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iTEO as a Tool-and-Result
in dialogical multilingual language learning

Abstract

In this paper I will document and analyse the use of the iTEO app¹ (henceforth iTEO) for the iPad in the learning of French in a second grade class in Luxembourg. The analysis of the data will result in the characterising of iTEO as a tool-and-result promoting and propelling dialogue and meta-linguistic awareness in multilingual language learning through the recording of utterances for creating stories, a process I refer to as ‘storying’.

In contrast to still prevailing monological and teacher centred visions of language learning in many classrooms in Luxembourg, the app we developed privileges interactions and dialogue among peers as propellers of the learning of French. This dialogic interaction based on Bakhtin’s view that language lives only in dialogic interactions (Bakhtin 1984, 139) draws on manifold resources from the context of the pupils’ private and official language use.

I will describe the tool and suggest how it could be used in the national and local Luxembourgish educational and institutional settings where language learning is of foremost importance and relevance. These suggestions rest on a thorough analysis of dialogues and interactions between two pupils in a process of joint story building.

1 The iTEO tool

iTEO runs on the transportable iPad with its in-built camera and microphone. The app makes use of this recoding device to allow users to record themselves and listen to themselves when speaking in the languages they are learning.

The iTEO user interface starts with a blank frame, such as shown in Figure 1. In Figure 1 the small blue square icon to the left informs us that iTEO is set up for material to be recorded that is numbered as recording ‘1’. Upon pressing the ‘+’

¹ The iTEO app was developed as a follow-up of the desktop version TEO that I developed with the help of the Centre de Recherche Public Henri Tudor when I was working at the Ministry of Education back in 1994. The iTEO app is currently under construction with the help of MindForest within the Bachelor in Educational Sciences where it is used in teacher training, teacher research and teacher in-service training.
button on the right of the control bar, a microphone appears for a second recording. Clicking on this green microphone initiates the recording of an utterance of unlimited length in a range where utterances in the Bakhtinian sense may be as short as a grunt and as long as *War and Peace* (Saul Morson/Emerson 1990, 126).

In Figure 2 the recording of utterance ‘2’ is under way as can be seen by the microphone on the main square and by the red button on the second top square which has now been added to the right of the first. Clicking on the red microphone terminates the recording. At this point, the recording is automatically replayed by the app for monitoring purposes. The learners are able to hear themselves talking and to assess and auto-evaluate their performances within their dialogues.

The user may use the inbuilt camera to take pictures to be used as desktop background pictures and may also identify/label each recorded icon as can be seen in Figure 3. Such a labelling process may help the user to identify particular stretches of discourse or particular utterances within the stream of production. Teachers and pupils may also figure out using such pictures as prompts for utterances and stories.
An important feature of ITEO is that recordings may be deleted, re-recorded or their order re-arranged at any time. The users of iTEO decide on the length of a recording. An icon may identify a sound, a word, a sentence or a whole story.

2 Using iTEO in the Luxembourgish classroom: rationale and perspectives

Luxembourg is a multilingual and multicultural country with a trilingual education system and a very diverse intake. The Ministry of Education’s aims for the development of children’s competencies in the three official languages at primary school are as follows: oral Luxembourgish from pre-school, oral and written German from Year 1 in primary school, oral French from Year 2, and written French from Year 3. It is noteworthy that state statistics show that ethnic minority children, 48% of the school population, underachieve (MENFP 2011, 2012; STATEC 2012). In the schools themselves, language learning programmes tend to be underpinned by a monoglossic view. Linguistic skills are thus perceived as in the need to be developed separately and in a linear way and they are considered as functioning in the learner in a compartmentalised manner (García 2009). As a result, schools and classrooms organise language learning according to a pre-packaged curriculum where pupils perform individualised tasks with pencil and paper even in the domain of oracy. Language instruction is separated along predefined time slots for each language and there is a tendency for streaming pupils into monolithic ability groups.

Contrary to this very monolingual and compartmentalised perspective on language teaching/learning, iTEO was designed
- to include a heteroglossic and dialogic perspective towards language learning in the classroom,
- to institutionalise the practice of ‘storying’ in the classroom,
- to propel language development in a dynamic way,
- to induce the learning of linguistic skills as a team activity linking human and non-human actors,
- in sum, as a means to structure the social practices that will propel the collective language learning process.

Firstly, iTEO is designed with a heteroglossic and dialogical perspective in mind. Children are encouraged to draw on their existing linguistic resources and ‘simultaneous dynamic bilingual practices’ and to ‘translanguage’ (García 2009b, 151, 140). Translanguaging refers to the use of several languages in a flexible and conscious way in order to fit one’s communicative and interactional needs. For example, contents and processes can be discussed in one language while utterances and stories are finalised in another target language. Such a view grants equality of status to all languages in the multilingual Luxembourgish institutional setting. Hence, iTEO enables teachers to set up learning situations that work with rather than against the linguistic diversity of the school population, thus using the ‘interanimation of languages’ (Bakhtin 1981, 51) in order to foster sustainable language development in diverse languages.

iTEO presents also another interest. It allows institutionalising the practice of ‘storying’ in this dialogical (translanguaging) space (Jørgensen 2010) that it sets up. ‘Storying’ is a concept that I have consistently applied in my own teaching practice in the writing workshop (Gretsch 1992), in the TEO project (Gretsch 1994), in the DECOLAP (1995-1996) and DECOPRIM (1997-1999) projects that concentrated on empowering teachers for constructing meaningful learning situations in language learning for their pupils and in the work with students on aesthetic biographies (Bourg/Gretsch 2008). Bruner has insisted that human beings make meaning in the world by using the narrative mode for constructing reality (Bruner 1996, 40, 41, 130). Paley has transposed this view didactically by establishing story and play as children’s original learning tools (Paley 1997). In my dissertation I introduced the activity of ‘storying’ for establishing discursive spaces leading to the development of children’s language competences (Gretsch 2010). The multimodal practice of ‘storying’ has the power to compel, to lead us to reflect, to involve us personally and to transform our practice (Rosen 1986).

‘Storying’ then refers to the fundamental human activity of creating and enacting individual and collective stories (Hardy 1977) that encourages the responsible production, negotiation and interpretation of meaningful dialogues. The concept of ‘storying’ with its multiple relations and connections provides a framework for building and remembering texts and contexts as we follow the storying path (Ingold 2007, 16, 89). The blank frame of iTEO encourages participants to perform unpredictably and in an open way by holding them
responsible for the selection and production of the meaningful frame for the story and for the utterances that they plan to include into the story. It sets the stage for open-ended dialogue and conversation in contrast to the prevalent educational discourse with its mainly fixed and closed tasks. Educational discourse and research tend to conceive of learning in general and language learning specifically as individual achievements (Sørensen 2009, 5). In the work with iTEO however, we adopt a view of authentic human life as dialogic. As Bakhtin would put it:

To live means to participate in dialogue: to ask questions, to heed, to respond, to agree, and so forth. In this dialogue a person participates wholly and throughout his whole life: with his lips, hands, soul, spirit, with his whole body and deeds (Bakhtin 1984, 293).

iTEO in this view allows to create the conditions for making such a dialogue possible.

