Learning by Teaching through Polylogues: Training Expert Communication in Information and Knowledge Societies Using *LdL (Lernen durch Lehren)*

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Abstract In our global information and knowledge societies, the individual is confronted with various communicative challenges whenever global problems are concerned. Not only is there a need for generalists who are able to quickly develop into specialists on a given subject, but also for specialists who, for successful knowledge transfer, are competent in communicating their specific knowledge both to other experts and to laypersons. In this context, the teaching concept *LdL (Lernen durch Lehren* – 'Learning by Teaching') can be regarded as one possible way of preparing students at schools or universities for the above-mentioned demands. The basic idea is that a learner or a small group of learners specializes on a certain topic and teaches the other members of the group in an interactive polylogic way. This concept is thus supposed to provide students with necessary communicative and other skills for tolerant and empathetic knowledge management and networking. The article gives an overview of the theoretical basis and the principles of *LdL* and, in a second step, illustrates its practical application in university classes. The effectiveness and efficiency of *LdL* for training expert-expert and expert-layperson communication are demonstrated for linguistics and literary studies using both quantitative and qualitative approaches. The article ends with recommendations for the organization of *LdL* lessons.

Keywords teaching expert-expert communication, teaching expert-layperson communication, didactic model, learning by teaching, *Lernen durch Lehren (LdL)*, interactive teaching method, teaching communicative skills

1 Introduction

In information and knowledge societies, people find themselves in a constant struggle between generalist and specialist tasks. To understand complex and often global problems, we need rich cognitive, or mental, maps. To solve such problems requires teams to become specialist explorers of a certain field, and specialists of one field to communicate with those from other fields in order to assemble the various components of knowledge necessary for solutions for a certain problem. While information societies aim particularly at an improvement of interactions between humans and machines, the predominant challenge of knowledge-based societies seems to be the improvement of communication between humans and humans (cf. Händeler 2003: 242, Spiegel 2005: 11). And this goes beyond someone's command of specialized vocabularies. For roughly a decade, linguists have been trying to dedicate more in-depth research to the problem of expert-expert and expert-layperson communication, evidence of which is the series *Transferwissenschaften*, founded by Gerd Antos and Sigurd Wichter, which currently consists of five volumes (e.g. Wichter/Antos 2001). Research in knowledge transfer and the relevant communicative skills should not only play a role in descriptions of a status-quo and in theoretical discussions, but also lead to empirically tested suggestions as to how such skills can be acquired. This latter aspect, however, has played but a minor role when compared to the former.

In this article, we would like to present *LdL* (German *Lernen durch Lehren* – 'Learning by Teaching') as a didactic model that enables learners to acquire and improve skills in both expert-expert communication and expert-layperson communication, not through monologues or dialogues, but through a certain type of polylogues. We use the term *polylogue* very consciously to make a clear distinction from *dialogue* and will illustrate this later. We will delineate the theoretical background of *LdL*, present and illustrate the model itself, expand on its effectiveness and efficiency by using both qualitative and quantitative methods, and, finally, give a few recommendations and present techniques for the organization of classes according to LdL. The examples that we give are taken from the fields of linguistics as well as literary and cultural studies; however, the lexical, conversational and cultural issues raised also apply to other disciplines, such as teaching a foreign language for special purposes.

2 *LdL* in theory

LdL started out as a technique invented by Jean-Pol Martin in the early 1980's. Originally, it was developed for teaching foreign languages in schools, as a reaction to the abandonment of grammar after the communicative turn in foreign language teaching on the one hand and the absence of communicative competence with behavioristic methods on the other. The methodological core idea (cf., e.g., Martin 1985) is to have a pair or group of students instruct their classmates on the vast majority of topics (selected by the teacher or by the students themselves), but in a way that highly activates the classmates' participation and communication.

After his initial success, Martin further elaborated his technique into an overall model, or "hyper-method" (cf., e.g., Martin 1994, Martin 2002), and *LdL* was then also applied in language courses at university level (cf. Oebel 2005, Pfeiffer/Rusam 1992, Skinner 1994); Martin made his research available to the general public via a website (http://www.ldl.de). Since the late 1990's, *LdL* has been further elaborated, refined and used in linguistics classes at various universities, from groups of 6 to groups of 65, by Joachim Grzega (cf., e.g., Grzega 2003, 2005a, 2005b; Grzega/Schöner 2008). Thus it could be shown that the model also works in classes where highly academic approaches were in the foreground. In 2008, Bea Klüsener started using *LdL* in classes on literary and cultural studies. Both authors can thus look back on several years of teaching experience with *LdL*. For a few years, *LdL* has also been tested at various German universities of applied sciences (cf., e.g., Grzega/Waldherr 2007).

In order to differentiate between technique and overall model, the latter may be termed *MetaLdL*. However, as of yet, *LdL* still seems preferred over *MetaLdL*, the term first being used in an article by Joachim Grzega and Marion Schöner (2008). A model or "hyper-method" must rest on a larger theoretical framework to answer the question of why it should be applied in study contexts.

