

Self-regulated Cooperative EFL Reading Tasks: Students' Strategy Use and Teachers' Support

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Self-regulated Cooperative EFL Reading Tasks: Students' Strategy Use and Teachers' Support

The ADEQUA research project has gained empirical evidence on how the situationally adequate use of learning strategies can be facilitated during cooperative reading tasks in the EFL classroom. Two video studies were conducted with 9th grade EFL (English as a Foreign Language) learners in German schools: The first (laboratory) study investigated the students' use of strategies while working in dyads and without teacher support on a given task. The second study, a field study, focused on teachers' actions to support their students while working on a series of tasks in their regular classrooms. In this paper, we present the findings from a specific subsample of students (n = 30 from the first study and n = 228 from the second one), focusing on (a) the extent to which the students employed specific strategies adequately and successfully and (b) the types of support actions taken by the teachers and to what extent these actions facilitated the students' strategy use. The microanalytic approach adopted here allows us to identify those strategies which especially appear to require a teacher's support in order to be employed more adequately and successfully. Furthermore, by distinguishing between teachers' support actions which are more vs. less conducive to self-regulation and facilitating students' strategy use, we will provide recommendations on how to fine-tune teachers' assistance.

Keywords: learning strategies; self-regulated learning; L2 reading; scaffolding; task-based language learning; foreign language research; video study.

In second and foreign language classrooms across the world, reading in another language plays a crucial role. Providing plenty of linguistic and cultural learning opportunities is key to learners' L2 development. Learners need to be exposed to a rich lexical and structural environment which triggers their active construction of meaning (Finkbeiner, 2005). Depending on whether L2 texts are simply used for talk on the text or also for talk on thinking about the text, learners' language and cultural awareness might be enhanced. Furthermore, reading can serve as a springboard for oral interaction and writing (Aebbersold & Field, 1997; Carrell, 1998; Finkbeiner, 2005; Nuttall, 1996; Rasinski, 2004).

Reading authentic texts – which have been written for a native speaker audience – presents a challenge to both L2 learners and L2 teachers alike. While L2 learners need to cope with unfamiliar vocabulary, syntax, and/or cultural scripts and schemata, L2 teachers need to devise means of effectively supporting their students in this endeavor. The latter becomes even more crucial when students are supposed to tackle an authentic text as

autonomous learners. At this point, the notions of self-regulated learning and learning strategies come into play, both of which aim at equipping learners with the skills necessary to plan, execute, monitor, and evaluate their learning processes (Boekaerts, 1997; Cohen, 1998; Cohen & Macaro, 2007; Finkbeiner, 1995, 2005; Helmke et al., 2008; Nold, 2009; Nold, Haudeck & Schnaitmann, 1997; O'Malley & Chamot, 1990; Oxford, 1990). These skills, - whose acquisition is typically a long lasting, non-linear process during which the teacher's support can play a crucial role - are considered essential for sustained, life-long learning in today's information and knowledge society.

At first glance, we seem to be looking at a pedagogical paradox here, namely teacher support and intervention in autonomous learning. However, recent research on self-regulated learning has acknowledged the importance of providing appropriate support to learners in self-regulated settings. This is also in line with sociocultural theories of (language) learning (e.g., Lantolf & Poehner, 2008; Lantolf & Thorne, 2007) and, in particular, the notion of scaffolding within learners' Zones of Proximal Development (Vygotsky, 1978; van Lier, 2004; Finkbeiner, in print).

This paper reports on selected findings from the ADEQUA research projectⁱ (Finkbeiner, Ludwig, Wilden & Knierim, 2006; Finkbeiner, Knierim, Ludwig & Wilden, 2008) which builds on the premises described above. The project has gained empirical evidence as to how autonomous learning in the English as a Foreign Language (EFL) classroom can effectively be supported during cooperative, text-based classroom activities by means of teacher support actions. The intended goal is to facilitate the learners' situationally adequate as well as individually adequate use of strategies.

The project's findings will be integrated into a "Support Action Model (SAM) for Cooperative, Text-Based Classroom Activities in the EFL Classroom." This model will guide teachers in diagnosing reading comprehension difficulties and subsequently employing

support actions so as to maximally maintain the students' existing autonomy or support them in the process towards becoming autonomous learners.

In the following, we will elaborate on the theoretical underpinnings of the ADEQUA research project, the distinction between adequate and successful strategy use, and the distinction between adequate and successful teacher support actions.

Self-regulated learning

Boekaerts (1999) sees the ability to regulate one's own learning process as the key for successful learning in school and beyond. Students who regulate their own learning process successfully engage in analysing the task at hand, setting specific learning goals, and using different strategies to plan, execute, monitor, and evaluate their learning process (Butler, 2002; Zimmerman, 2002). Moreover, self-regulated learners are aware of their inner resources: They know about their motivation towards the domain to study, they know about their expertise, their skills, and adequate strategies to fulfill the task successfully. This relates back to the concept of the "good language learner" as coined by Rubin (1975) and re-visited by Griffiths (2008), Ushioda (2008), Anderson (2008), Finkbeiner (2008), and others.

Self-regulated learning is seen as a complex process involving cognitive, metacognitive, and motivational aspects of learning (Artelt, Demmrich & Baumert, 2001). The adequate use of learning strategies is considered crucial for successful self-regulation. Finkbeiner (2005) sheds light on the intricate multi-factorial interplay of interest, reading strategies and self-regulated learning and its impact on deep processing while reading. She investigates $n = 287$ ninth graders with respect to their reading strategies, reading interest and deep-process reading in English as a foreign language. Findings from structural equation modeling give evidence to the fact that self-regulated learning is a most crucial factor with respect to deep processing.

To promote self-regulated learning, teachers need to provide ample opportunities for working on cognitively challenging tasks, which make students choose, use, combine, and coordinate different learning strategies (Boekaerts, 1997). Depending on the level of their self-regulatory competence, students need some degree of external regulation while working on a learning activity (Boekaerts, 1999; Vermunt & Verloop, 1999). Butler (2002) states that the promotion of self-regulation should aim at (a) developing students' ability to analyze tasks and (b) setting task-specific goals. Moreover, teachers ought to help their students become aware of their metacognitive knowledge about learning and learning strategies and foster their monitoring and evaluation of their learning process.

For Vygotsky (1978), learning takes place in the Zone of Proximal Development (ZPD), which is defined as the distance between students' actual developmental level and their potential level of competence. That is, students can master tasks that go beyond their current level of competence if an adult, e.g. a teacher, and/or a more capable peer, provides individual support to them.

The concept of *scaffolding* describes best the type of individual support that a teacher can provide to students. Hammond and Gibbons (2001) describe scaffolding as "support that is designed to provide the assistance necessary to enable learners to accomplish tasks and develop understandings that they would not quite be able to manage on their own" (p. 15). *Scaffolding* includes teacher actions aiming at reducing students' frustration and fostering their motivation, indicating mistakes as well as modeling ways of problem solving (Wood, Bruner & Ross, 1976). As the students' skills improve, the teacher reduces *scaffolding* gradually in order to foster students' autonomy.