The dialogic activity of ‘storying’ also constitutes a leading or propelling activity for language development (Van Oers 1999) as it encourages learners to tell, read, write, edit and perform their own stories. ‘Storying’ allows for the interpretation, negotiation and re-interpretation of language in the light of the personal and collective experiences (Cummins 1994). The discussion of the stories, of the composition process and of the languages used can enhance the learners’ development of metalinguistic and metacognitive skills (Graves 1983; Spitta 1997; Wells 1987). In a multilingual setting in particular, this metalinguistic awareness and analytical orientation can go down to the minute details of word-, phonological- or syntactic-awareness (Bialystok 2001, 2004). Pupils may capitalise on their awareness of the arbitrariness of linguistic systems for making choices of adequate words or structures (García 2009, 95/96) when assisting peers in the work with iTEO. As iTEO stores and replays human utterances, it could also be the case that the use of iTEO frees up additional memory for metalinguistic reflections and awareness.

In the dialogic interplay that iTEO allows, the tool itself plays an important role. In everyday life, pupils develop their competencies in diverse languages through interacting with various actors and objects (e.g. children, teachers, parents, computer). The process of ‘storying’ is connecting technological features with social interests and activities. We could use the notion of ‘iTEO team’ for naming the assembly of people, tools and procedures that ultimately produces the utterances, dialogues and stories. As a result, teaching and learning are translated in assemblages or networks of humans and things where

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2 Actor-Network-Theory (ANT) is a potential theoretical frame for analysing the part played by the iTEO app in the language production process. ANT regards agency and intentionality as symmetrically distributed among human and nonhuman actors in the iTEO team and places the human actors not above materials (as the subject dominating the object) but among the materials.
agency is “enacted in the emergence and interactions – as well as the exclusionings – occurring in the smallest encounters” (Fenwick/Edwards et al 2011, 6, 13, 17). In the work with iTEO, there is a fusion of mediating structures: the hardware and the soft, the concept of ‘storying’, the group discourse or dialogue, all of them contributing to the organisation of language behaviour. ‘Storying’ with iTEO can be considered, adapting Taylor’s view, as a dialogical activity as it is effected by the integrated, non-individual agent known as the iTEO team that shares the responsibility for the language activity (Taylor 1991, 311).

Finally, much more than a tool for result or a means to an end, iTEO must be considered as a medium for structuring social practices and procedures that lead to the interpretation and negotiation of discourse and language structures in the target language. iTEO with its in-built function of automatic replay which objectifies and materialises oral language, scaffolds the negotiation process whereby the learners must arrive at a conscious group decision (Stahl 2006) regarding the continuation, the disruption or the re-orientation of the ‘storying’ process. This negotiation is what generates and propels the learning process. iTEO is a tool-and-result in the Vygotskian sense for managing the inevitable uncertainties arising in authentic and dialogic language learning in a target language. The metaphor of tool-and-result, of means and ends (Latour 1999) refers to the unpredictable process of transformation and completion that happens when human (learners) and nonhuman actors (iTEO) join together to transform and complete their dialogues and stories. The iTEO team activity of ‘storying’ generates the motive and constitutes the meaningful context for the use of the tool (i.e. the recording of the utterances with iTEO) and for the achieving of the result (i.e. the finished story). Tool and result are related in a dialectical unity (Holzman 2009) where each unit of the dialogue encapsulates and anticipates the meaningful result of the final story. iTEO as a tool-and-result offers the participants the possibility of continuously creating and re-creating their learning environment even as they learn in it (Holzman 1997).

It is the use of the iTEO tool-and-result that I want to trace in the data that were collected in a Luxembourghish second grade class.

3 The local context for the use of iTEO and data collection

I now describe how pupils of a second grade class in the South-Eastern part of Luxembourg appropriated the pedagogic activity (Hedegaard/Daniels 2011, 7) of ‘storying’ with the iPad and through iTEO. The dialogical multilingual encounter outlined in the rationale above has been re-contextualised (Bernstein 2000) in this concrete institutional context. The iTEO tool-and-result had to be inserted into the rather monological and teacher driven setting of the school. The teacher participated in the technical development of iTEO. He agreed to his
pupils using iTEO in the course of the French lessons that had just started in his second grade class as part of the regular curriculum. The activities with iTEO were normally done in groups of two in a separate room under the guidance of an assistant teacher and randomly recorded on videotape.

The learning episode with iTEO that I will analyse is particular in that I was visiting the school when it happened. I participated in a session with two pupils and with the assistant teacher in the separate room. The session was around the popular curricular theme ‘At the restaurant’ where pupils had to enact the rituals of asking for different items to be displayed on a table for breakfast. As the assistant teacher kept interfering with the pupils’ efforts, I asked her to leave the room with me. My intention was to let the pupils organise themselves for creating a story ‘Au restaurant’ totally in French with iTEO. In this way the pupils should be able to use their prior experiences of such a socio-cultural setting or social script (St. John 2010, 73, 78) in order to develop their competencies in French. The complete dialogue which took place in Luxembourgish and French was video-recorded in our absence and later transcribed. A couple of weeks later I used this videotape in a feedback session with the two pupils, thus “asking for their interpretations, seeking ideas for change, and tabulating the specifics of language learning” (Heath/Mangiola 1991, 34). This feedback session was also transcribed.

The multilingual resources of the pupils in this local institutional setting are typically manifold: the pupils have command of Luxembourgish (oral, taught and spoken from the two preschool years on), German (oral and written, taught, spoken and written as the medium of literacy from the first grade on), and French (oral and partly written, taught, spoken and partly written from the second grade on). But they may vary in their degrees of competencies in these different languages and registers.

In the situation studied, Daniel, a boy, and Fabienne, a girl, both of about 8 years of age, use iTEO for the recording of their story. Daniel is a French boy with a good command of the French language. In this episode he acts as the ‘expert’ having to help – according to the decision of the assistant teacher – Fabienne, a native Luxembourgish girl, with the construction of the French target utterances for completing the episode ‘Au restaurant’. At the time I left the scene with the assistant teacher, the pupils’ iTEO recording session was under way.

4 Data analysis

In my discussion of the data, I will combine the analysis of the transcription of the videotaped dialogical production process with the comments the children made about the same episode during the feedback session. Indeed, in the educational arena, it seems always important to take “as a point of departure for
the analysis of context the perspective of the participant(s) whose behaviour is being analysed” (Goodwin/Duranti 1992, 4). Fabienne’s perspective emphasises the importance of the team or the collective in the language learning process by identifying it as a big factor or even a precondition for meaningful languaging. Comments from the feedback sessions will be marked as asides and be indented.