2.1 The goal of studying: learning for life

The competences that we need to survive in our information or knowledge societies should be the goal or target competences of educational settings. Based on sociological, psychological, economic and anthropological research by, e.g., Bromme et al. (2001), Franck (1998), Händeler (2005), Rifkin (2004), Rosenberg (2003), Spiegel (2005), Von Krogh/Wicki (2002) and Walker (2006), we can summarize the target competences in the following five super-competences:

- rich cognitive maps, i.e., a broad general knowledge plus at least one field of specialization
- an interrogatory competence, or, in other words, an attitude of curiosity (This is a natural human attitude, but it is unfortunately often stifled by instructors who all too often adhere to a certain list of contents which, in their view, need to be "covered" by them in a certain amount of time.)
- a competence to "endure fuzziness" (*Unbestimmtheiten/Unschärfe aushalten* in Martin's terminology), or, in other words, unplanned and "unplannable" moments in life (This means that there is no one who structures life for someone in outside-classroom reality, nor is there anyone who monitors that the structure someone has planned is kept, and there is not always just one solution for a certain problem. This stands in contrast to the structured, linear way of covering topics provided by instructors in more traditional teaching settings.)
- a creative networking competence:
  (1) networking of information components (This means that you have to know how to find information pertinent to a certain problem, how to evaluate information bricks and how to connect them creatively to generate knowledge.)
  (2) networking of people (People must also be seen as a valuable source of information and knowledge.)
- an attractive communicative competence:
  (1) generally (In order to be able to tell people what you want to say, you first have to attract their attention, and then you need to be able to communicate in an atmosphere of empathy, tolerance and cooperation.)
  (2) horizontally, i.e. among experts from different countries (People need to have a cross- and intercultural competence in the lingua franca(s) and, ideally, in other languages as well.)
  (3) vertically, i.e. from expert to layperson and, as some say, also from layperson to expert

These declarative and procedural skills will allow people to turn into temporary specialists for a specific question within a brief amount of time.

2.2 The paths towards learning

If we want to provide our students with the necessary equipment for a successful life in information and knowledge societies, we first have to know what the paths towards learning look like according to studies from learning psychology, biology, education, and anthropology. Relevant studies by, e.g., Csikszentmihalyi (1990), Frankl (1946), Maslow (1954), Hermes (1980), Martin (1994), Hunfeld (2004), Lakoff/Johnson (1999), Ryan/Deci (2000), Spitzer (2002), and Teuchert-Noodt et al. (2003) depict a landscape of effective studying that includes the following five super-traits:

- the feeling of meaningful activity (i.e. the chance for self-fulfillment, the experience of so-called flow effects, and an affective attachment toward contents)
- an active exposure to the contents ("grasping" contents and their meaning)
- the presentation of contents in a familiar "language", through intelligible metaphors and analogies
- autonomy in content selection
- learning in a community

2.3 A vehicle for studying and learning: LdL

As already mentioned, *LdL* started out as a technique and evolved into an overall model, or "hyper-method". The methodological core idea still involves having students instruct a majority of topics (selected by the teacher or by the students themselves) to their classmates in an interactive way. The role of student-experts – in primary school classes they may be called "mini-teachers" – is often misunderstood as one of giving presentations. Therefore, it cannot be emphasized enough that *LdL* is not a concept where students predominantly hold monologues (which would be a "chalk and lecture" shifted from the teacher to the students), neither is it a concept where students predominantly conduct dialogues with the same students who participate anyway in a simple two-person question-answer procedure (*dia* – 'two'). Rather, the concept of student-experts is one of predominantly triggering and moderating polylogues, in other words: the network-like interaction of many persons (*poly* – 'many'):

(1) The students who have delved into a certain topic to become experts (student-experts) present a more or less complex, challenging and captivating question or problem to the class.
(2) Students work on the problem in pairs or small teams (maybe after a phase of individual reflection).
(3) After this phase, the student-experts open the plenary phase, in which they should make sure that students listen to each other with empathy and tolerance.
(4) Someone offers an answer or solution. For this answer/solution – this is important – the student should give a reason. The others are listening.
(5) The student-experts ask the others whether this solution is convincing.
(6) Others or the student-experts may say where and why a certain solution does not convince them or they may ask for clarification, e.g., for an illustrative example they can understand with their knowledge or for a reformulation or definition.
(7) Others offer, or the student-experts trigger, alternative solutions (this may include addressing of individual students directly).
(8) Finally, the student-experts sum up the discussion, give (if applicable) a possible master solution for the problem and highlight the core knowledge.

The idea is that students can better understand the form and function of something if they have truly "grasped" a problem. Thus, the students will also learn

- that the academic use of terms may differ from their use in everyday language;
- that academic definitions are not set in stone;
- that different scholars or schools may use one and the same term in different ways;
- that you can actually give a definition for a term yourself to establish a theory for understanding and solving a problem (cf. Klüsener/Grzega in print); and
- that talking about the use of words is essential among experts, but also between experts and laypersons in order to discover where the uses of words and the common knowledge of interlocutors intersect – Clark (1996) calls this the "common ground" – as well as differences in terminology and knowledge.

