OK
19. FER: «disjoncteur Hager/» .. «étiquette en BLEU\»
«Hager device», «blue tag»
20. ROD: ((*écrit le texte dicté*))
((ROD writes down the dictated sentence))
[…]

#1: ROD moves towards the computer room to fetch the plastic tags

#2: ROD turns around and asks FER "shall I use blue tags?"

#3: ROD goes back to his place and writes the instructions in his notebook

At the beginning of excerpt (2), ROD works alone but comments on the progression of his task ("so I'll cut the tags", l. 1). This comment may be an instance of self-talk, but it may also be addressed both to the observing researcher and to the trainer, working on the other side of the table. Immediately after this announcement,

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ROD moves away from the electric board and steps towards the computer room, where the plastic tags are stored (see #1). However, in the middle of this move, ROD initiates a questioning sequence, addressed to his trainer. The initiation of this sequence relies on specific linguistic, sequential, and non-verbal resources. A summon is first addressed to the trainer ("Fernando?", l. 3), followed by an immediate response from FER ("what?", l. 4). This second pair part closes the pre-sequence prior to the question. A change in the body orientation then occurs. ROD stops his progression towards the computer room and turns around towards his trainer (see #2). Finally, ROD addresses a yes-no question to his trainer in a direct interrogative form ("shall I use blue tags?", l. 5).

The ways the trainer engages in this new questioning sequence deserves particular attention. In line 6, FER provides an immediate answer ("no"), but fails to expand this answer, even though an expansion would probably have been expected in this case, the negative response acting as a dispreferred action in the context. This absence of expansion leaves ROD's question unanswered and leads him to make a second attempt to guess the correct color to use in this particular case ("black?", l. 7). Again, the answer provided by FER is a negative one ("no no"), but this time, it is followed by an expansion ("I'll explain it to you, write it down in your notebook", l. 8). What happens next is actually much more than an expanded answer. It consists of a progressive establishment of a new type of activity, in which FER dictates to ROD the global classification of colors to be used for tags when referring to various electric devices. This reshaping of the local context is made visible by the ways participants make use of the material environment. ROD for instance goes back to his place (see #3) and uses specific semiotic tools — a notebook and a pen — that are quite distinct from the kinds of objects used for production. Moreover, significant changes occur at this stage regarding the sequential and topical organization of the interaction. FER dictates sequences of text referring to the different categories of color to use: "you write *color of tags*" (l. 10); "did you write *color of tags*?" (l. 15); "OK *Hager devices* or *Hager breakers* if you like" (l. 17); "*Hager devices, blue tags*" (l. 19). In response to these instructions, ROD synchronizes his writing to FER's dictation and provides feedback regarding the progression of his writing: "wait" (l. 11); "tags" (l. 14); "OK" (l. 18). Consequently, the goals and situated identities endorsed by the participants at this particular moment differ from the ones shaping the context at the beginning of the excerpt. They consist of an explicit sequence of formal instruction in which the participants assume teaching and learning roles that are not restricted to productive worktasks.

In other words, the sort of answers provided by the trainer in response to ROD's questions reshapes a local request for information into another type of activity — the dictation — which has its specific form of organization, and which is not unrelated to routine practices as they can be observed in specific social

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institutions (such as classrooms, for instance). It is this reshaping of the local context that we describe as a process of 'reframing the activity type'.

5.3 Scaffolding

There is another way for trainers to move away from the standard answering pattern when being questioned by apprentices in workplace interactions. Such alternative responses consist in reversing the questioning process and assisting apprentices to find answers to their own questions. In such situations, experts become themselves questioners and initiate interaction sequences that can be seen as instances of scaffolding dialogues.

Excerpt (3) illustrates this reverse questioning process, by which the apprentice is being progressively oriented towards specific pieces of information. This excerpt takes place at the end of the production of the electric board. At this stage, ROD has to fill in a 'traceability form', in which he is expected to provide detailed information referring to the electric board under construction. One of the items to be mentioned in this form is related to the maximal charge supported by the electric board, referred to as "Imax" in technical terms. ROD is not sure what figure to indicate for this particular item.