4.1 Aside 1: The importance of a team for productive language learning

During the feedback session, Fabienne refers to the production of ‘Au restaurant’ as a little difficult, but made easy with reference by the composition of the iTEO team: “Because he is French and I am Luxembourgish.” Language production is thus characterised as a collective phenomenon by the pupil. The team production allows for the distribution of the responsibility in the production of French. The sharing of responsibilities may make the continuation of the language production easier for both parties. The iTEO tool-and-result is not considered to be interfering with the language production even if it slows down the process and interrupts the dialogue between the human actors through the replay of the recorded utterances. Fabienne thinks of iTEO as a member of the language production team. She thinks that it is advantageous to record with iTEO as the recordings will be available for her to listen to later in life. Through iTEO, she will be able to trace how she was learning French during her earliest school days.

The transcription of ‘Au restaurant’ follows the chronological unfolding of the event by means of detailed description. Such a description of the phenomena under observation will uncover the network or collective of people, ideas and technologies that participate in the iTEO team’s language learning process. By following and tracing the event through description (Latour 1999), the analyst can follow the actors, multiplying the details so that his/her descriptions and digressions become infinite (Calvino 2009). In the work with iTEO, the (trans)languaging is situated temporarily in a setting where people interact with tools intentionally designed by other people for the purpose of enhancing communicative behaviour.

Figure 4 gives an idea of the material setting of the ‘storying’ activity ‘Au restaurant’ with the iPad and other objects on the table.
4.2 ‘Au restaurant’

At the beginning of the video-taped sequence, Fabienne and Daniel start by turning the room into a fictive restaurant, a site for ‘storying’. Both Daniel and Fabienne are using simple yet authentic French language structures, even if they might differ from expected norms in the officially prescribed curriculum. A locution like ‘de rien’ that the children will incorporate below does not figure in the official manual’s vocabulary and expressions, but reflects Luxembourg’s idiomatic restaurant talk. While Daniel fluently produces these structures, Fabienne intonates each word separately with the intent of copying Daniel’s pronunciation. Consequently, the prosodic features of her discourse vary from one turn to the next. For instance, Fabienne starts a question by accentuating each word:

F: Tu veux de miel? (Do you want some honey?)
Daniel continues in fluent French:
D: Oui, je veux bien du miel. (Yes, I would love to have some honey.)
Fabienne in a relatively fluent way:
F: Voilà le miel. (Here is the honey.)
D: Merci Fabienne. (Thank you Fabienne.)

At this point, the children stop the recording and iTEO automatically replays the whole sequence completed in one take. The children listen intently. During the replay of ‘Tu veux de miel?’ Daniel insists on stressing ‘le’:

D: ‘t ass le miel.’ (It is ‘le miel’)
4.3 Meta-linguistic awareness

This excerpt illustrates a first instance of meta-linguistic awareness enacted by Daniel with the help of the automatic replay. The standard French expression ought to be ‘Tu veux du miel’, but Fabienne’s ‘de miel’ makes Daniel think of the corresponding French grammatical category of ‘le miel’. Daniel’s comment is ignored as Fabienne goes on to manipulate a bag of bread with the intent to ask for another item in the restaurant.

Meta-linguistic awareness transpires also on another plane as shown in the second example. Here, Fabienne displays this meta-linguistic awareness as she asks Daniel about the prosodic and intonational features needed for the next utterance ‘Tu veux?’ in authentic oral French as opposed to the written version that should be ‘Veux-tu?’:

F: Et ass esou gell? Tu **veux**? (in a rising intonation). (*It is this way isn’t it? Tu **veux**?*)

But Daniel wants to take over the role from Fabienne and asks in Luxembourgish:

D: Ech kann och eng Kéier froen. (*I might also ask for one time.*)

Fabienne agrees in Luxembourgish with Daniel continuing:

F: Jo, da frees du, hein. (*Yes, then you ask, hein.*)

D: Ok, da muss ech soen. (pausing) ‘Je peux avoir du pain s’il te plaît?’ Da sees de ‘oui, voilà le pain’.

(*Ok, then I must say. (pausing) ‘Can I please have the bread?’ Then you say ‘yes, there is the bread’.*)

F: Ok.

D: An dann soen ech ‘merci’. An du sees ‘de ri-en’. (*And then I say ’thank you’. And you say ‘you’re welcome!’*)

Daniel separates the syllables, emphasising each.

4.4 Aside 2: A need for autonomous team production that allows for consciousness and responsibility in the language learning process

This is an episode of planning a restaurant scene in exquisite French and in complete control of the appropriate level of French that could not be bettered by a knowledgeable teacher in the class. It demonstrates a subtle understanding of tone and register as is revealed by Daniel’s choice of ‘s’il te plaît’ over the formal ‘s’il vous plaît’, thereby drawing attention to his close relationship to Fabienne. Daniel and Fabienne succeed in establishing a succession of dialogues that reveals consciousness and responsibility in the selection of the appropriate chunks of French language.

In the transcription of the feedback session, Fabienne mentions explicitly in Luxembourgish that – after the assistant teacher and I had left the room and in
an obvious difference from teacher-led discussions in the classroom – she progressed to using longer phrases:

F: Ech hu méi lang emmer geschwat. (I have talked longer all the time.)

Here, Fabienne refers to the need for embedding the learning of French in longer stretches of discourse than those prevailing in typical classroom discourse where teachers’ initiatives engender pupils’ responses followed by teachers’ evaluation (Cazden 1988, 30) and where pupils are not supposed to play a role in regulating the talk and the learning sequence of their peers (Philips 1983, 76). This expansion of discourse is propelled by the replay of the utterances through iTEO.

Autonomous, responsible and conscious work in the team also allows for interspersing serious discourse with humour and laughter, a mixture that helps to establish a shared sense of community with partners (Cazden 1988, 168). Fabienne refers to this point during the feedback session when she mentions that the expanded discourse was entertaining. Laughter then seems to facilitate and regulate the social bonds of the iTEO team. Fabienne enjoys the work in this group with iTEO and her joy reinforces the conditions for successful cooperation and communication (Lusetti 2004). Fabienne, after some hesitation, confirms that she is eager to manipulate the iPad because she thinks it is cool:

F: Jo, mir ass et egal, mé ech awer léiwer um iPad drecken, well ehm ech fannen iPaden cool. (Yes, it’s all the same to me, but I prefer to push the button on the iPad, because ehm I think iPads are cool.)