The learners' contributions in the form of polylogically developed theses and antitheses are supposed to lead to syntheses by way of which learners can improve their abilities to structure and link contents as well as expand their cognitive maps. In other words: they get rid of problems and obstacles themselves and turn what seemed chaotic at the beginning into comprehensible structures (in Martin's words: linearity *a posteriori*). Preferably, all learners should be active (at least for a large part of the course) in order to activate as many of their synapses as possible.

To enable the training of such polylogic skills, it is therefore not the student experts' task to simply present an issue in a linear manner (although attractive presentations may be useful for introductions or summaries), but to think about ways that motivate their classmates to find the solutions for questions and thus only gradually reach a structured knowledge at the end. Apart from improving the communicative skills, *LdL* learners are thus also given the chance to acquire and train

- the competence to seek and find information;
- creativity;
- self-confidence;
- thinking in complex ways;
- the ability to work in teams;
- explorative behavior;
- presentation skills;
- internet skills; and
- the ability to structure information and generate knowledge.

The role of the teacher involves preselecting or suggesting topics, giving guidelines to the student experts regarding didactic possibilities and the relevance of contents, assisting student experts during preparation and – if requested – in class, observing the learning process reflected by the actions and reactions in class, helping out when people do no longer communicate in an atmosphere of empathy, tolerance and cooperation, and finally guaranteeing that, despite potential problems, every learner will know at the end of the session what the main insights or conclusions were supposed to be. Teacher and students are conceived as partners, the hierarchy is flat; and there are evaluation phases in the middle of the course, way before the end of the academic year.

In a sense, if you compare teaching to a stage, then traditional settings give the role of the leading actor or actress to the instructor. In *LdL* classes, the student-experts are the leading actors. The other students are the audience and supporting actors at the same time, similar to the situation in an improvisational theater. The instructor is the director of the play, who helps the actors to create high-class performances. And the scenarios that are played, in other words, the contents that are explored, are taken from three sources:

- a fixed core knowledge (given by a fixed curriculum);
- key qualifications and methodological competence ("soft skills", including the skill to transform, or transfer, information into knowledge and the skill to present and ask for knowledge in a way that is also intelligible for a general public); and
- specialized topics chosen by the students themselves (learner autonomy!).

LdL is also seen as a self-renewable concept. For all adjustments of the *LdL* model to new educational and sociological findings since its introduction at university, the central questions have remained these: what competences are required from successful members of knowledge societies? what are the most efficient ways to enable the vast mass (and very consciously not just the elite) of learners to acquire these competences, or effects? This also means that *LdL* classes are, if need be, "updated" and refined.

3 *LdL* in practice

In the following section we present transcripts of two scenes to illustrate what *LdL* lessons look like (slips of the tongue, repairs and the like have been levelled out here). At various points we add comments in indented paragraphs to place certain procedures more clearly into the *LdL* framework. We have chosen one scene relevant for skills in expert-expert communication and one relevant for expert-layperson communication. The transcriptions that follow are based on video-recordings. *SE* stands for *Student-Expert*, *S* for *Student*, *P* for *Professor*.

3.1 Expert-expert communication

Scenario: This is a scene from the course "Introduction to Linguistics", which students attend in their first semester. What will be illustrated here with linguistic terminology should also work with other technical terminology, or specialized vocabulary, as first-semester students are mostly unfamiliar with linguistic terms, let alone English linguistic terms, beyond the terminology in school grammars. Many students come from schools where they have been given the feeling that queries disturb the schedule planned by the teacher. So they first have to get accustomed to *LdL*'s principle that queries are very welcome. In this scene, we are in Lesson 5, for which students have prepared a chapter on analysing sentences. The type of analysis is new to the students, but the state curriculum requires them to know this type of analysis. Thus, they have to learn to classify words and sentence elements according to the linguist Quirk (1985). In contrast to traditional school grammars, numerals in his terminology are regarded as determiners like *a* and *the*. This encompasses ordinal numerals such as *first* and *second*, although, in other systems, they may be seen as adjectives. Quirk even adds words that function like ordinal numerals to this group, e.g. the word *last*, which many would see as an adjective functioning as a pre-modifier for nouns. Two student-experts, who are average linguistics students in the sense that they are only averagely interested in linguistics, have clarified this in the analysis of a sentence they have created themselves: *The weather has been extremely hot since we returned from our holidays last week*. After the analysis (done first in pairs, then in the plenary where different students are picked out to analyse different parts), one student has the courage – and this alone is noteworthy – to add a comment.

S: *I have to go back again to the "last".*
SE1: *Yeah?*
S: *I understand it if it's in the sense of "being the last one to finish" or something like that, but I don't understand it in the sense of time.*
SE1: *… well, you can't count that too. You can count your holidays. It was the first, second, third and then the last one.*
S: *Ah yeah, that's right.*
SE2: *It's kind of a number.*

E: *Yeah, OK.*
SE1: *Kind of.*

Note that SE1 does not just say "I don't know, but that's what is in my master solution". Nor does she say "Well, that's the way Quirk treats numerals in his definition of determiner" – which would already have been acceptable. She actually tries to find a coherent logic in Quirk's technical terminology and illustrate this in a way that actually persuades S.