(3) *Filling the traceability form (Film no. 228, 08'44–09'25)*

1. ROD: y a plusieurs mesures d'intensité y a le 32 le 16 le 13/
   there are many different indications for charge 32, 16, 13
2. FER: ouais mais c'est quoi ton souci là\
   yeah but what's your problem?
3. ROD: je sais pas lequel je dois marquer quoi\
   I don't know which one I should write down
4. FER: où/
   where?
5. ROD: là le Imax/ je dois marquer 32/ [#**1**]
   here for the Imax shall I write 32?
6. FER: XX Imax/
   Imax?
7. ROD: parce que là c'est
   because here it's
8. FER: non/ . non non non c'est/ le Imax c'est pas les disjoncteurs qui font foi c'est l'alimentation générale\
   no no no the Imax doesn't refer to breakers it refers to the main power supply
9. ROD: alimentation générale/
   main power supply?

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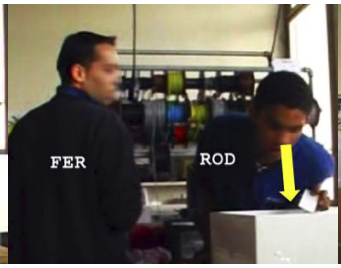
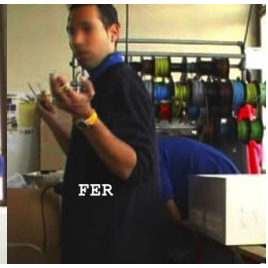
10. FER: elle est combien l'alimentation générale\
how much is the main power supply?
11. ROD: j'ai utilisé du::
I've used a
12. ((consulte son plan de montage, 3 sec.))
((ROD reads the installation plan, 3 sec.))
13. du du du du du/ (3 sec.)
a a a a
14. FER: c'est marqué sur le général/ c'est quoi le général\
it's written on the main switch what's the main?
15. ROD: ((se penche sur son tableau, 3 sec.)) [#2]
((ROD leans over the electric board, 3 sec.))
16. 63 ampères\
63 amps
17. FER: combien/ voilà\
how much? right
18. ROD: c'est du 16\
it's a 16
19. FER: bien:\ donc tu marques combien/
good what should you write then?
20. ROD: Imax 63\
Imax 63
21. FER: voilà tu vois/
there, you see
22. FER > RES: ((se retourne vers le chercheur)) faut lui poser les bonnes questions il trouve tout seul les réponses\ [#3]
((turns to the researcher)) ask him the right questions he will find the answers all by himself!

#1: ROD addresses FER and asks "here for Imax shall I write 32?"



#2: ROD leans over the electric board and looks for the amperage of the main switch



#3: FER turns towards the researcher and comments "ask him the right questions he will find the answers himself"

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In excerpt (3), both the apprentice and the trainer are jointly and progressively constructing the information "Imax = 63".

ROD is the first to focus implicitly on this category and verbalizes a list of possible values that could refer to charge in the context of the traceability form ("there are many different indications for charge 32, 16, 13", l. 1). But the question underlying such a statement remains unclear or at least highly implicit, which brings FER to elicit a clarification from the apprentice ("yeah but what's your problem?", l. 2). ROD then rephrases his question in a declarative form: "I don't know which one I should write down" (l. 4). Again, a repair sequence is initiated by FER, who elicits additional information regarding the context of this question ("where?", l. 4). This additional request for clarification enables ROD to rephrase his question more explicitly, in a yes-no form: "here for the Imax shall I write 32?" (l. 5). Hence, it is only after five turns that the action of questioning is being established as interactionally complete and that participants can move on to the provision of an answer.