4.5 Aside 3: Controlling and entering the field of meta-linguistic awareness with iTEO

Fabienne’s desire to manipulate the iPad and iTEO supports her agency and activity in language learning. In this way, Fabienne holds some control of the language production in the entire process despite reliance on Daniel’s competencies in oral French. At times she can just be a silent participant in the construction of French beyond her competencies and beyond her zone of proximal development (Vygotsky 1986) as she might need to build up confidence before entering the language production process (Dulay/Burt/Krashen 1982; Ellis 1992). The interruptions due to the manipulation of the electronic tool may constitute welcome opportunities to reformulate or to try to improve her performance (Poehner 2008, 46). By manipulating the iPad, Fabienne can stay a legitimately if peripherally participating actor in the team (Lave/Wenger 1991). Fabienne’s control of the recording process and of the turn of her interlocutor in the dialogue is a vicarious ‘performance before competence’ (Cazden 1997) that enables her to
develop her French while participating in joint relational language activities. Fabienne’s desire to control the activity may be indicative of her need to establish herself as a role player in the activity through enrolling the electronic tool as a partner or ally in order to fulfil her communicative intentions and to thrive in the dialogue with her partner.

4.6 Aside 4: Differentiated meta-linguistic awareness: from oracy to literacy

As Daniel is not bothered with controlling the tool, I launch a discussion with him about his coolness as he continues to boast of his command of the French language:

Self: Well hee (i.e. Daniel) seet jo emmer hee (i.e. Daniel) wäer esou gutt am Franséischen an hee (i.e. Daniel) wéisst schon alles.  
(As he (i.e. Daniel) is continuously telling us that he (i.e. Daniel) does well in French and that he (i.e. Daniel) knows everything.)
Immediately Daniel tells me off by revealing a differentiated meta-linguistic awareness:
D: Net emmer.  
(Self: Dach, du hues elo virdru gesot do, ‘t wär dir jo egal. (Sure, you told us before that you didn’t bother.)
D: Net alles.  
(Self: Du kanns jo scho gutt. (You know everything so well.)
D: Jo.  
(Self: Wat jo stemmt, ‘t ass jo richteg. (That’s correct, that’s allright.)
D: Jo, ech kann net alles schreiwen net. (Yes, I can’t write everything, no.)  
(Self: Nee, neemee du kanns maja ganz gutt schwätzen. (No, no, but you can oh well talk very well.)
D: Sou schwätzen geet alles. (With talking everything works well.)

Daniel is aware of the differing linguistic and especially normative demands of the school context in the oracy-literacy continuum. Command of oral French is no guarantee of good writing. Meta-linguistic awareness is not a privilege of the expert in the iTEO team, but is pervasive in the discourse of both children in the feedback session and touches a variety of linguistic features.

4.7 Aside 5: Awareness of the importance of prosody

As it comes to the point where Fabienne asks ‘Tu veux de miel? (Do you want some honey?)’ and where Daniel replies with ‘Oui, je veux bien du miel. (Yes, I would love to have some honey.)’, Fabienne, who tells me that ‘miel’ means ‘honey’, immediately comments with great astuteness about the prosody:
Fabienne identifies the speed of speech and prosodic features as characteristics of fluency. This is all the more surprising as classroom teaching rarely focuses on prosodic features of the target language but rather privileges vocabulary, a fact that is also revealed by the dearth of scientific studies on this topic in additional language learning. Prosody, a feature identified as essential to authentic French by Fabienne, links the palpable-expressive and emotional-volitional aspects of language use whose full adequacy remains unattainable, but that allow for temporary solutions in language production to be achieved (Bakhtin 1993, 31).

4.8 Aside 6: Voice and confidence

The Bakhtinian concept of voice (Bakhtin 1981) encapsulates emotions, volitions, feelings, thoughts, values and identities mobilised in dialogue by the storying iTEO team. Fabienne and Daniel express their own voice, that is they say what they want to say in a difference to what they might be asked to say by a teacher. Consequently, their dialogues tend towards dynamism, heterogeneity, tension and even conflict (Wertsch 1991, 115). It is through this intricate interplay of dialogical voices that language learning emerges (Gundlach 1982) and can be achieved. Understanding and learning live from the struggle among competing voices (Nystrand 1997, 8). In this tension-filled field of co-construction in the iTEO team the human partners stay confident about the outcomes of the learning process. This is made clear through Daniel’s comments during the feedback session while Fabienne’s voice is replayed, materialised and objectified by iTEO on the videotaped recording session:

iTEO (F): De miel. (The honey.)
D: ‘t ass ‘le miel’. (It is ‘le miel.’)
Self: Mee, firwat sees du him dat? (But, why are you telling her this?)
D: Fir hatt dat weess herno. (For her to know afterwards.)
Self: Ah.
D: Wann dono. Da kann hat. Dono weess et. (If afterwards. Then she can say. Afterwards she knows it.)

The wrong expression as replayed through iTEO does not deter Daniel from remaining confident of the positive outcome to the language learning process, even as I challenge him by expressing some doubts later in the transcription. With the help of iTEO, the utterance is once again up for close inspection and a better outcome may be targeted.
In the original videotaped ‘Au restaurant’ session, Daniel and Fabienne are planning the next utterance:

D: Ok, da muss ech soen. (kleng Paus) ‘Je peux avoir du pain s’il te plaît?’ Da soos de ‘Oui, voilà le pain.’ (Ok, then I must say. (short pause) ‘Je peux avoir du pain s’il te plaît?’ Then you say ‘Oui, voilà le pain’.)
F: Ok.
F: De ri
D: Probéier neg Kéier. De rien. (Have another try. De rien.)
F: De ri
D: De ri-en.
F: De ri
F. en
D: Prob… an elo de rien. Probéier eng Kéier de rien ze soen. (Tr… and now de rien. Try for once to say de rien.)
F: De ri
D: en, de ri-en.
F: De ri

This episode is remarkable as it shows how the context of ‘storying’ with iTEO leads to the willingness if not stubbornness in wanting to produce an appropriate and authentic locution.

4.9 Aside 7: The situated performance

When I asked Daniel and Fabienne in the feedback session to provide an explanation of the expression ‘de rien’, it became obvious to me how fallacious such demands are as they isolate meaning from the stream of situated performance:

Self: Wat heescht dat dann, ‘de rien’? (What’s the meaning of ‘de rien’?)
F: Wannechgliwt? (Please?)
D: Nee. Ehm (3 Sec Paus) Merci sou. (No. Ehm (3 sec pause) Thank you so.)
Self: Wann ech soen ‘Voilà le pain’ an ech soen ‘de rien’, wat heescht dat? (If I say ‘Voilà le pain’ and I say ‘de rien’, what does that mean?)
D: (overlapping with my question) Da sees ‘merci’. Ehm. Et ass näischt. (Then you say ‘merci’. Ehm. You’re welcome.)
F: (overlapping) Ah, färdeg. (Ah, that’s it.)
D: (overlapping) ‘t ass näischt. (You’re welcome.)
Self: (overlapping) ‘t ass näischt. ‘t ass gär geschitt, jo. (You’re welcome. I am pleased, yes.)
D: (overlapping) Geschitt. (Pleased.)
In this excerpt, we see that vagueness, ambiguity, incompleteness and hence versatility, flexibility and negotiability (Rommetveit 1985, 183) constitute the backbone of authentic ‘storying’ activities and of authentic language learning in general.