The type of scaffolding and the degree of external regulation depend on the students' needs. According to Meloth and Deering (1999), the type of teacher support during cooperative learning activities can vary from direct instruction during *mini lessons* to hardly

any or no support. Moreover, they point out that the direct instruction and modeling of cognitive and metacognitive as well as cooperation strategies can benefit the regulation of students' learning process.

Strategies in L2 reading

L2 reading is a highly active cognitive and affective process, which bases on the use of strategies, among other factors. It involves readers' constant construction of knowledge by means of hypothesizing and testing (Finkbeiner, 2005). This process combines readers' knowledge about typical language-specific combinations of text markers on the surface level, such as letters, words, phrases, sentences, paragraphs, and whole texts with content and semantic knowledge on the deep level (Erler & Finkbeiner, 2007). In this respect, L2 reading is both similar to and different from L1 reading. Similarities lie in the fact that meaning is not given in the text but constructed by the reader. However, differences might arise when L2 linguistic and/or cultural aspects diverge from the L1 knowledge the reader draws upon. Very often readers are not aware of the fact that they interpret and construct meaning by drawing on existing knowledge that might not fully or even at all qualify as a basis for understanding the text. In this case, language awareness and cultural awareness (Fehling, 2005; Finkbeiner, 2009; James & Garrett, 1991) can be helpful to make readers re-think, re-evaluate, and re-structure their knowledge structures.

Strategies seem to play a decisive role in this complex interactive play of text and reader factors (Finkbeiner, 2005). Whereas text factors include components such as text type, text difficulty level, length, setting, and content, reader factors include prior knowledge, sociocultural background, verbal intelligence, reading proficiency level, cognitive ability, interest, motivation, etc. It is still not clear to which degree these factors can compensate for or even substitute each other.

Even with quite some research to be found on strategies (Cohen & Macaro, 2007; Nold, 2009; Nold, Haudeck & Schnaitmann, 1997; Finkbeiner, 2005; Finkbeiner & Knierim, 2008), it is far from clear how to best investigate, diagnose, observe, and measure, nor how to foster and elicit strategies. This is due to the fact that the strategy construct so far is still fuzzy. A lot of different approaches can be found as to how strategies are described. However, there seems to be an overall consensus that strategies can be defined within the framework of three continua: (a) from conscious to unconscious, (b) from observable to non-observable and (c) from explicit to implicit (Finkbeiner, 2005).

Following O'Malley & Chamot's (1990) taxonomy, strategies can be divided into cognitive, metacognitive, and socio-affective language learning strategies. When readers apply cognitive strategies, for example, they highlight words, write down the most important words, look up words, or connect words or a passage to what they already know. These connection or elaboration strategies play an important role for textual deep processing (Finkbeiner, 2005, 2006a). Readers applying metacognitive strategies think about planning, monitoring, and evaluating their reading comprehension. Socio-affective strategies or coping strategies include, for example, self-talk and cooperation.

Although reading is a predominantly individual process (Finkbeiner, 2005), it can be vastly social and cooperative once certain pre-conditions are fulfilled. One of these is the creation of an anxiety-free learning atmosphere (Finkbeiner, 1995) that allows for peer learning, peer scaffolding, and co-construction of knowledge.

Adequate strategy use – successful strategy use

Recent research on learning strategies has pointed at the necessity of going beyond merely measuring frequencies of strategy use (Nold, 2009), since “the total number or variety of strategies employed and the frequency with which any given strategy is used are not necessarily indicators of how successful [learners] will be on a language task” (Cohen, 1998,

pp. 8-9). For example, some learners might employ several strategies in order to solve a specific comprehension problem but without success, (a) because they either lack the knowledge or skills necessary to actually apply the chosen strategies or (b) because the chosen strategies are not applicable to the resolution of the problem at hand. Moreover, even if learners possess the abilities to employ strategies which can aid them in successfully tackling a specific comprehension problem, they may fail to resolve it nonetheless.

It is evident, therefore, that the analysis of students' strategy use warrants a more fine-grained approach which takes into account the adequacy and the success of the strategies employed (in addition to their frequencies). As for adequate strategy use, we suggest considering two dimensions of adequacy, namely situation-adequate and learner-adequate strategy use. For clear and strong exemplary demonstration we quote examples that do not fulfill the standard of adequacy:

- It is not situationally adequate to infer the meaning of an unknown word if there are several unknown words in the same clause, which takes away the base for logical inferencing.
- It is not situationally adequate to use a between-parts elaboration strategy if only few, isolated fragments of the text have been comprehended or only parts are presented and the missing parts are not reliably communicated.
- It is not situationally adequate to look up many words in a dictionary if the time is very limited.
- Looking up words in a dictionary may not be learner-adequate if the learner lacks (a) basic knowledge of word formation or (b) basic knowledge of the alphabet.
- Asking another learner (repeatedly) for clarification may not be learner-adequate if that learner is a less knowledgeable peer.

- Making use of elaboration strategies may not be learner-adequate if the learner cannot draw on prior knowledge that is actually relevant to the comprehension problem at hand. In such a case, elaboration might result in, for example, making up a (misleading) story line based on the comprehension of only isolated fragments of the text.

Fine-grained analyses of learners' adequate vs. inadequate as well as successful vs. unsuccessful strategy use are of immediate relevance for the development of L2 teachers' abilities to diagnose their students' situation- and learner-specific strategy use and, subsequently, to take appropriate actions in order to optimize their students' strategy use. These issues are pivotal to the efforts of the ADEQUA research project (Finkbeiner, Ludwig, Wilden & Knierim, 2006; Finkbeiner, Knierim, Ludwig & Wilden, 2008) which will culminate in the development of the Support Action Model (SAM) mentioned above.

The notions discussed here are not completely new in language learning strategy research. Oxford (2003), for instance, stated:

A strategy is useful if the following conditions are present: (1) the strategy relates well to the L2 task at hand; (2) the student employs the strategy effectively and links it with other relevant strategies for doing the task; and (3) the strategy coordinates with the student's general learning style preferences to one degree or another. (p. 274)

The overlap with our terminology is apparent: A strategy which "relates well to the L2 task at hand" might be labelled situation-adequate, and a strategy which is employed "effectively" might be labelled successful. However, the conditions proposed by Oxford (2003) appear to be rather general and refer to the task as a whole, whereas the ADEQUA research project analyzes the students' strategy use at a micro-analytic level, that is, with respect to specific comprehension problems as they arise during task performance. Similarly, a strategy which "coordinates with the student's general learning style preferences" (2003) might be labelled learner-adequate. In the ADEQUA research project, however, learner

adequacy is determined against the *specific* knowledge and skills needed to resolve a *specific* comprehension problem rather than against learners' more general learning styles.