P: *... Nevertheless this is a very good argument for seeing this as a polysemous word. ... So according to your [= S's] view, in a dictionary you would have an entry "last-1" in the sense of "the last in a series of weeks" and an entry "last-2" in the sense of "preceding", but then it's an adjective and no longer a numeral. Yes, you're right. Very good.*

P's remark shows that S's remark has set him thinking. He joins the discussion as a more or less equal member of the learner group and thus tries to show that even in clearly defined terminologies, different solutions may be possible.

S: *So you could also say that it's a pre-modifier like if you give this explanation.*
P: *Yes.*
SE2: *But that wouldn't be in Quirk's sense.*
P: *Hm, I'm not too sure if it's really impossible to convince him. I think he might agree.*
SE2: *OK. So we can say both.*

Now SE2 shows that she has mastered Quirk's system and brings in the central rule again. She thus, more or less directly, questions P's answer. She shows that she has learned not to just accept everything that comes from a professor. P does not evaluate the different answers or give a master solution (which many students would first prefer over a "fuzzy" solution), but underlines the unclear status of the answer (the fuzziness that needs to be endured). All this happens in a tone and an atmosphere of mutual respect and friendliness.

This section illustrates that *LdL* is a model that enables students to practice

- applying a theoretical framework with its special terminology (here: a syntactic model) to concrete contexts (here: the analysis of sentences);
- arguing on how certain contexts can be classified in different ways within a given theoretical and terminological framework, in other words: students can get accustomed to the fact that there is not always just one solution;
- discussing whether there may be shortcomings in a theoretical and terminological framework when applied to concrete contexts; and
- working with the types of argumentation common in their discipline (which may differ from country to country).

As already noted, such competences are not only relevant in linguistics, but also in other fields, especially in highly dialogic domains such as law, macroeconomics, and science.

3.2 Expert-layperson communication

Scenario: This is a scene from the course "Introduction to the History of the English Language". Again, what will be shown for the transfer of linguistic knowledge and terminology in communication with non-experts will also work for other disciplines. SE is an average linguistics student in the sense that he is averagely interested in linguistics. At the beginning of the course, he did not understand why a future teacher should need historical linguistics and he chose P's course (from four possible courses) because P had announced that apart from the historical development of the most frequent grammatical patterns, they would deal with typical learner questions that can be convincingly answered only with a knowledge in historical linguistics. Such questions mostly concern the explanations given for Modern English irregularities. Like other students, SE, too, has to lead one section in class. He told P that he is quite afraid of this because he does not feel a strong affection for language history. P told him to choose a question that he himself had or still has on English irregularities. P also promised to support him, if need be, during the session. SE chose the question why modal auxiliaries like *can, may, shall, will* do not show the ending *-s* in the third person singular. He then tried to find out himself and to become an expert on the history of this group of words (which, for the most part, go back to a group of words historical linguists call *preterite present verbs*). After having his classmates discuss his question in pairs, he opens the plenary section. A girl, S1, raises her hand.

S1 [known for usually good contributions; this answer of hers, though, will be wrong]: *I think these words were past subjunctive forms in former times. The past subjunctive didn't have an "s" and …*
SE: *OK, which former times are you talking about right now? You can't just say "former times".*

Note that SE hereby shows that he has learned that people should express themselves clearly and precisely, i.e., in terms that have a rather precise or a commonly known definition.

S1: *Yeah. Old English, when they had a past subjunctive.*
SE: *Past subjunctive… What do you mean by that?*

SE is obviously not familiar with this technical term and asks for a definition to develop common ground. Note that SE does not simply say "No, that's wrong, this is not the solution I have found", but that he tries to understand S1 and tries to check whether her approach is good as well.

S1: *Well, we have the "subjonctive" in French and …*

In agreement with the *LdL* principle 'Work with familiar language and familiar analogies', S1 tries to work with a term from French grammar which she considers a presumably familiar term as many students had French as a second or third foreign language at school.

SE: *I don't speak French.*
S1: *… and we had it already in the English language.*
SE: *But what does Old English have to do with French?*

S1: *Nothing* [S1 makes a gesture indicating 'OK, forget this explanation']. *OK. So we had the past subjunctive forms of a word.*
SE: *Maybe you can give me an example, maybe then it becomes more obvious.*
S1: *No. Just let me--*
P: *Let her finish.*

Note that this is the first time P intervenes, because he feels that the detailed questioning is not making the issue clearer. He thus emphasizes the *LdL* principle 'Listen carefully'. Also note that P does not comment on the contents, although he already sees that the explanation is wrong, and P does not give an example or a definition for the words, but attempts to lead the communication in a direction so that the interlocutors might finally understand each other. Thus, P also tries to support SE in making his sequence flow smoothly.

SE: *OK.*
S1: *So – we have the verb and the 1st person singular, 2nd person blah blah blah and then we have past subjunctive which had the meaning of talking about the future and possible things and this subjunctive form was probably the strongest of these forms and didn't have an "s". And therefore these are former past subjunctive forms which didn't have an "s" because they didn't have an "s" anyway.*
SE: *OK. Just that we talk about the same thing. By "subjunctive" you mean "Konjunktiv", don't you?*

Again, SE does not just say that this does not match his solution, but he checks the "common ground", he checks whether he understands S1 correctly by reformulating her answer.