The ways this answer is provided also deserves particular attention. In line 8, FER produces a negative answer to ROD's yes-no question ("no no no"). He also expands this answer so as to orient ROD's attention to the difference existing between the main power supply and the various breakers included in the board. The Imax refers to the charge of the former, not of the latter ("the Imax doesn't refer to breakers it refers to the main power supply", l. 8). But at this stage, ROD seems to be unable to understand the meaning of such a statement, as indicated by his request for clarification ("main power supply?", l. 9). FER does not answer directly to ROD's question but reverses the questioning process by placing ROD in the position of an answerer ("how much is the main power supply?", l. 10). In doing so, he initiates a classic form of IRE sequence, in which he prompts the apprentice to give the information he needs in the context. ROD engages in the production of a response, using his installation plan as a resource (l. 11–13). But he does not find the answer to the question in this document, which leads FER to give additional cues and ask a more focused question ("it's written on the main switch what's the main?", l. 14). With this additional hint, ROD is able to retrieve the required information. He leans over the board, looks at the main switch (see Fig. #2) and reads the value related to the amperage ("63 amps", l. 16). FER provides positive evaluations to this response ("how much? right", l. 17, "good", l. 19) followed by a third IRE sequence, in which he addresses a new question to ROD ("what should you write then?", l. 19). ROD then immediately produces the correct answer ("Imax 63", l. 20), which is positively evaluated by FER ("there, you see", l. 21).

Considering this sequence of interaction, it can be observed that FER rarely chooses to provide direct answers to ROD's questions, but responds by reversing the questioning process. FER's questions have various functions at different stages

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of the interaction. In the first section of the excerpt (l. 1–7), the questions consist in eliciting clarifications and contribute to a joint elaboration of ROD's questioning. In the second section of the excerpt (l. 10–21), these questions recurrently initiate IRE sequences in which FER progressively 'scaffolds' the apprentice so he can discover the answer 'himself'. This scaffolding process is not only accomplished by the trainer but also reflexively displayed in a comment addressed to the researcher: "ask him the right questions he will find the answer all by himself!" (l. 22).

5.4 Delaying the answer

In the excerpts analyzed above, FER displayed active forms of engagement in questioning work, even when this engagement explored alternative responses that are distinct from explicit answers. However, there are also a number of cases where trainers fail to engage actively in questioning sequences and display resistance to responding to the questions. One such pattern consists in delaying the answer or forcing the apprentice to perform numerous questioning attempts before his questions get responded to.

Excerpt (4) illustrates such a pattern. It refers to the same engraving task as the one observed in excerpt (2). At this stage, ROD had taken good notes of FER's dictation and had fetched black plastic tags as material for engraving numbers on his board. The engraving procedure requires using specific editing software on a PC located in a computer room. Since this procedure is still quite new to him, ROD tries to clarify whether his trainer will provide assistance or not.

(4) *initiating the engraving (Film no. 227, 00'52–01'00)*

1. ROD: je peux aller graver/ [#**1**]
   can I start engraving?
2. FER: ((FER ne répond pas, 2 sec.))
   ((FER does not respond, 2 sec.))
3. ROD: ou tu vas me montrer\
   or are you going to show me?
4. FER: ((regarde ROD dans les yeux)) [#**2**]
   ((FER establishes eye contact with ROD))
5. ROD: j'ai- je vais sur vertical au lieu d'aller horizontal\
   I set it vertically instead of horizontally?
6. FER: ouais/ ((hoche la tête de manière affirmative)) [#**3**]
   yep ((agrees by nodding his head))
7. ROD: OK\
   OK
8. ((ROD *retourne dans le local du PC avec son cahier*))
   ((ROD goes back to the computer room with his notebook))

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#1: ROD addresses FER and asks "can I start engraving?"