The frenzied overlapping of contributions in the sequence above shows impressively the emotional involvement of the whole iTEO team (including the interviewer who could not escape from it) in the meaning and language making process. Here is a document of a lived situation (Greene 1998, 6) where locutions thrive so that they can be approximately and tentatively approached, explored and explained. The emotional factor as signalled in the overlapping contributions above is an effective factor in language learning as emotions “(...) guide attention, they make memory possible, and give an affective color to what is remembered” (Warburton 1988, 196).

Meta-linguistic awareness once again shows through in the pupils’ explanations that combine emotion and cognition and that seek to adapt to the sociocultural context of concrete oral French.

4.10 Work on the components in the context of ‘storying’

The pupils’ practice of learning in the transcribed episode above focuses on particles or syllables (de-ri-en) of the locution ‘de rien’ and exemplifies a practice on components of an utterance in the context of the full performance of ‘storying’ (Resnick 1985, 179). Five times Fabienne sets out to repeat Daniel’s suggestion of ‘de rien’ but each time she manages just ‘de ri’. Each repetition or fragment of imitation shows the high level of linguistic awareness that is guiding the dialogic process of ‘storying’ and of language learning. Daniel does not tire in encouraging his partner to have another go. He is desperately looking for alternative methods to help Fabienne with the completion of the fragmented expression. Daniel is splitting the word ‘rien’ into its syllabic components ‘ri’ and ‘en’ in order to help Fabienne imitate. Neither of them has yet discovered the possibility of recording the two fragments independently with iTEO and then replaying them in sequence. Children have surprised the developers of TEO by finding this solution independently. Nevertheless Daniel is in search for other actors in the iTEO setting that could help to propel Fabienne’s language learning. He stands up, approaches the blackboard and grabs a piece of white chalk for writing ‘in’, then ‘In’:

D: Nee, den ‘in’ hate mer geléeiert, mat i-n, weess de nach? (schreiwt ‘in’ un d’Tafel) Daat. (No, we have already learnt the ‘in’, with i-n, do you remember? (writes ‘in’ on the board) That.)

Then, Daniel goes on to write ‘In’ onto the board as we see in picture 5.

D: I-n

D: Brauchs de de Mikro? (Do you need the microphone?)

F: Nee. (No.)
Propelling Fabienne towards performance and understanding mobilises all of the formal and informal knowledge and resources Daniel can get hold of. We see in our example how Luxembourgish school discourses and school norms of language learning appropriate and transform regular activities (Hedegaard/Daniels 2011, 7) such as offering and exchanging goods at the restaurant.

It is significant that the oral activity orchestrated by Daniel is shot through with elements from writing instruction in French. The norms of written French influence even the first steps of learning oral French that eventually becomes a copy of normative written French taught in the classroom. Authentic oral French external to the school setting as practiced by the two pupils in our example comes to be institutionally re-contextualised (Bernstein 2000) through the official emphasis on the importance of written French as the cornerstone of promotion throughout the Luxembourgish school system. In Daniel’s intervention, the institutional demands and impacts (i.e. the importance of high norms of written French, a monological view on language) stand between the societal affordances (i.e. the authentic social events affording the possibilities for ‘storying’) and the persons (i.e. the pupils with their emotional and cognitive needs and affordances and their dialogical orientations) (Hedegaard 1999).

Daniel explicitly refers to the common funds of knowledge available through formal classroom teaching where the pupils have learnt to write words containing the syllable ‘in’ that in the beginning of the words sounds exactly the same as the particle ‘en’ in the end of ‘rien’. He places strong emphasis on this common memory by writing ‘In’ with a capital letter after the first ‘in’ as if he was underscoring his written mark. Daniel thus shows us that children focus on units of print when objectifying and materialising oral language. His familiarity with an alphabetic writing system in German and French has fostered his awareness of the segmental structure of language (Olson 1995).
4.11 Aside 8: The importance of the scriptural outline for meta-linguistic consciousness

Fabienne confirms the importance of the scriptural outline for meta-linguistic consciousness as well as for performing well in the Luxembourgish school system when I ask her about the inscription in the feedback session:

Self: An lo, firwat huet dat der da gehollef dat heen et un d’Tafel geschriwwen huet? (And now, why did it help you that he wrote it on the blackboard?)
F: Ma dann, da weess ech et. Da weess ech et méi genau. (Now, then I know it. Then I know it much more precisely.)

We see in our example that pupil’s productions can thrive on the evolution of language and language practices (Pietikäinen 2013, 81) within Luxembourg’s multilingual school settings. Such a dynamic view combines ‘language as system’ with ‘language as practice’ (Kelly-Holmes/Pietikäinen 2013, 223).

As his writing on the blackboard does not immediately produce the desired outcome, Daniel becomes aware of Fabienne’s faulty perception. He knows that Fabienne suffers from defective hearing as she is supposed to use a microphone with an amplifier during regular classroom activities. Daniel thus mobilises another prosthetic device for propelling the ‘storying’ process.

4.12 Aside 9: Materialising oral language

In the feedback session Daniel refers to the possibility for materialising oral language in the written mode on the blackboard. He is convinced that by reading ‘In’, Fabienne will be able to speak the required locution because his transcription will provide her with an anchor point. He consciously places his prop in the context of previous formal and common learning experiences in their French lessons. This episode highlights the role of the iTEO team and of other objects (iTEO, blackboard, chalk, literacy, microphone) as significant participants in the meaning making and knowledge building process. The objects’ affordances remind us not to “over-exaggerate the importance of conversation in spatial performance of humans and nonhumans” as “conversation is but one component among a heterogeneity of components” (Sørensen 2009, 157). Intelligent action often arises as a product of multiple interactions involving diverse components of the environment (Clark 1997).