To summarize, the ADEQUA research project draws on two key insights from previous learning strategy research, namely the situation- as well as learner-specific nature of strategy use (e.g., Anderson, 1991; Finkbeiner, 2005; Garner, 1990; Helmke et al., 2008; Nold, Haudeck & Schnaitmann, 1997). Against this background, the ADEQUA research project adopts a micro-analytic approach which seeks to address three criteria relating to the quality of strategy use: successful, situation-adequate, and learner-adequate strategy use.

Intervening in the use of strategies

Programs for strategy instruction describe how teachers can introduce and practise language learning strategies with their students (Farrell, 2001). These programs also provide information on how to design appropriate tasks that make students use different learning strategies. Current models of strategy instruction aim at raising students' awareness of their strategy use and emphasize the need for the introduction and modeling of new learning strategies by the teacher (Rubin et al., 2007).

Strategy instruction as described above is primarily done in advance of or in addition to learning activities. In contrast to this, the ADEQUA research project focuses on how L2-teachers can promote their L2-students' awareness and use of learning strategies *while* they are working on a reading task. As described earlier in this article, successful learning takes place in the Zone of Proximal Development (Vygotsky, 1978; Finkbeiner, in print).

Accordingly, it is the teacher's task to assist students in their use of learning strategies by means of scaffolding.

Criteria for adequate teacher support actions

In analogy to distinguishing between adequate and successful students' strategy use, the ADEQUA research project is also concerned with the adequacy and success of teacher

support actions. Within the context of this project, teacher support actions refer to any kind of assistance provided by teachers to their students during specific cooperative, text-based classroom activities as designed for the study; further specifics as to the setting (tasks, texts) can be found below.

Given the primary goal of fostering and maintaining, as far as possible, the students' autonomy during task performance, a teacher support action is considered *adequate* if it meets the following criteria:

- It is situation-adequate if it contributes to fostering self-regulation by addressing the use of or reflection on learning strategies and/or eliciting the use of learning strategies and/or addressing possible ways of solving a comprehension problem and/or aiming at motivating the learners.
- It is learner-adequate if it is appropriate to the learners' L2 and general cognitive abilities.

Criteria for successful teacher support actions

Teachers' support actions are considered successful if they entail the resolution of the comprehension problem at hand (or a problem related to the task procedures), or if they provide sufficient input and stimuli for the students to resume their work on the task. However, this does not imply that teachers simply convey the meaning of a word, for example. Instead, they should support their students in finding the solution themselves.

Research questions

Based on the notions of adequacy and success with regard to learning strategies and teachers' support actions introduced above, we will address the following research questions:

- (1) Which strategies do students use in the given setting? To what extent are these strategies (a) adequate and (b) successful?

- (2) Which actions do teachers take to support their students in the given setting? To what extent are these actions (a) adequate and (b) successful?

Furthermore, we want to find out to what extent the teachers' support actions meet the students' needs in effectively (= adequately and successfully) employing learning strategies.

Method

Participants

Overall, the ADEQUA research project comprises three major phases, all of which involve ninth-grade EFL (English as a Foreign Language) learners from German secondary schools. Initially, pilot studies for all instruments and procedures used subsequently were conducted. Main Study 1 is a video study of learner dyads performing given L2 reading tasks in a laboratory setting without teacher support (n = 164 students, drawn – based on criterion and quota sampling – from a larger sample of n = 352 students). Finally, Main Study 2 is a video study of learner dyads performing a given series of L2 reading tasks in a regular classroom setting, allowing teachers to support their students while working on the task (n = 273 students).

Within the scope of this paper, we focus on two subsamples from Main Study 1 and Main Study 2. The students from these subsamples (see Table 1) worked on the same task based on the same text (see below), which allows us to relate the two data sets to one another.

[Insert Table 1 near here.]

Setting

Several task types and texts were used in various combinations at different stages of the ADEQUA research project (Finkbeiner, Knierim, Ludwig & Wilden, 2008). Due to space constraints, we will limit our subsequent discussion of learners' strategies and teachers' support actions to one particular setting, that is, the text *Snow* within the framework provided by the *Click & Chunk* task type (Bremer et al., 2002).

The text *Snow* is based on a chapter with the same title from Julia Alvarez's novel *How the García Girls Lost Their Accents* (Alvarez, 1991). The original chapter has been used in a L2 reading study with a similar sample before (Finkbeiner, 2005). For the ADEQUA study it has been further abbreviated and simplified to render it more accessible – yet still challenging – for the study's target population. The narrative is set in the United States during the Cuban missile crisis, and it describes the events of the time – particularly, the threat of a nuclear war and the routine of air-raid drills – from the perspective of Yolanda, a young immigrant girl, who is struggling with the culture and language of her new country. One day in December, Yolanda is sitting at her desk in the classroom and looking out of the window, when she sees the first snowflakes of the year falling. She mistakes them for nuclear fallout, since she has never seen snow in her life before, and panics. Only after her teacher explains to her that the white crystals falling from the sky are in fact snow, is Yolanda able to calm down again. (The text, as it was used in the present study, is reprinted in the appendix.)

The text poses several challenges to the students:

- some unfamiliar lexis: for example, “bonnet”, “peculiar”, “weapon”, “air-raid drill”, “to file” (in the sense of marching in single file), “fallout”, “mushroom” (referring to a mushroom cloud after a nuclear explosion).
- some less familiar structures: subjunctive clauses (“we might have war”, “the radioactive material would kill us”).
- unfamiliar content: historical background of the Cuban missile crisis, characteristics of nuclear warfare.
- implied information: the students have to infer that Yolanda immigrated from a country in which there is no snow.

Note: The students' familiarity with the greater amount of lexis, structures, and content of the text was ascertained based on the applicable curricula as well as textbooks used.

There is a strategic dichotomy: The challenges described above warrant the use of strategies as a means to overcome these potential comprehension problems. At the same time, however, the characteristics of these challenges constrain the use of certain strategies. For instance, it may prove difficult or risky for students to employ elaboration strategies in order to compensate for the lack of historical background knowledge; in such a case, the use of elaboration strategies may not be learner-adequate due to the student's lack of relevant prior knowledge on which he or she can draw (Finkbeiner, 2006b). This means, that teachers first have to make sure that sufficient background knowledge is given and whenever this is not the case provide it before the task will be assigned to the students.

The task types, which were developed for the ADEQUA research project, have four main characteristics in common: First, based on the principle of positive interdependence (Johnson & Johnson, 1994), they are designed for student pairs working collaboratively on a given text. Second, the tasks are supposed to elicit students' use of strategies which are deemed important in the given setting (e.g., summarization, problem identification, inferencing, monitoring, questioning for clarification). Third, they are intended to provide a framework to structure and scaffold the students' reading processes; in this respect, the task types are generic and can be used with a large variety of texts. Fourth, each task contains a problem-oriented sub-task, which requires the students to use the main ideas of the text (instead of merely summarizing them); in this respect, the task types include a text-specific component.