S1: *Well, at the Wikiversity page* [where the instructor had stored some verb inflection tables] *it's called "past subjunctive".*
P: *Yeah, but "subjunctive" is the English word for "Konjunktiv".*

Since this turns out to be a simple problem of word-choice, P intervenes here with a quick remark to enable the students to concentrate on the contents of the argumentation. Note that P does not help to structure the contents.

SE: *OK. I think your theory would be much better to understand if you had an example for that.*
P: *Aha.*
SE: *I see somehow what you mean, but without an example I think it's quite hard to understand for me.*
S1: *OK.*
SE: *So maybe a German example … or any example…*
P: *A German example, you said.*
SE: *How did you come to your theory?*
P: *Yeah.*
SE: *You must have had something in mind when you came to your theory.*
P: *Very good, SE.*

SE, in a model way, asks S1 to support her argumentation with the help of examples. He has already learned that many phenomena of medieval English can be illustrated with the grammar of Modern High German, historically related to English, but more conservative in its developments. P tries to support SE, who had revealed his nervousness to him before, by giving little feedback remarks.

S1: *Well, it was the second homework* [an explanation follows].
[Other members are confused by the explanation. SE states that this explanation is incorrect. Some murmuring. S2, regarded by the others as the best student in the group, mentions that these verbs are all former "preterite present verbs". Others look confused.]

SE: *We should have a look – as S1, completely right, told us, this is an Old English problem – maybe we should have a look at the German words. There are German words for "will", "can" and "shall". Let's begin with the three of them. S2!*

S2: *We have the same phenomenon in German. So in German the ending of the 3rd person is usually a "t". "Er bringt, er macht".*

SE: *Yeah, very good.*

S2: *It's always "t". And in verbs that developed from preterite present verbs we don't have this "t": "er will", not "er willt".*

SE: *Very good, yeah.*

S3 [sitting next to S2]: *It's the umlaut.*

S2 [to S3]: *That has nothing to do with umlaut. We're talking about the ending.*

It should be mentioned here that S3 is a student who, at the time of this seminar, quite often does not manage to address a question directly, but who rather frequently gets stuck in associations a question or remark may have evoked in her. Her associations may or may not be related to the actual problem discussed, but they often do not relate to a currently discussed issue directly. This has already cost her points in prior exams. Note also in the following that she has a hard time in getting away from her associations and does not even listen to the others.

S3: *Ablaut?* [to herself, with reflecting looks]

SE: *We're talking about 3rd person singular now.*

S3: *Ablaut!* [to herself, with self-assured looks and nods]

S2 [to S3]: *We're only talking about the ending.*

SE: *Just the ending of 3rd person singular.*

S3: *Yes, but what I wanted to say is that in German they don't form it with a "t", but with an ablaut.*

SE: *They don't form it with anything.*

P: *We're not doing this question now, S3.*

In earlier situations P tried to point out S3's problem outside the classroom by saying: "You didn't say anything wrong, but realize that this didn't answer the question, which was X, not Y?" Her answer always was: "Yes, but if the question had been Y, then my answer would have been correct, wouldn't it?" Since P's advice strategy obviously didn't work, he tries a more direct alternative.

S3: *Yes, but--*

P [interrupting S3]: *No. Really. That's an advice that means a lot to me, that I've been trying to give you: Stick to the problem that we're currently dealing with. Don't look at all other sounds that may be--*

SE [interrupting P]: *Yes, thank you, Mr. G, thank you very much.*
[Laughter by some students.]

SE: *No, you're completely right, I agree, but I think I try to handle it myself.*
[Laughter by most students.]

P: *OK, yeah.*

SE [to class]: *No, Mr. G is absolutely right. He is in the situation of telling you this. I'm a fellow student of yours, so it's always hard to criticize you. But I think--*
[Some more laughter.]

SE: *But I think* [loud, drowning the laughter] *we should concentrate on the problem now. We're in German, 3rd person singular. Take one of the three words we just had: "can" "ich kann, er kann, sie kann". It's always "kann". Not like German "ich mache, er macht". You have the German "t" at the end: "er macht", but "er kann", there's no "t" at the end. What does this tell us if we have the same problem in German and in English? What can we see by that? S4!*

S4: *It has the same root, maybe.*

Note the remarkable behavior by SE, who had claimed to be nervous before class. He wants to manage the situation on his own. Thanks to the typical *LdL* atmosphere of tolerance, empathy and cooperation, he has the courage to interrupt P and say 'Thank you, but I don't need your help now'. P does not take it personally, but understands SE's needs and from then on remains fully in the background, except, as the reader will see, at points where SE asks for confirmation explicitly or through his looks. Moreover, SE manages to cope with the distracting laughter this incident has caused. He drowns the laughter through a briefly louder voice, states where the discussion is at the moment, continues with some further illustration himself, thus draws the others' attention to "his stage" again. As soon as everyone's eyes are on "his stage", he incorporates interactive elements again.