4.13 Expanding the resources for completing ‘de rien’

Fabienne being close to her partner in the small room declines Daniel’s offer for using the microphone. Daniel returns to his chair while continuing with his prompts:
D: Lo probéiere mer einfach ‘de rien’ ze soen. *(Now we try to say simply ‘de rien’).*
F: De ri
D: De rien
F: De ri
D: De ri-en. Un (weist 1 mam Fanger). Probéier eng Kéier ‘un’ ze soen. *(De ri-en. Un (shows 1 with a finger). Just try to say ‘un’ for once.)*
F: Un
D: De (kleng Paus) de. *(De (short pause) de.)*
F: De
d: Ri
F: Ri
d: En
F: De rien (fléissant). *(De rien (fluently).)*
D: Jo. Probéier nach eng Kéier nach eng. (kleng Paus) Probéier ee mol nach eng Kéier ‘de rien’ ze soen. *(Yes. Try once again once. (short pause) Try once once again to say ‘de rien’)*
F: De rien. *(De rien.)*
D: Gutt. *(Good.)*

Daniel makes it clear that language production is a dialogical team effort as he boldly declares that we will have a go at ‘de rien’, a team endeavour probably guaranteeing the success of the recording. In the making of ‘de rien’ he finally resorts to a new strategy for engaging Fabienne’s attention and for expanding her resources for completing ‘de rien’. After references to literacy, i.e. written French, from the learning experiences in the institutional context, he now refers to numeracy by mentioning the number 1 in oral French and by gesturing with one finger as a materialisation of the oral ‘un’.

Daniel thus establishes a functional interrelationship between oral literacy, written literacy and numeracy for helping Fabienne to pronounce the syllable ‘en’. With a stock of multimodal resources from school based and probably some home based learning of French Daniel demolishes the boundaries between the formal school discourse on the teaching/learning of languages and the dialogical practice of (trans)languaging of the iTEO team.

4.14 Aside 10: The importance of repetition

The repetition of particles and syllables plays an enormous role in this sequence and may through its slowness be opposed to the fastness in discourse identified as fluent French. In the feedback session I asked the children about the slowness induced by the need to concentrate on the particles of the word ‘rien’:

Self: Kuck, do huet en awer ganz lues mat der geschwat. Firwat hues de dat da gemaach?
*(Look, there he did speak very slowly to you, though. Why did you that at that time?)*
D: Ma well, da, da wann ee seet puer mol seet da weess een besser. A méi lues. *(Well, if you say a few times say you know it better. And slower.)*
Self: Wanns de wat sees? Wanns de. *(If you say exactly what? If you.)*
iTeo as a Tool-and-Result in dialogical multilingual language learning

Daniel does not judge the repetitions tedious but sees them as propelling the actual dialogue by allowing for practice in oral fluency. Through repetition the pupils remain engaged in a continuous auto-evaluation of their utterances. They stay involved in an activity where “repetition which contains within itself elements of change and development, irrespective of their minuteness, is formative activity” (Schaefer-Simmern 1948, 40).

4.15 Manipulating iTEO

After an impressive run of five attempts Fabienne has finally and fluently pronounced ‘de rien’, a performance that is not particularly cheered by Daniel. While acknowledging Fabienne’s contribution he asks for a verification of her competence, a strategy that he may have borrowed from official school discourse. Fabienne concentrates and repeats her flawless performance. The manipulation by the pupils of the replay function of iTEO could be an indicator of their meta-linguistic awareness in the dialogue under review:

F: De rien (fléissend). (De rien (fluently).)
D: Jo. Probéier nach eng Kéier nach eng. (klen Paus) Probéier ee mol nach eng Kéier ‘de rien’ ze soen. (Yes. Try once again once. (short pause) Try once again to say ‘de rien’.)

During D’s instruction F is pressing the recording button as she now is confident enough to proceed to the finalisation of the locution ‘De rien’.

F: De rien. (De rien.)
D: Gutt. (Good.)
F presses the button for stopping the recording and D immediately jumps in to prevent iTEO from automatically replaying F’s utterance ‘De rien’ and prefers to press the ‘+’ button for adding a new recording to the story ‘Au restaurant’.

When finishing with the series of repetitions Fabienne confidently activates the recording function of iTEO and presses the button to stop the recording process. After the lengthy elaboration of the utterance ‘de rien’ Daniel is obviously satisfied with Fabienne’s production and thinks that the team should carry on
with the dialogue in the restaurant. He intentionally cuts off the automatic replay of iTEO by pressing the button for a new recording. He records:

D: Je veux avoir du pain s’il te plaît, Fabienne? (I would like to have some bread please, Fabienne?)

Once again Daniel has transformed his utterance with subtle nuances taken from authentic and appropriated oral French. Maybe this slight change from ‘peux’ to ‘veux’ is enough to confuse Fabienne as she is not ready to carry on with her part of the intended discourse. At the same time Daniel is very sensitive to the distress of his partner and resorts to a practice that I have documented elsewhere in the work with TEO (Gretsch 2010), that is, he sub-vocally scaffolds the required utterance with and for Fabienne and accompanies her efforts with head movements and nodding. In a rising tone, Fabienne haltingly takes up this prompt:

F: Oui. (Yes.)
She signals in her tone that she wants to take it further, but Daniel jumps in:

D: Merci. (flüstert) De rien. (Merci. (whispers) De rien.)
F: Tou-v (onsécher) Tou-re-vi (kloeng Paus) te (onsécher) (Tou-v (haltingly) Tou-re-vi (short pause) te (haltingly))
D: (flüstert) De rien. (Fabienne weess net richteg wéi.) ((whispers) De rien. (Fabienne does not seem to know what to do.))
D: De ri-en.
F: De ri-en.

Daniel now ends the recording triggering the automatic replay of the entire preceding dialogue. At the beginning, the children listen intently to the iTEO replay, but after Daniel’s ‘Merci’ they turn to other items on the table with Daniel choosing a piece of butter and Fabienne telling him that she will record a new phrase with the word ‘beurre’.

4.16 Dialogical performance

Basically, the iTEO team effort results in a team performance of the intended French locution ‘de rien’. This is due to Daniel’s sub-vocalising leading up to his co-vocalising with Fabienne in the form of whispering. We are at the heart of what Bakhtin (1986, 78, 89) calls ‘dialogism’ or ‘multi-voicedness’. The production of utterances with iTEO involves a speaker’s appropriating, invoking, or ventriloquating through the voices of others, thereby entering into a dialogic encounter with them (Wertsch/Hagstrom et al 1995).

Daniel’s and Fabienne’s co-vocalising and sub-vocalising show that language exists in other people’s mouths, in other people’s contexts and serves other people’s intentions. We must take it from there and make it serve our personal intentions through populating it with our timbres and overtones,
because language is not a neutral medium that passes easily into the private property of the speaker’s intentions (Bakhtin 1981a). Akin to Freinet’s ‘tâtonnement experimental’ (Freinet 1994) the children feel their way into and within the language production process. The complexity of the task has Fabienne forget the locution she correctly produced some time ago so that she must resort to the collaborative performing with her partner Daniel. This dialogical encounter will probably be internalised by Fabienne for next opportunities, as the higher functions of thought at first appear in the collective life of children in the form of argumentation and only then develop into reflection for the individual child (Vygotsky 1981). Sub-vocalising and co-vocalising in the iTEO team is supplemented by argumentation based on a high level of meta-linguistic awareness. Previous utterances may even be forgotten in the progressively more complicated and nuanced process of ‘storying’, but the process of language development remains in full swing for each partner as can be seen in the multiple transformations of the pupils’ utterances.