This paper focuses on a task type called *Click & Clunk*, which draws on the concept of Collaborative Strategic Reading (CSR) (Bremer et al., 2002; Klingner & Vaughn, 1999).

CSR rests on four principal reading comprehension strategies, namely previewing, “click and clunk”, getting the gist, and wrapping up (i.e., reflecting and evaluating) the reading process (Bremer et al., 2002).

As for “click and clunk”, a click is “something that you really get ... [y]ou know it just clicks”, whereas a clunk is “like when you run into a brick wall. You just really don’t understand a word the author is using” (Bremer et al., 2002, p. 3). Another feature of CSR is the use of roles (e.g., leader, clunk expert, gist expert, and announcer) which are assigned to the members of a group. Moreover, all group members receive cue cards to aid them in meeting their respective role responsibilities.

As can be seen from this brief description, CSR represents a comprehensive approach to cooperative reading, which necessitates a certain amount of teacher and learner training (Bremer et al., 2002, pp. 2-4) in order to take full effect. Since the ADEQUA research project aims at the development and investigation of task types that require as little formal *a priori* training of teachers and learners as possible, we decided to extract and simplify the core components of CSR, particularly the Click & Clunk procedure; also, our adaptation of CSR should be geared toward learner dyads (instead of small groups). The results of our efforts to “boil down” the elaborate framework of CSR according to our needs and purposes are evident from the instructions and worksheets the students received (see Worksheets 1-3 in the appendix). Furthermore, we produced a mini video in which two students modelled the procedure to fully standardize the instruction.

Procedure

The primary goal of Main Study 1 was to find out which strategies learners would use “naturally” (i.e., without any particular training) in the given setting (see above). To this end, learner dyads were videotaped while working (without teacher support) on the given task in a laboratory setting outside of the classroom. After the task performance, the students

participated in a stimulated recall procedure (Gass & Mackey, 2000). They were asked to view selected episodes from the video recording of their own task performance and retrospectively verbalize what they were thinking or doing during those episodes. In particular, the stimulated recall focused on episodes which the two observing members of the research team identified as opaque, for example, with regard to the students' resolution of a comprehension problem. Overall, the stimulated recall procedure provided valuable further insights into the students' thought processes.

Main Study 2 aimed at exploring the support actions teachers would provide "naturally" (i.e., without any particular training) to their students while they were working on the given task. For this purpose, the teacher-student interaction in regular classroom settings was videotaped. Following the videotaped class period, stimulated recalls were conducted with the teacher and selected students to further elucidate the rationale of the teacher's support actions as well as the students' perceptions thereof. For both studies, the video recordings were transcribed and coded using the video analysis software *Transana* (Woods & Fassnacht, 2008). The coding scheme for the first main study was based on O'Malley & Chamot's (1990) taxonomy of language learning strategies, which had been used in earlier strategy studies (e.g., Finkbeiner, 2005; Nold, Haudeck & Schnaitmann, 1997). We refined the taxonomy in a data-driven manner according to the principles of qualitative content analysis (Ludwig, 2009; Mayring, 2008). The development process of the coding scheme for the second main study was primarily data-driven. Upon completion of the coding process using *Transana*, the data (i.e., code frequencies) were exported for further analysis with a statistical software package (SPSS). The analyses presented in this paper focus on descriptive statistics, that is the absolute frequencies of the strategies (Main Study 1) and teacher support actions (Main Study 2) employed.

In the context of our transcribed protocols as well as student task sheets we would like to mention the language issue. The students participating in the study were allowed to use the L1 or L2 according to their liking and convenience in completing the tasks as well as in conducting the learner–learner and learner-teacher talk. The reasons for this were that a) we were interested in students’ application of strategic knowledge in the given task and not in the way they could describe or articulate this strategic knowledge in the L2, b) we did not want to confound the L2 reading comprehension results with L2 writing results, c) we wanted to avoid that a probably poor English language proficiency level would be an obstacle to meta-cognitive talk and strategy elicitation. This would not bias our findings as our focus was on finding out how students used specific strategies in order to understand the L2 texts and not in order to produce texts in the L2 (Finkbeiner, 2005).

It should be noted that, in addition to the video data, data from student questionnaires and tests were collected, including demographic information, English language proficiency, interest in reading English texts, self-regulatory competence, task-based reading comprehension tests, etc. Based on these data, we were also able to ascertain the criterion validity of the study’s core constructs (i.e., adequacy and success with regard to students’ strategy use and teachers’ support actions; Ludwig, Finkbeiner & Knierim, 2009). However, a discussion of the findings emanating from these data sources is beyond the scope of this paper.

Results

Research question 1: Students’ strategy use

To determine which strategies students use in the given setting and to what extent these strategies are (a) adequate and (b) successful we examined the frequencies of strategies used obtained from our content-analytic coding of the video material.

[Insert Table 2 near here.]

Table 2 shows the mean values, the standard deviation as well as the frequencies of those strategies, which the students, on average, used at least once during the task. In addition to the frequencies, the proportions of adequate and successful use are given for each strategy. The focus here is on situational adequacy and not on learner-adequacy. A number of interesting observations can be made: Considering the challenges posed by the text (see above), the number of strategies used to tackle comprehension problems can be considered quite low. Even though we found 69 strategies altogether, only a few of them were used more than once in each session. Among the nine most frequently used strategies, there are six cognitive strategies (summarization, resourcing, language-related world elaboration, inferencing, translation, content-related world elaboration), three socioaffective strategies (three types of questioning for clarification), but no metacognitive strategies (such as monitoring). On the other hand, two types of elaboration strategies, which are considered especially useful in promoting deep-level processing of a text (Finkbeiner, 2005) are among the top nine strategies used by the students. However, despite the fact that the elaboration strategies belong to the top 10 of the most frequently used strategies the mean average shows us that the average use of each strategy is not really high: each one of the personal elaboration strategies (language –related and content related) was only used once in average per session. Most of the strategies were used situationally adequately with proportions well above 90%. (Note: This does not imply that the strategies were always *learner* adequate.) There is one noteworthy exception: Inferencing was used in a situationally adequate way “only” in 87% of all cases.

It is important to note that the proportions of successful strategy use are considerably lower than those of adequate strategy use. The success rates for content-related world elaboration and vocabulary-related questioning for clarification are particularly low. Here we

can see a discrepancy between frequency, success, and adequacy of strategy use. The mere look at frequencies does not help explain the success of the reading process.

Research question 2: Teachers' support actions

The findings here focus on the actions teachers take to support their students in the given setting as well as to what extent these actions are (a) adequate and (b) successful. In the following, selected results and transcript excerpts of the second phase of ADEQUA are presented. In particular, we look at those teacher support actions that were identified most frequently and discuss two transcript excerpts.