SE: *Yeah. So this problem already existed before the Anglo-Saxons came to Britain. Can we say that, Mr. G?*
[P gives a supporting nod.]

SE: *OK. Keep that in mind. What S2 said, this preterite present: If you, for example, have an Old Germanic language, you want to express that "he can" ... then ... I'll say it in German now.*
[The rest of the session is done in German; the text is translated into English in the following passages.]

P allows the session to be continued in German, as English has already been practiced, as English language skills are not in the foreground at this point and as he does not want to interrupt SE again. Note that SE has now also picked up the technical term again, as he knows that effective rhetoric of science not only means knowing how to converse with and explain things to laypersons, but also to use technical terms in order to be accepted as an expert.

SE: *The word has, in fact, a totally different meaning. The word is, in fact, a form in the past that says "he managed it". And this "he managed" adopted the meaning of "he can", because if he has managed something in the past, he can do it. And this way a past tense form becomes a present meaning.*
[SE looks at P, P gives a supportive nod.]
SE: *OK. And this way this word, as this word is a word in the past, so this "kann" is in fact a past tense form of a word that nowadays doesn't exist any more. And this word is already inflected. This means, there is no need for an "s", because this "er kann" is already inflected in past tense.*

In agreement with the principle "Speak in familiar analogies", SE explains the history of preterite-present verbs with a German example. SE keeps in mind the time limit that he is allowed: Since the others have not found a way from unclarity (= the question) to clarity (= the answer) (Martin's German terms are *Klarheit* and *Unklarheit*), SE has now decided to give a linear solution (Martin's *linearity a posteriori*).

[SE asks which new problem English speakers had to face then. One student says that a new past tense was needed. SE confirms this and continues by explaining that after "can", "will", "shall", "may", etc. had turned into present tense forms the new past tenses were formed: "could", "would", "should", "might", etc. He points out that these forms can nowadays also be used in other functions, for instance, in politeness formulae, but that they were originally past forms and that this is why here, too, the same phenomenon as for the present tense is true: no "s" for 3rd person singular. This last remark confuses S5.]
S5: *Er? But there's no "s" in past tense anyway. That's a matter of present tense, isn't it? Or am I completely wrong at the moment?*
[SE puzzled.]

As SE looks puzzled and since time is nearly up, P briefly intervenes to create "common ground".

P: *Yes, that's what he's saying.*
S3 [re-joining the polylogue, after some minutes of evident dissatisfaction after P's prior critical intervention]: *So that's why there is no "s".*
S5: *Yes, but in other forms, this doesn't exist either. After all, which verb has "s" in the 3rd person singular in past tense?*
SE: *No, no, that's what I was aiming at.*
[Others slightly moan because of S5's remark.]
SE: *OK, no, this is a good question. Let's not simply put it down. This is a good question. What I was actually aiming at: it is actually the past tense form, you are completely right, in the past tense form there is no adding of "s" in the 3rd person. However, you can use this "could" not only in past tense, but also, for example, in politeness phrases: "Could he please ...". And then the question would come up: why no "s"?*
S5: *Oh yeah, OK.*

Note that P and S3's remark did not help S5. She reformulates her problem again. Some student's derogatory reaction is now ideally reacted on by SE, who indirectly reminds people of the *LdL* principle 'Be empathetic and tolerant'. SE also rightly understands his role as the expert in an *LdL* manner, namely that the expert should strive to understand the layperson and to make himself intelligible to the layperson. As a matter of fact, through his reformulation and his example, SE manages to make himself understood by S5.

This section illustrates that *LdL* is a model that enables students to learn

- how to check the desires and needs of a lay audience;
- when to use technical terminology with a lay audience (in order to be accepted as an expert) and when to refrain from technical terminology with a lay audience (in order to be understood);
- how to check and, if need be, create a basic "common ground" for further exchanges;
- how to illustrate expert knowledge in ways that a lay audience can follow;
- how to accept a layperson as an equal communicative partner and not as a hierarchically inferior interlocutor; and
- how to sense and check whether explanations have been understood by a lay audience.

Again, such competences are not only relevant when a language teacher explains something to language learners, but also in constellations such as between doctor and patient, engineer and city council, tax consultant and entrepreneur, and so forth.

4 Effectiveness and efficiency of *LdL*

4.1 Quantitative research

An article by Grzega and Schöner (2008) presents a study in which 97 former students of university classes modelled on *(Meta)LdL* completed a questionnaire to determine the effectivity and efficiency of *(Meta)LdL*. In this questionnaire, the competences were formulated as statements that informants had to label as "I fully agree (1)", "I rather agree (2)", "I rather disagree (3)", "I fully disagree (4)" (= 4-step Likert scales). A majority of participants attested *LdL* to have effected a gain in all 13 competences asked for (i.e. the average mean was below 2.50 for all statements). The thirteen statements included three competences related to expert-expert communication, layperson-expert communication and expert-layperson communication. These three statements (here translated from German into English) and the average means of the informants' answers are:

- *I am now able to give well-founded answers to questions more rapidly.* – Median: 2/Mean: 2.12
- *I am now able to formulate questions to others in a more intelligible way.* – Median: 2/Mean: 2.22
- *I can now impart my knowledge to other people in a better way.* – Median: 2/Mean: 2.19

Informants were also presented a list of nine other concepts or methods and asked to tick, for each goal/statement, the alternative concepts or methods they would consider more efficient than *LdL*. These nine other concepts were: the still widespread "chalk-and-talk" lecture (the classical lecture by the instructor); a modern "edutainment" lecture by the instructor; a course that would have been half lecture, half exercises led by the instructor; student speeches with subsequent instructor comments; student speeches with subsequent exercises led by the instructor; a course blending a lecture by the instructor and exercises led by students; individual work instead of team work; alternating techniques, but with all sequences moderated by the instructor; fewer classroom phases and more project work outside the classroom under permanent instructor guidance. None of the alternative techniques was considered more efficient for any particular goal by a majority of the informants. (It may be interesting, though, that 39.13% stated that "fewer classroom phases and more project work outside the classroom with instructor guidance" would have been more efficient for the first of the above-cited statements.)

The questionnaire above was distributed at a time when students were still not constrained to complete their studies within the European modularized six-plus-four-semester B.A./M.A. system. Therefore, another questionnaire was designed by the two authors of this article for distribution among students in this new system of university programs. Again, the questionnaire consisted of a 4-step Likert scale. It was especially designed for this article and therefore covered only statements related to skills in expert-expert and expert-layperson communication. It consisted of two parts structured in parallel, the first one for the classes in linguistics, the second one for the classes in literary and cultural studies. The questionnaire, written in German, could be completed fully anonymously and on-line. All former "modularized" students of the two authors were invited to participate in the questionnaire. In the end, 52 students completed the questionnaire (47 did the part on linguistics classes, 37 the part on literary science classes). Some of these students completed both parts of the questionnaire, some only one part. The following table gives the statements (translated into English), the medians and the arithmetic means for each discipline/instructor separately and for both disciplines/instructors together. Each statement begins with "Thanks to [instructor's name]'s interactive teaching concept …"

	Median JG	Median BK	Median JG+BK	Mean JG	Mean BK	Mean JG+BK
1: … I can understand academic publications in linguistics/literary studies better.	2	2	2	2.30	1.89	2.12
2: … it is easier for me to formulate questions related to linguistics/literary studies .	2	2	2	2.23	1.94	2.11
3: … I can answer questions in linguistics/literary studies in seminar papers better.	2	2	2	2.35	1.86	2.14
4: … I can participate in expert conversations in linguistics/literary studies better.	2	2	2	2.06	2.03	2.05
5: … I can give better explanations from linguistics/literary studies to a layperson.	2	2	2	1.64	1.81	1.71
6: … I can capture a layperson's questions on linguistic/literary topics better.	2	2	2	1.72	1.84	1.77
7: … I can answer a layperson's questions on linguistic/literary topics better.	2	2	2	1.72	1.81	1.76

In sum, the medians and means of all aspects (especially the last one) are on the "Agree" side (that is below 2.50) so that in the students' view, *LdL* is at least one effective way of enabling students to acquire expert communicative skills.

4.2 Qualitative research

From German primary schools to adult group training in companies in Germany, we (and others) have experienced *LdL* as an effective method for all ages and all subjects. Several reports, especially from teachers at the level of secondary education, are available at the *LdL* website at http://www.ldl.de. The website includes bibliographical references to printed publications as well.

Although the vast majority of experiences with *LdL* has been collected in Germany, we believe this is a model that also works in other countries and cultures. That *LdL* even works in non-western group-oriented and hierarchy-driven countries such as China, Japan and Vietnam is reported by Pfeiffer/Rusam (1992), Cheng (2000), Boeckmann (2006), Schart/Schütterle (2007), Oebel (Martin/Oebel 2007). These reports originate in culturally homogeneous learner groups. In addition, though, one of us (Bea Klüsener) had the opportunity of trying out *LdL* in different culturally mixed learner groups at a Swedish university. The largest intercultural group consisted of 26 M.A. students in European Studies from Sweden, Russia, Bulgaria, Turkey and Iran. The class was held in English – in other words: a foreign language for all participants. The topic was taken from literary studies although only one of the students had a B.A. in literature. The topic being "Concepts of Evil in the 19th-Century Novel", six exemplary novels were to be analysed with regard to their cultural background in order to come to explanations on specific 19th-century forms of evil. After the teacher had provided the students with an overview of British literary and cultural history in the 19th century (including the necessary technical terms and concepts from literary and cultural studies), students were equipped with excerpts from the novels, further informational input and tasks for their work with the different novels in six small groups. In order to share their findings concerning the novels' contents with the others, they were supposed to prepare poster presentations on the texts and the ways in which evil characters were depicted in them, and explain and discuss their findings in class to come to a conclusion on what typical British 19th-century faces of evil, or types of literary villains, were like and why.