To summarise, there are several levels of mediation through which the locution originally proposed by Daniel comes to be finally thought of and performed by Fabienne: mediation through Daniel and Fabienne, mediation through the iTEO tool, mediation through language, and mediation through gestures and gazes that I have not analysed in this paper. The reader can glimpse these gestures in pictures 3 and 4.

As such, Fabienne’s individual performance is the result of a co-authoring of all the actors in the team. The repetitive and imitative performance of utterances in the iTEO team leads to the learning and to the mastery of the intended locution ‘de rien’ by Fabienne.

4.17 Aside 11: The resilience of the learning episode

The resilience of this learning episode is evident when I discuss the role of the seemingly endless repetition sequences with Fabienne several weeks after the recording session in the feedback session:

Self: An lo kanns de ‘de rien’ soen? (And now you can say ‘de rien’?)
and Fabienne immediately replies in a fluent and confident way:
F: Jo, de rien. (Yes, de rien.)

4.18 Internalisation, externalisation and transformation of utterances

The sequence of the recordings leading ultimately to Fabienne’s mastery of ‘de rien’ in the feedback session and beyond is an illustration of the mechanisms of internalisation and externalisation in the construction process of higher psychological functions, in our case the competences for producing the French language. Vygotsky 1978 maintains that children grow into the intellectual life
of those around them through internalising the processes occurring in the course of the interaction with the more competent member of the culture. It is the socially meaningful activity of ‘storying’ that generates human consciousness (Kozulin 1998, 8). In the iTEO team the dialogical processes of co-vocalisation and sub-vocalisation and the references to existing multimodal literacy resources come to be internalised by the human participants. The pupils internalise what they say and do and how they say and do it in their dialogical encounter (Haught/McCafferty 2008, 144). The original model as given by Daniel is transformed in the process and there is then room for innovation and accentuation in individual tones on the basis of the participants’ own characteristics, experiences, existing knowledge and existing limitations.

4.19 Learning language dialogically with the iTEO tool-and-result

With iTEO, the transformability of the utterance is brought to the consciousness of the human actors because, after automatic or deliberate replay, utterances can be listened to, deleted or changed at will. Such transformative appropriation and internalisation is a characteristic of Vygotsky’s notion of imitation as a very important factor in learner’s performances (Lantolf/Poehner 2008, 21). In our case, the participants’ argumentations about the contents and processes in their common Luxembourgish language lead to the performance and ultimately mastery in the French target language. In the learning sequences discussed above the pupils develop learning strategies, metacognitive functions and conceptual literacy (Kozulin 1998, 129). Fabienne’s fluent and bold statement of ‘de rien’ weeks after the production process is an instance of externalisation of the appropriated linguistic knowledge. ‘De rien’ has entered Fabienne’s consciousness through the responsive (if tension-filled) dialogic relationship (Dyson 1997, 218) within the iTEO team as illustrated in the transcription. The pupils’ comprehension and knowledge of the target language is deepened by being grounded and interpreted in the personal and collective narratives from their own experience and history (Cummins 1994, 54). I consider ‘storying’ as Wittgenstein’s common behaviour of mankind and hence as the systems of reference by means of which we come to interpret an unknown language (Wittgenstein 1953, § 206). School ‘activities’ often lack the kick of unexpected and unpremeditated sequences of events typical in everyday activities (Lave 1996, 24, 29). Re-negotiation and re-interpretation are ubiquitous in everyday life but all too often suspiciously absent in the definition and design of teaching ‘activities’ led by teachers. School lessons that break down the teaching and learning event into small controllable units do often not allow for pupils to place themselves in complex event structures and situations as those in the transcription above.

The turn to pupils’ autonomous dialogical performance in the iTEO team creates stages for development and overcomes the paradigmatic dualism of
cognition and emotion (Holzman 2009). The tool-and-result iTEO allows the children to build their own mediation means and avoids the provision with pre-packaged materials as tools for result so popular in the educational arena, foremost with educational soft- and hardware (Newman/Holzman 1993; Lantolf/Poehner 2008, 24). What is needed is a context of productive learning characterised as a “larger network of relationships that would give greater expression to our needs for intimacy, diversity, usefulness, and belongingness” (Sarason 1974, 3). The iTEO tool-and-result creates a setting for interaction and ‘storying’ within the institutional school setting (Cazden 1992, 222). Fabienne’s assisted contributions within the iTEO team are not just performances without competences, but performances before competences. Her assisted performances while (trans)languaging contribute enormously to the subsequent development of her language competences in oral French (Cazden 1997, 309). Fabienne is able to produce ‘de rien’ on the background of dialogical (trans)languaging through intensive repetition and imitation of its particles and through the connecting of utterances. When she is tentatively coming to a halt she remains unwavering in her attempts because she is supported by Daniel’s co- and sub-vocalising. Even as Fabienne comes out rather hesitantly in the recording session, she finally establishes and asserts her competence for producing ‘de rien’ weeks later during the feedback session.

The language production in the iTEO team is a structure for (trans)languaging and for dialogue where differing values, attitudes, intentions and motivations interpenetrate. The iTEO tool-and-result brings attention to the materiality and multiplicity of languages through its potential for dialogical (trans)languaging in a set of related performances (Mulcahy 2012, 83). The (trans)languaging of Fabienne and Daniel is an illustration of Bakhtin’s insistence that prior to the moment of its appropriation, “(…) the word does not exist in a neutral and impersonal language (it is not, after all, out of a dictionary that the speaker gets his words!), but rather it exists in other people’s mouths, in other people’s contexts, serving other people’s intentions: it is from there that one must take the word, and make it one’s own” (Bakhtin 1981, 293, 294). I think that Bakhtin’s words aptly describe the process leading up to the competent use of the locution ‘de rien’ by Fabienne weeks after engaging in the joint performance with Daniel in the institutional school setting.