#2: FER establishes eye contact with ROD

#3: FER responds to ROD's question and shows agreement by nodding his head

At the beginning of excerpt (4), ROD takes his notebook and prepares to move towards the computer room in order to initiate the engraving procedure. But before doing so, he asks FER for permission by addressing a direct yes-no question to him ("can I start engraving?", l. 1). This question is not preceded by a summons-answer pre-sequence. Rather, it coincides with an attempt by ROD to establish eye contact with his trainer (see Fig. #1). FER, however, does not respond to his question at this stage. He remains silent during two seconds, continues with his own task and does not align with ROD's gaze (l. 2). This leads the apprentice to a second attempt to initiate questioning by rephrasing a yes-no question as an alternative one ("or are you going to show me?", l. 3). Again, FER does not provide any verbal response to this alternative question, but this time, he establishes eye contact with ROD (see Fig. #2). ROD then produces a third version of questioning, taking the form of a new, alternative question ("I set it vertically instead of horizontally?", l. 5). This new question, in which ROD elicits confirmation of a vertical engraving of the tags, takes for granted that he is being given permission to start the engraving procedure. Hence, it presupposes a positive answer to the first question. It is to this third version of ROD's questioning that FER finally responds explicitly, by providing a positive answer ("yep", l. 6) and nodding as a sign of approval (see Fig. #3).

This sequence of interaction illustrates the diversity of multimodal resources used by apprentices and trainers when doing questioning. It underlines how initiating questions and providing responses in interaction result from a combination of speech with a wide range of semiotic modes, including body positions, gaze, and conventional forms of gestures or 'emblems'. Particularly noticeable here is the specific pattern by which the production of an explicit answer is recurrently delayed by the trainer. It is only after five turns and three questioning attempts that FER finally answers ROD's question. This may be explained by the fact that FER is

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engaged in other sorts of tasks or by the lack of preparation characterizing ROD's first question. But more probably, these recurrent forms of delays may also be seen as a public display of the trainer's resistance to respond, when questioned in this particular context.

5.5 Withholding the question

Resistance to questioning work can also take more explicit forms. Trainers may for instance use pre-sequences, 'pre-framing' an upcoming question as a place to display unwillingness to engage in questioning sequences. In such cases, apprentices may withhold their questions even before having an opportunity to address them explicitly.

Excerpt (5) illustrates this specific questioning pattern. At this stage, ROD has finished engraving the plastic tags and is about to stick them on the cover of the electric board. Suddenly, however, the board falls down from the trestle table and the metal frame drops out of its casing. At the beginning of this sequence, ROD is busy, trying to reinsert the metal frame into the casing, checking to see if nothing is broken, and fastening the frame inside the casing.

(5) *withholding the question (Film no. 226, 39'15–40'20)*

1. ROD: ((ROD insère le chassis après sa chute)) [#**1**]
   ((ROD inserts the metal frame into its casing after the board has fallen down from the trestle table))
2. ouais le fil là/ . j'espère qu'il est pas cassé/
   right the wire here I hope it's not broken
3. ((ROD enclenche les disjoncteurs))
   ((ROD switches on the breakers))
4. FER: ((FER observe ROD))
   ((FER looks over to ROD)) [#**2**]
5. ROD: ((ROD tourne autour du tableau électrique))
   ((ROD goes around the electric board))
6. ROD > FER: mais:/ Fernando/ [#**3**]
   er Fernando?
7. FER: mais:/ Rodney/
   er Rodney?
8. ROD: .. ah non non\ c'est bon c'est bon\
   oh no no it's fine it's fine
9. FER: t'es sûr/
   are you sure?
10. ROD: ouais\
    yeah

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11. ((ROD visse le chassis dans le tableau électrique))
((ROD *screws the metal frame into the electric board's casing*))
(20 sec.)

#1: ROD inserts the metal frame into the casing after the board has fallen down from the trestle table

#2: FER looks over to ROD

#3: ROD addresses a summons to FER "er Fernando?"