This part of the tasks caused different reactions. One of the male students told the instructor that they were not used to working in this manner and that they were afraid of saying something wrong and therefore having to feel embarrassed. His first reaction was to write his presentation down on paper to read it out to the others. Nevertheless, when the students had been told that nobody was supposed to laugh or make fun of others but that this was the very opportunity of testing and improving their presentational and communicative skills without being graded, they relaxed, participated attentively and tried to outdo preceding groups with more and more creative presentations. Pooling their knowledge on the historical and cultural background and the information gathered from the novels, they successfully analysed – in polylogic exchanges, with only little support by the teacher – a number of concepts to explain the faces of evil they had come across in the texts by applying the technical terms and concepts they had learned at the beginning of the lesson.

Although, in this learner group, students from Eastern European countries were at first rather reluctant, they soon got used to the method and even felt proud at having mastered the difficult situation of speaking to a class without any notes, of answering questions as an expert and explaining their findings to the others, of moderating a debate and coming to a conclusion by combining their knowledge in a polylogic network. As a consequence, we are convinced that LdL is also appropriate for culturally heterogeneous groups – no matter what the discipline, the prior knowledge and the mother tongue(s) of the students may be.

5 Recommendations for organizing *LdL* lessons

We would like to list some brief recommendations for organizing *LdL* sessions and refer the reader to the *LdL* website for further suggestions. In our experience, *LdL* works best in groups of 15 to 35 learners. In *LdL* sessions students should sit in a semi-circle (C-Form like Communication). For the first *LdL* session, the instructor should have prepared a challenging task for partner work (partner work phase: x minutes). While the teams work on the task, two learners are chosen to lead the plenary solution phase, or discussion phase, and are instructed on how they should do this: they are given a solution sheet, but are told that they should not present nor play question-answer games, but that they should moderate polylogues. During the plenary phase (1.5–2 minutes in the humanities, 0.5 minutes in the sciences), the instructor ensures a good atmosphere to promote listening, polylogic response, tolerance and empathy. If the moderators do not manage to do so themselves, the instructor summarizes the most important points and then explains the method.

In the following sessions, depending on the prior knowledge of the students, student-experts can create and lead revision sections or create and lead sections for introducing new knowledge. It should be pointed out that tasks in class should, as soon as possible, be tasks that do not only lead to progress from ones leading to simple clear solutions to more complex solutions. Student-expert teams should not consist of more than four people. If there is a core knowledge they have to cover, the students need to know this (ideally, they are given a list of ca. 7 items to teach); otherwise, the student-experts delve into a topic and decide for themselves what is central (ideally, they make a list of approx. 7 items). They should talk about their plan with the instructor in advance; the instructor should predominantly check whether the time-line is reasonable (as this is something that students have a hard time estimating). During class, the instructor acts as illustrated above (s/he makes sure that there is a good atmosphere and that someone provides, if need be the instructor, linearity *a posteriori*). If things cannot be completed during a lesson, the Internet can be used for providing students with additional information. A brief evaluation should be carried out by the middle of a term at the latest.

6 Additional Perspectives

Scientists have to master a broad spectrum of genres and all of them have their own styles (cf. Klüsener/Grzega in print). Although the core feature of *LdL* lessons is the polylogic nature of sessions, monologic situations are, as already mentioned, not simply banned from lessons. Monologues are well suited for overview introductions and, as illustrated in Section 3.2, summaries. Monologues are also suitable where students want to present results from their own research. This calls for the communicative skills of an expert, too, as this is a situation that is comparable to a talk at an academic conference. Beyond this, experts have to master diverse written genres (focussed on, for instance, in Göpferich 2006). In *LdL* classes students are, on the one hand, “forced” to write seminar papers which should not just be summaries of existing literature (and which are normally graded). On the other hand, *LdL* instructors also create opportunities to train other genres. One instrument is the portfolio where students can select items from a list in order to train and reflect on their skills. Their products are then commented on (but not graded). Items from the fields of expert-expert communication and expert-layperson communication may include the following:

- Write an academic review of about 100 lines on a monograph from the course bibliography.
- Write an abstract of about 300 words of a journal article of your choice (which is not already preceded by an abstract).
- Write three popular contributions of about 30 lines on a layperson's question on language (from the field of topics of the course).
- Contribute at least 40 lines to an already existing or new Wikipedia article (or several articles) related to topics of the course.

These are just a few examples to train written genres as well as monologic and dialogic genres. They are also examples that *LdL* (more bluntly: the concept of *MetaLdL*) is not just meant to teach oral competences, but strives for an encompassing preparation to meet the requirements of information and knowledge-based societies.

7 Conclusion

Our examples in this article were taken from classes in linguistics as well as literary and cultural studies. However, positive results have been reported for all kinds of school subjects as well as several non-philological subjects at university level (cf. Grzega/Waldherr 2007 and other reports at the *LdL* website). Therefore, *LdL* seems highly suitable for the teaching of foreign languages for special purposes, too. To sum it up: *LdL* has been experienced as one effective and efficient way to train the various communicative skills needed in our global society, the core being the polylogic nature of the classroom. The *LdL* classroom thus represents a protected microcosm in which learners can gain self-confidence for future communication in the unprotected macrocosm. ◆

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