[Insert Table 3 near here.]

Table 3 lists those teacher support actions that were identified most frequently (mean per lesson) during a 45-minute English lesson. This list contains teacher support actions that, according to our definition, are considered *adequate* whenever they *foster* self-regulated learning (with an asterisk at the end) and teacher support actions, which are considered *non-adequate* whenever they *do not foster* self-regulated learning (no asterix).

Without any specific prior training or coaching, teachers predominantly support their students by carrying out actions *for* them instead of supporting the students in carrying out these actions themselves, as the table shows. In particular, teachers summarize (parts of) the text and paraphrase or translate unknown words. Moreover, teachers use information from the text (text-immanent elaboration) to explain unknown words to the students and give explicit positive feedback extensively to the students.

In contrast, the number of teacher actions that aim at promoting students' autonomy and self-regulatory competencies is relatively low. Eliciting learning strategies barely takes place, and teachers hardly review the use of learning strategies and ways of problem solving with their students.

We now turn to two examples of teacher-student conversations which illustrate two different approaches to supporting students' comprehension of the expression "air-raid drills" in the second paragraph of the text *Snow* (see appendix). Transcript excerpts dealing with this compound have been chosen because (a) this compound is central for the understanding of important passages of the text *Snow* and (b) it was incomprehensible for many students.

The first excerpt (Table 4) shows a teacher's student-centered support action aiming at fostering students' self-regulatory competencies. In contrast, the second excerpt (Table 5) is an example of a more teacher-centered approach exemplifying and underlining the findings discussed above.

[Insert Table 4 near here.]

During this student-teacher conversation, different teacher actions can be identified (see Table 4). First, the teacher asks the students whether they know parts of the compound "air-raid drills". This support action belongs to the category "eliciting the cognitive strategy 'transfer of morphological/lexical L2 knowledge'": When students apply this strategy they use their foreign language (L2) knowledge to recognize the morphological structure of a compound. Asking the students for the meaning of the individual parts of the compound might be seen as the teacher's effort to elicit the cognitive strategy *translation*. Finally the teacher asks the students how they came up with their answers. The students answer by summarizing parts of the text. As a result the teacher's inquiry into the students' problem solving procedure elicits the cognitive strategy *discourse-level summarization*.

To conclude, in this conversation, the teacher functions as a facilitator of students' mental actions. It is the students who find the answer themselves. The teacher encourages them to use and rely on their language knowledge and makes the students share their thinking processes, which may have a positive influence on students' awareness of their learning processes and autonomy.

[Insert Table 5 near here.]

In the second example (see Table 5), the teacher carries out most of the actions for the students. First, the teacher explains that a bilingual dictionary may contain different translations of one word. This advice might seem necessary, since the students have chosen a translation from the dictionary that does not fit into the context of the text. This information may have a positive influence on students' future use of the bilingual dictionary. Second, the teacher states that there is a word in German (i.e., the students' L1) which is similar to the English word *drill*. This advice can be interpreted as the teacher's attempt to elicit the cognitive strategy *transfer of students' L1 morphological/lexical knowledge*. Following this, the teacher paraphrases and translates the word *drill* and summarizes parts of the text. Finally, the teacher asks the students whether they have understood her explanations. The students indicate that they know the meaning of *air-raid drill*. Without verifying this, the teacher leaves the students.

This type of example is characteristic of most of the teacher support actions identified. Most teacher support actions are teacher-centered and instructional. The majority of teachers support their students by carrying out actions for them instead of eliciting strategies which might enable students to carry out the actions themselves and solve the problems more autonomously.

In the subsample examined here, 69% of all support actions were rated as successful and 5% as unsuccessful, whereas the success of 26% of all support actions could not be clearly ascertained. The latter figure attests to the fact that, in a considerable number of instances, teachers did not verify the success of their assistance: If they had concluded their support actions by explicitly checking the students' comprehension, they would have received a clear indication of whether their help was fruitful. This, in turn, would have been observable in the video recordings analyzed here.

Furthermore, with respect to all teacher support actions only 35% focused directly on the learning process and out of those only 6% could be identified as meta-cognitive reflection. So we hardly ever observed metacognitive reflection phases in order to raise the students' awareness of how they tackled the comprehension problems, why or why not their approach was adequate, or which alternative approaches they might want to consider when reading other texts in the future. Yet, this is what counts and what is crucial when it comes to the quality of teachers' assistance and students' success in learning. Overall, only few teacher support actions could be identified as actions that foster students' self-regulated learning by means of supporting students' use of cognitive, metacognitive and socio-affective learning strategies and by means of raising students' awareness of their learning processes.

Discussion

Pertaining to the strategy use by the students in Main Study 1, we would like to highlight the following insights and their possible implications:

- A major amount of the most frequent strategies were elicited by the task type (as intended; e.g., questioning for clarification, summarization, resourcing, inferencing). At the same time, the elicitation of other strategies which may be desirable in this context (e.g., monitoring, between-parts elaboration) probably needs to be more explicitly built into the task as a trigger. Generally speaking, this result appears to corroborate the assumption that specific strategies may indeed be triggered by task specifications. (However, this statement should not be misread as implying some direct or universal relationship between task design and students' learning processes.)
- Given the novelty of the task type, the number of questions for clarification relating to the task procedures was pretty low: This indicates that instructions and worksheets were fairly easy to use – even without any particular, lengthy training – and well designed.

- There was a considerable difference between the success rates of language-related vs. content-related world elaboration; the former may be argued to be less demanding, whereas the latter is more closely dependent on text-specific content knowledge (which, in the case of the text *Snow*, the students might not have had at their disposal). Especially with regard to teaching English as a *lingua franca*, the presence or even ubiquity of the English language in the everyday lives of EFL/ESL learners across the world can be harnessed for their benefit by raising their awareness of cross-linguistic similarities and differences as they relate to one's experiences and world knowledge.
- Vocabulary-related questioning for clarification was used relatively unsuccessfully. A possible reason is that it might be a less demanding strategy which can be very quickly used. Some students used this strategy in a highly formulaic, ritual-like fashion. They should be made aware of a more goal-directed, sparing use (e.g., to ask the partner only for the meaning of those words which one considers most important instead of asking for the meaning of each unknown word). Furthermore, this strategy needs to be accompanied by others, such as comprehension monitoring in order to increase the likelihood of successfully resolving the comprehension problem at hand.
- The students in this study seem to require additional training and practice with the use of dictionaries, especially in combination with monitoring and inferencing strategies in order to find the most appropriate meaning in the given context. This is a very important pre-condition which is often ignored. A lot of students do not possess the basic knowledge about how to use a dictionary effectively. In the era of electronic dictionaries, the skills needed to locate a specific lexical item in a dictionary might be argued to become less critical; on the other hand, though, students still need to be able to determine the most appropriate meaning of an unknown word, considering the specific context.