At the beginning of excerpt (5), ROD is working alone. He inserts the metal frame containing the electric devices into the casing and checks that nothing is broken (Fig. #1). However, he does not just 'do' so, but reports on the issues he is facing by producing verbal accounts of his thoughts: "right the wire here I hope it's not broken" (l. 2). This public account catches the trainer's attention, as indicated by FER's gaze at ROD on line 4 (Fig. #2). As soon as ROD feels that his trainer is looking at him, he walks around the board and initiates another instance of questioning.

This new questioning sequence does not emerge out of the blue. It is preceded by a summons-answer pre-sequence similar to the one observed previously (see excerpt 2, l. 3–4). In line 6, ROD catches his trainer's attention by addressing a summons ("er Fernando?"). However, FER does not provide the expected second pair-part to this summons. Instead of acknowledging ROD's summons and answering his question, he echoes his address in a sarcastic fashion ("er Rodney?", l. 7), thereby providing a blocking response to the summons. This blocking response has important consequences for the subsequent unfolding of the questioning sequence. In the next turn, ROD decides to withhold the intended question and to close the questioning sequence before completion of its initial part ("oh no no it's fine it's fine," l. 8). FER then asks for confirmation ("are you sure?," l. 9), and ROD confirms his withdrawal of the question ("yeah", l. 10).

Noteworthy here is the way the trainer uses preliminary work in order to block the questioning sequence. By responding with irony to the pre-sequence initiated by ROD, FER again displays his resistance to engaging in a questioning sequence, and orients the apprentice towards the interpretation that a question is not welcome in the local context. Such interactional patterns are certainly not neutral

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from a relational standpoint. They can be seen as clear threats to the apprentice's face and progressively affect the legitimacy of questioning in the workplace.

6. The paradoxical status of questioning work in vocational training interactions

The empirical material analyzed in the case study supports the idea that asking questions and getting answers in the workplace are complex discourse practices in which both apprentices and trainers engage actively. In ROD's case, engagement in questioning work consisted in eliciting specific information, clarification, or permission to proceed to further steps in the task. As shown in the excerpts transcribed, these questions often took the grammatical form of yes-no interrogatives and were sometimes preceded by summons-answer pre-sequences. From the trainer's perspective, engagement in questioning sequences consisted in providing answers to the questions, but with a wide range of sequential patterns that often differed from the standard pairing of questions with immediate answers. A careful examination of these alternative patterns showed that FER not only provided responses to the questions: he also touched on other sorts of activities than the ones framed in the apprentice's questions, sometimes displaying specific resistance towards the questioning work initiated by the apprentice.

These micro-pragmatic properties of questioning sequences contribute to a better understanding of the ways apprentices and trainers 'do questioning' in vocational training interaction. They also have broader implications for the social practices associated with vocational education and training.

Firstly, the variety of questioning patterns observed stresses the difficult and sometimes unpredictable access to vocational knowledge in practice-based training conditions. From the apprentice perspective, access to conceptual, procedural, and dispositional knowledge (Billett 2001: 50) is closely related to the unfolding tasks they engage in. It is when they face obstacles in their work that apprentices need assistance and answers to their questions. But the timing of these tasks may conflict with broader production constraints. As shown in the case study, questioning work involves not only questioners. It also involves expert workers who are themselves engaged in their own productive tasks and who are not regularly available for aligning to help-seeking behavior. Consequently, doing questioning in the workplace involves a dynamic reshaping of the local context and requires that participants engage simultaneously in a plurality of tasks. The training and learning outcomes of such multifocused activity configurations are unpredictable. They may result in sequences of extensive instruction in which trainers temporarily move away from their productive tasks (see excerpts 2 and 3). But they may also

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be limited when trainers are not available for guidance and prioritize their own production (see excerpts 4 and 5).