6 Conclusion

In a Bakhtinian view the pupils in our example relate to the languages that have to be used and learnt in the institutional setting in a dialogue, “as practices that are simultaneously structured and structuring” (Gardiner/Bell 1998, 6). Using the iTEO tool-and-result signifies that we accept languages and cultures as unfinished tasks or projects forever submitted to the particular, unfinalisable
and unrepeatabble complexities of life (Saul Morson/Emerson 1990). The work with iTEO provides a fertile ground for the diverse and differentiated language resources of all the children in Luxembourg’s classrooms in that it allows for intense (trans)languaging. Such multilingual and dialogical practices in schools call into question the validity of boundaries around languages. When languages interanimate it might be judicious to question the notion of code-switching referring to the interplay of hermetically sealed language units. García (2009) prefers the notion of translanguaging for describing the process where languages leak into one another as during ‘storying’ in the iTEO team. Nevertheless, the first language is of foremost importance in meta-reflection as shown in the transcriptions (Negueruela 2008, 225) and in dialogical and responsive agency (Shotter/Billig 1998, 25). The iTEO tool-and-result promotes the awareness of the performers that they may be more successful language users, especially in a another target language, if they use all available resources in order to create meaning, despite of limited or insufficient linguistic resources of their own (Coughlan/Duff 1994, 190). Planning appropriate locutions and storylines, recruiting the necessary resources for recording the expressions, recording and evaluating the outcome after the automatic iTEO replay, deciding to intentionally replay an utterance or a sequence of utterances, choosing to keep the recording or to delete it are all moves leading to a heightened awareness of the language production and of the resulting language knowledge (Poehner 2008, 48). The distance created through the neutral iTEO replay adds to the possibilities for meta-linguistic insights and offers supplementary options or choices (van Lier 2008, 182), even later in life, as mentioned by Fabienne in the feedback session.

The iTEO tool-and-result also helps the learner to dissipate tensions and negative emotions by allowing for the mobilisation of multiple resources and actors. Dynamic situations may entail frustrations, doubts and hesitations (Johnson 2007, 53) because they constantly challenge us with the questions of ‘what to do’, ‘why to do’ and ‘how to do’ pertaining to our objectives in life, in learning and in teaching. Ames (1960, 223) points out the benefits of frustrations as they represent true opportunities for improvement. Some parts from the transcriptions reveal such opportunities for learning and improvement originating in frustration, doubts and hesitations. Fabienne and Daniel have been able to propel their own language learning throughout their work in the face of difficulties and frustrations by having another attempt at the matter. Besides iTEO the psychological tool of ‘storying’ moves people on through the bonding it produces. ‘Storying’ is the glue that interconnects people by creating webs of significance.

Even within the formal and rather monological institutional school setting teachers are free to organise a pedagogical environment where pupils can work and perform autonomously with iTEO. Pupils use a cultural tool like the iPad and the apps that go with it intuitively, even in preschool settings. Technological
tools like iTEO play active roles in the network of human and nonhuman actors performing language learning where agency comes to be shared also by virtue of the automatic replay of the pupils’ utterances. As with the original TEO tool, pupils will certainly integrate and discover functions of the new iTEO tool that had not been anticipated by its developers. Technological tools have the potential for shaping spatial formations that might interfere with the existing spaces, especially in school settings (Sørensen 2009, 188) where such tools are too often seen as interfering with ‘real’ human activities and objectives that are to be enacted through the individual learner’s cognitive resources. Loss of human control is feared as the electronic and machine metaphor appeals to “(…) persistent fears of invasion, possession and authoritarian control” (Sanal 2008, 152). This is why school settings often do not attend to how electronic tools similarly to other objects as “condensations of one or another culture” (Zinchenko 1995, 50) change what we do and how we think (Turkle 2007, 2008). iTEO automatically replays the human voices and utterances and thus becomes a partner and potential ally in the dialogues within the iTEO team. We should then study how iTEO is acting on human activities, is amplifying them and occasionally substituting for them (Hamilton 2012, 42).

In a Vygotskian sense, the iTEO tool-and-result privileges dynamic, relational, instrumental and dialogical language and meaning making and the completion of thought in the word (Holzman 1997, 66). The tool-and-result metaphor means that something that has to be learned in the end must be entirely present from the very beginning of the learning process, as a sort of constraint enabling the development of the to-be-acquired new system of mediation.

The (trans)languaging and the meta-linguistic awareness which are to the fore in the iTEO setting can sustain the learners’ act of speaking in French before the child can accomplish this activity for him/herself (Cole/Engeström 1993). In the feedback session Fabienne refers to ‘storying’ as a core element in the learning of the French target language. She imagines herself in a common situation in Luxembourg, where her mother, her father and her brother are sitting at a table and where she learns together with her brother how to order a meal in a restaurant in French. ‘Storying’ with iTEO is related to the concept of prolepsis in learning experiences which is “a form of looking ahead, of assuming something to be the case before it has been encountered, a foreshadowing in some sense” (Van Lier 2004, 152). The completion of utterances is facilitated in dialogical language learning where a proleptic approach by caregivers or peers attributes intent to the endeavours of novices (Kozulin 1990; Van Lier 1996).

Sharing the dialogical agency in ‘storying’ with the iTEO tool-and-result enables pupils to take advantage of their multiple languages and diverse personalities and to engage in meaningful language production and learning. Teachers can create a further need for ‘storying’ by providing an audience for the recorded stories and by informing the pupils what the stories will be used
for. An abstract concept like ‘storying’ must be made explicit to pupils before they engage in the concrete work with iTEO (Negueruela 2008, 222). They will certainly be able to engage with the unpredictability of educational processes within the iTEO setting and take advantage of the productive openings created in contradictions (Fenwick/Edwards et al 2011, 16). Through recording with iTEO pupils can gain insight into the very nature of sign/symbol relationships (Haught/McCafferty 2008, 145) in both languages, French and Luxembourgish in our example, and in the written and oral mode, as shown in the transcriptions where Daniel mobilises many forms of symbolic interaction while (trans)languaging with Fabienne.

The implementation of the iTEO tool-and-result offers teachers the possibility to use the differences of their pupils and their different ways of enacting things (Bingham/Hinchcliffe 2007, 2) in the domain of dialogical language learning. In the highly differentiated work of the iTEO team, meaningful language learning is “work within and upon difference, to make differences” (Law 2008, 637). As we have seen with ‘de rien’, language production with the iTEO tool-and-result respects the versatility of the meaning of each word and of each locution. Each member of the iTEO team does not “(…) apprehend the word as a neutral element of the language system, free from intentions and untenanted by the voices of its previous users. Instead, he receives the word from another voice, a word full of that other voice. The word enters his context from another context and is permeated with the intentions of other speakers” (Bakhtin 1971, 195). The dialogical agency in the iTEO team promotes (trans)languaging in the Luxembourgish school context, so that the quality of the whole dialogue permeates, affects, and controls every detail (Dewey 1930/1988, 247), as in the production of ‘de rien’. I propose that the competences for language learning of the iTEO team largely outperform those of the individual learner or of the solely human members of the same team. This may be due to the storying process within the iTEO team and with the iTEO tool-and-result that can move us:

- away from a situation where stories and dialogues in classrooms are used as tools to help children learn prespecified nuggets of knowledge and
- towards a situation where storying and dialogue are the main aims of education and of language learning and teaching (Wegerif 2008).

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