- The use of inferencing strategies appears to be in need of training at two levels: (a) Students should be enabled to realize under which circumstances they can or cannot rely on this strategy (i.e., determine when it is adequate); (b) they need to combine inferencing with monitoring strategies in order to increase the probability of successfully resolving the comprehension problem at hand.
- Since metacognitive strategies did not figure prominently in the subsample examined here even though they may be combined with cognitive and socio-affective strategies very effectively, amendments to the task type and/or specific learner training appear to be worthwhile considering.

The findings from Main Study 2 indicate that most teacher support actions are teacher-centered and instructional as opposed to providing scaffolding. This may be a result of teachers' former training and/or subjective theories that they have to provide a certain result when needed. The majority of teachers support their students by carrying out actions for them instead of eliciting strategies for autonomous problem solving. This might be due to the fact that they believe they need to be so to speak omniscient and always provide the right answer. Moreover, the majority of teachers do not verify the success of their assistance – but this is crucial for the quality of teachers' assistance and students' success in learning. Few teacher support actions could be identified that foster self-regulated learning by means of supporting students' use of cognitive, metacognitive, and socio-affective learning strategies and by means of raising students' awareness of their learning processes. Thus, training alone would not necessarily trigger change in teachers' support action but rather training together with meta-cognitive talk on the teachers' perceived and adopted roles as good language teachers. Thus, an approach where teachers and students can be one and all, teachers, students and researchers (Finkbeiner, 2001, 2004) might be the answer and would have to be implemented together with the teachers' support training that involves strategy elicitation.

When relating the findings from Main Study 2 to those of Main Study 1, it is conspicuous that the teachers' support actions seem to miss their students' "weak spots." Most obviously, the use of metacognitive strategies on the students' part is just as rare as the teachers' elicitation or facilitation of metacognitive strategies. There are several possible explanations for the lack of metacognitively-oriented teacher support actions:

- Teachers might not be aware of the relevance of facilitating the use of metacognitive strategies in general.
- Teachers might not be aware of their students' lack of (adequate) metacognitive strategy use, and they might not possess the skills necessary to diagnose their students' potential deficits regarding the (adequate) use of metacognitive strategies.
- Teachers might not be equipped with the skills needed to actually scaffold their students' use of metacognitive strategies (e.g., by modeling them in a context-based fashion which is yet transferable to new contexts or situations).
- Teachers might prioritize their students' efficient completion of the task at hand over longer-term goals such as developing their students' strategic competence.
- Also, the given task type might not sufficiently emphasize or require the use of metacognitive strategies. This certainly applies to planning strategies, which the task type considered here does not target; to a lesser extent this may also apply to evaluation strategies. In contrast, though, *Click & Clunk* tasks lend themselves very well to using comprehension monitoring strategies, especially in combination with cognitive and/or socio-affective strategies, which has already been noted.

The low presence of meta-cognitive reflection complies to Finkbeiner's (2005) findings who labels this as metacognitive illiteracy. This list of possible explanations is not intended to be exhaustive. It becomes clear, however, that the issues mentioned here pertaining to the students' use and teachers' elicitation and scaffolding of metacognitive strategies are likewise

applicable to the students' other "weak spots" identified in Main Study 1 (e.g., adequate use of inferencing, questioning for clarification, resourcing, content-related world elaboration).

As a result, there is a clear need for teacher training programs that aim at raising teachers' awareness of how they can support and interact with their students so as to provide strategy-oriented scaffolding. This includes the development of process-oriented diagnostic skills to identify students' "weak spots" but also strengths with regard to their strategic competence. Hence, in contrast to solving (text comprehension) problems for the students, teachers should involve their students in the problem-solving process, strongly encourage their students to rely on their abilities and knowledge, and guide their students through the (reading) activity. Accordingly, teachers may tie in with students' prior world and language knowledge, ask them for possible ways to solve the problem at hand, or demonstrate and explain adequate problem-solving strategies. By this, the teacher takes over the role of a learning facilitator and role model who provides guidance and support and gives the students enough space for developing self-regulatory competencies (Finkbeiner, 2004).

Conclusion

The ADEQUA study examined students' "natural" use of strategies and teachers' "natural" support actions – that is, without any particular pre-study training – during cooperative EFL reading tasks. The selected findings presented in this paper represent good news and bad news. Let's start with the good news: We have seen quite a wide range of strategies in Main Study 1 as well as a variety of teacher support actions in Main Study 2. The bad news is that we have hardly observed any reflection neither on the use nor on the adequacy nor the success of these strategies and teachers' support actions, respectively. This corroborates the findings of other studies (Finkbeiner, 2005; Nold, Haudeck & Schnaitmann, 1997). Metacognition does not seem to be a major part in the participating students' and teachers' respective "repertoires."

So the results are both promising and enlightening: There is a “natural” and largely adequate use of strategies, yet in the end – depending on the individual strategy type – there is room for improving the success rate of strategy use. In particular, the use of strategies requires constant monitoring and evaluation., which would allow students to further optimise their learning process and its outcomes.

Based on the findings of our study, we have begun to design a teacher support action model (SAM) that can serve as the starting point for the development of a training model as well as a base for a new research study. The findings show that such a SAM must not be understood as a general training model, yet that it has to be defined and used in a domain-specific way considering the diversity of text, task, learner and teacher factors. So the ideal SAM needs domain-specific adaptations.

Our support action model emphasizes the importance of:

- eliciting students’ learning strategies as well as their reflection on applied strategies
- eliciting students’ peer scaffolding to maximize the co-construction of L2 knowledge, skills, and strategies (given the limited time per student for interaction with the teacher)
- using proactive feedback which is transferable to and applicable in future learning situations
- scaffolding students’ situationally adequate strategy use
- considering learner adequate strategy use
- supporting task and text motivation as well as task and text interest

In a nutshell: Teachers who teach in the framework of self-regulated learning scenarios, at least as observed in our study, seem to really make an effort to make use of the new "engine" which is strategies, yet they are not aware of the fact that their students need to test drive this engine and, furthermore, test the suitable fuel and oil. In addition, teachers are

not aware of the fact that, in contrast to the car industry, they themselves as well as their students cannot rely on one single prototype but that they need to question which model is the best one in each specific situation. Ultimately, they cannot teach their students drive the car by teaching them drive the car, yet by letting them drive: This way students “will be in the drivers’ seat and navigate smoothly through the literacy world” (Finkbeiner, 2006b, p. 49).

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Appendix: Task type “Click & Clunk” (adapted from Bremer et al., 2002) implemented with the text “Snow”

Reading text

Each student received a copy of the following text. The sample below contains one student’s highlighted passages.