Secondly, it should be emphasized that the ways apprentices and trainers engage in questioning work in vocational training interactions has important social implications for interpersonal relations and identity construction. As shown in the data, initiating questioning in the workplace can be highly demanding in terms of face work, both for apprentices and for trainers. For apprentices, coping with these relational issues can be difficult to handle, particularly at the beginning of their training program, when their degree of dependency on the experts is high. Indeed, from the data analyzed in this paper, it appears that participants in vocational training interactions face numerous expectations regarding the ways they position themselves in the context. On the one hand, both apprentices and trainers engage in productive tasks and assume professional identities proper to specific occupational fields. On the other hand, they also assume teaching and learning roles, consistent with the training purposes of the apprenticeship program. From this standpoint, the unfolding of questioning sequences is of particular interest for observing how participants cope with these multiple requirements. From the case study presented here, it appears that questioning work may enable participants to display variable and hybrid sorts of identities. Questioning in the workplace sometimes consists of extended sequences of instruction (excerpt 2) or scaffolding (excerpt 3), in which participants act as 'teachers' and 'learners', in ways that are not substantially different from classroom routines. In other cases, this questioning work appears limited and highly constrained by productivity, the dominant frame of professional practice. In sum, questioning sequences seem to afford a wide range of potentialities for identity construction both for apprentices and for trainers, depending on the specific ways these sequences are being accomplished in context.

This latter point stresses the hybrid and paradoxical status of questioning work in vocational training interactions. On the one hand, questions are expected discourse practices by which apprentices display willingness to engage in learning and make use of opportunities afforded by workplace environments. But on the other hand, these same discourse practices are also seen as a lack of autonomy on the part of the questioner and as unprofessional ways of solving practical problems in the workplace context. This type of negative feedback provided in response to questioning is particularly apparent in excerpt 3, when FER comments that ROD should find answers "himself", or in excerpts 4 and 5, when answers are delayed or take the form of blocking responses.

There are important power issues associated with these forms of reluctance on the part of experienced workers to satisfy the needs for assistance expressed by apprentices in the workplace (Filliettaz 2010). However, beyond appearances, there are also rich opportunities for learning that emerge from these means. Indeed, by

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providing negative feedback to questioning or by producing reflexive comments regarding the ways the apprentice addresses expert workers, the trainer prompts for alternative help seeking methods that are seen as more consistent with professional practices. In other words, even though the various alternative patterns of questioning observed may appear rather poor in terms of content and information transferred, they are in contrast particularly rich in terms of learning *how to do questioning* in the workplace. From there, it becomes apparent that what is meant to be learnt in the workplace does not come down to vocational knowledge exclusively, but also includes specific discourse patterns by which professional practice may be adequately mediated. Following Mehan (1979) and Macbeth (2003), what these questioning sequences do in the contexts in which they are accomplished is to orient apprentices to the existence of a 'hidden curriculum', in which they are taught not only *how to work* but also *how work may be interactionally produced*.

These findings shed new light on the issues to do with the problematic transition from school to work. They stress the numerous challenges met by apprentices when joining the workplace, as well as the hybrid and sometimes contradictory expectations faced by them when moving back and forth between multiple training institutions, including vocational schools and training companies. These requirements of initial vocational education are not extraneous to discourse. As seen from the example of questioning work, they are to a large extent mediated by language use, in addition to various other semiotic modalities. Discourse analysis and interactional analysis certainly do not solve the complex issue of how we could respond to the increasing attrition rates in apprenticeship programs. However, they can bring visibility to the complex practices by which these transitions are accomplished in social life, and can also help trainers, as well as the apprentices themselves, to become more reflexive about efficient ways of accomplishing consistent transitions from school to work.

Note

1. Transcripts include both the original French version and the English translation. Transcription conventions are listed in the Appendix.

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Transcription conventions

CAP	stressed segments
/	rising intonation
\	falling intonation
XX	uninterpretable segment
:	lengthened syllable
.	pause lasting less than one second
..	pause lasting between one and two seconds
>	addressor–addressee relation (ROD > FER)
??	unidentifiable speaker
<u>underlined</u>	overlapping talk
((*comments*))	comments regarding non-verbal behavior
[#1]	reference to the numbered illustration in the transcript

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