Snow



Julia Alvarez

- 1 Our first year in New York we rented a small apartment with a Catholic school nearby, taught by the Sisters of Charity, big and strong women in long black dresses and bonnets, that made them look peculiar; they looked like dolls in mourning. I liked them a lot, especially my grandmotherly fourth grade teacher, Sister Zoe. As the only immigrant in my class, I was put in a special seat in the first row by the windows, apart from the other children so that Sister Zoe could help me without disturbing them. Slowly, she pronounced the new words I was to repeat: washing machine, cornflakes, subway, snow.
- 2 Soon I picked up enough English to understand great danger was in the air. Sister Zoe explained to the children what was happening in Cuba, where Russian weapons were put together and directed towards New York City. President Kennedy explained we might have war. At school, we had air-raid drills. A bell would go off and we’d file into the hall, fall to the floor, cover our heads with our coats, and imagine our hair falling out, the bones in our arms going soft.
- 3 I heard new vocabulary: nuclear bomb, radioactive fallout. Sister Zoe explained how it would happen. She drew a picture of a mushroom on the blackboard and put round dots with a piece of chalk around for the dusty radioactive material that would kill us.
- 4 The month grew cold, November, December. One morning as I sat at my desk daydreaming out of the windows, I saw dots in the air like the ones Sister Zoe had drawn – only some at first and then lots and lots. I shouted “Bomb! Bomb!” Sister Zoe ran quickly towards me. A few girls began to cry.
- 5 But then Sister’s Zoe shocked look disappeared slowly. “Why, Yolanda dear, that’s snow!” She laughed. “Snow.”

Worksheet #1


Individually, each learner writes down his/her "clunks" (comprehension problems) in column A on the worksheet below. In column B, all the "clunks" that were resolved by the students are noted.

- !**
1. Lies den ersten Abschnitt des Textes, bearbeite dann die Schritte A, B und C für diesen Abschnitt. B und C bearbeitest du gemeinsam mit deinem Partner!
 2. Danach liest du den zweiten Abschnitt des Textes und bearbeitest wieder die Schritte A, B und C.
 3. Dasselbe machst du für alle weiteren Abschnitte!
 4. Wenn ihr fertig seid, bekommt ihr ein neues Arbeitsblatt mit einer Aufgabe zur Zusammenfassung des Texts. Bearbeitet es gemeinsam!

Abschnitt Zf.	 <p>A Lies den Abschnitt. Schreibe dann auf, was du in diesem Abschnitt nicht sofort richtig verstanden hast („Stolpersteine“)</p>	 <p>B Sprich mit deinem Partner über deine „Stolpersteine“ und versucht gemeinsam, sie zu verstehen! Schreibe deine gelösten „Stolpersteine“ hier auf.</p>
1	bonnets, peculiar, row	Haube, regentümlich, Reihe
2	air-raid drills, file, bones	Luftangriff, feilen, gelehrt, Knochen
3	nuclear, fallout, mushroom, blackboard, dusty	Kern, Ausfall, Pilz, Tafel, staubig
4	/	/
5	disappeared	verschwinden

Worksheet #2

On this additional sheet, the students in each dyad cooperatively write down the main idea of each section of the text.

Abschnitt	<p style="text-align: center;">C</p> <p style="text-align: center;">  </p> <p style="text-align: center;"> Besprecht gemeinsam und schreibt in Stichworten auf: Was ist die wichtigste Aussage in diesem Abschnitt? </p>
1	<p>* Das Jahr in New York haben sie sich ein Apartment in der Nähe einer katholischen Kirche gemietet</p> <p>* Sie möchte die Schwestern, die unterrichtet sehr</p> <p>* Als einziger Einwanderer in ihrer Klasse wurde sie in die 1. Reihe neben dem Fenster gesetzt</p>
2	<p>* Sie konnte gerne Englisch um zu wissen, dass Gefahr in der Luft war</p> <p>* Schwester Zoe erzählte, dass Cuba und Russland sich gegen New York zusammenschließen</p> <p>* Präsident Kennedy erklärte, dass wahr sein kann</p>
3	<p>* Sie lernte neue Vokabeln wie Kambome</p> <p>* Schwester Zoe erklärte ihr, was passieren würde</p> <p>* Sie zeichnete ein Bild von Riesen an die Tafel und zeichnete Punkte herum, die ausfallen sollen</p>
4	<p>* es wurde kalt</p> <p>* einen Tag später sah sie an ihrem Tisch als sie aus dem Fenster guckte sah sie sechs Punkte, wie Schwester Zoe angezeichnet hatte</p> <p>* Sie rief: "Bomber, Bomber!" Dann kam Schwester Zoe</p>
5	<p>* Aber Schwester Zoe's geschrockter Blick verschwand langsam und sie dachte, denn es war nur Schnee</p>

* Sie lernte viele Englisch Wörter

* Kambome ist

← Ausfallen sollen wie Staubige radioaktive Material, das uns umbringen sollen

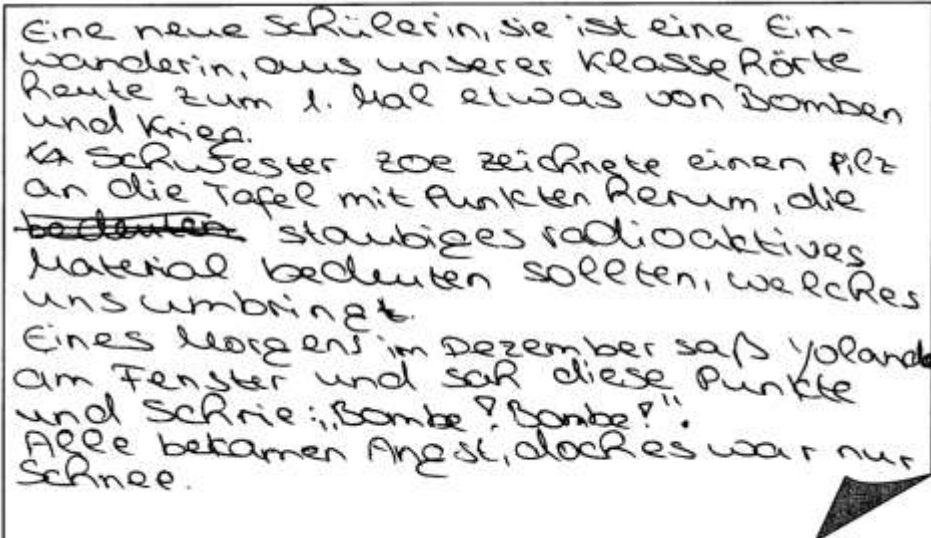
Worksheet #3

Finally, the students work on a task which asks them to apply their understanding of the text to a specific scenario going beyond the text itself. Here, the students are supposed to imagine that they are Yolanda's classmates and write down what they would tell their friends about what happened at school that day.

Note: So as not to confound L2 reading comprehension with L2 writing skills, the students were asked to respond to this task in German (being the official instructional language at German schools).

Stellt euch vor, ihr seid Mitschüler von Yolanda. Ihr trefft euch nach der Schule mit euren Freundinnen und Freunden und ihr erzählt ihnen, was heute in der Schule passiert ist.

Besprecht gemeinsam, was ihr schreiben wollt. Schreibt zwei bis drei Sätze (auf Deutsch).



Eine neue Schülerin, sie ist eine Einwanderin, aus unserer Klasse Rörte heute zum 1. Mal etwas von Bomben und Krieg.
↳ Schwester Zoe zeichnete einen Pilz an die Tafel mit Punkten herum, die ~~bedeuten~~ staubiges radioaktives Material bedeuten sollten, welches uns umbringt.
Eines Morgens im Dezember saß Yolanda am Fenster und sah diese Punkte und schrie: „Bombe? Bombe?“
Alle bekamen Angst, doch es war nur Schnee.

Table 1. Subsamples of 9th grade EFL students in the ADEQUA project reading the text “Snow” using the task type “Click & Clunk”

		Subsample from Main Study 1 (lab study)	Subsample from Main Study 2 (field study)
Students		n = 30	n = 228
(a) gender	male	n = 15	n = 109
	female	n = 15	n = 97
	undisclosed	–	n = 22
(b) school track ⁱⁱ	<i>Hauptschule</i> (lower)	n = 8	n = 47
	<i>Realschule</i> (middle)	n = 12	n = 69
	<i>Gymnasium</i> (upper)	n = 10	n = 112
(c) mean age		14.7 years	14.8 years
(d) mean number of years of EFL instruction		6.4 years	6.4 years
Students’ teachers		–	n = 11
Classes from which the sample was drawn		n = 15	n = 12
Schools from which the sample was drawn		n = 10	n = 8

Table 2. Frequencies of strategies used by students during the task (Main Study 1; task type “Click & Clunk” with text “Snow”; subsample with n = 30)

Strategy Definition	Example	Frequency of Strategy Use		% situationally adequate strategy use	% successful strategy use
		Mean	Std. Dev.		
Questioning for clarification – vocabulary-related <i>Asking the partner for explanation, verification, rephrasing, etc. of unknown or problematic vocabulary</i>	“What does ‘air-raid drill’ mean?”	4,33	2,454	98%	62%
Summarization at the word/sentence level <i>Making a narrowly focused mental, oral or written summary of language and information presented in a task (e.g., by following the text closely, with reference to specific details, by predominantly using phrases from the text)</i>	“They had a small apartment which was close to school.” (= summarization of: “Our first year in New York we rented a small apartment with a Catholic school nearby ...”)	3,93	4,433	100%	83%
Resourcing – using a bilingual dictionary <i>Using a bilingual dictionary to facilitate the comprehension process</i>	“I’ve got it! The dictionary says ‘bonnet’ is ‘Haube’ in German.”	3,90	2,187	97%	74%
Questioning for clarification – task procedure-related <i>Asking the partner about how to proceed with the task</i>	“Are we supposed to summarize the text?”	1,63	2,619	98%	94%
World elaboration – language-related <i>Using language knowledge gained from experience in the world (= informal contexts, outside of school)</i>	“Da gibt’s diese Show ‘Rent a Pocher’, wo du diesen Oliver Pocher für seltsame Sachen mieten kannst.“ [There is this TV show ‘Rent a Pocher,’ where you can rent this guy Oliver Pocher to do strange things for you.]	1,50	1,676	100%	84%
Inferencing at the word/sentence level <i>Using available information to guess the meanings of unfamiliar language items to fill in missing information by looking at the immediate context (i.e., single words or a single sentence)</i>	“‘Bonnet’... das muss irgendwas zum Anziehen sein, genau wie ‚dress“ [‘Bonnet’... that must be something you wear, just like ‘dress’,] (referring to the phrase “... big and strong women in long black dresses and bonnets ...” in the text)	1,23	1,104	87%	73%
Translation (verbatim) <i>Rendering ideas from one language to another in a relatively verbatim manner.</i>	“... große Gefahr war in der Luft.“ (= literal translation into German of: “... great danger was in the air”)	1,10	2,155	96%	83%

Questioning for clarification – content-related <i>Asking the partner for explanation, verification, rephrasing, etc. of the text content or parts thereof.</i>	“Why were there Russian weapons on Cuba?” (i.e., indicating uncertainty about the relations between the U.S., the Soviet Union, and Cuba at the time)	1,07	1,172	100%	71%
World elaboration – content-related <i>Using factual/content/subject-matter knowledge gained from experience in the world (= informal contexts, outside of school)</i>	“I know why she drew a mushroom! After an atomic explosion there is a big cloud which looks like a mushroom.”	1,00	1,597	96%	56%

Table 3. Frequencies of teacher support actions during one class period (Main Study 2; task type "Click and Clunk" with text "Snow"; n=12 class periods)

Teacher Support Action <i>Definition</i>	Example	Frequency	
		Mean	Std. Deviation
Feedback (explicit, positive) <i>Teacher comments positively on students' performance.</i>	"Well done."	21.72	11.973
Summarization <i>Teacher summarizes (parts of) the text.</i>	"This text is about a girl called Yolanda. She comes from a foreign country..."	10.36	18.350
Paraphrasing <i>To explain the meaning of an unknown word, the teacher paraphrases this word in English.</i>	"Drill is another word for exercise."	6.25	4.459
Reviewing the use of learning strategies <i>The teacher either a) explains a learning strategy, b) asks the students which strategy they use, or c) initiates students' reflection on their strategy use.*</i>	(a) "In a dictionary there can be different German translations for one English word."* (b) "Did you check this word in a dictionary or did you ask your partner?"* (c) "Why couldn't you guess the meaning of this word from the context?"*	5.71	4.017
Translation <i>The teacher translates an unknown word into German.</i>	"Drill means <i>Übung</i> ."	5.08	5.104
Reviewing way of problem-solving <i>Teacher initiates students' reflection on their way of solving a problem.*</i>	"How did you find out the meaning of this word?"*	5.06	4.167
Feedback (explicit, negative) <i>The teacher indicates students' errors explicitly.</i>	"This is not the correct meaning of mushroom."	4.29	3.190
Text-immanent elaboration <i>To explain the meaning of an unknown word, the teacher refers to information provided in the text.</i>	"Look, in this sentence the author explains what the students do during an air-raid drill."	3.86	9.344
Eliciting the cognitive strategy "discourse-level summarization"* <i>The teacher wants the students to summarize (parts of) the text.*</i>	"Could you please summarize this paragraph?"*	3.68	6.022
Feedback (implicit, negative) <i>The teacher indicates student' errors implicitly without correcting them.</i>	"You should look at your summary again."	3.62	2.841

* Teacher support actions that, according to our definition, are considered *adequate* as they *foster* self-regulated learning.

Table 4. Teacher support actions to disentangle the meaning of “air-raid drills” – transcript excerpt

Transcript	Trigger for teacher’s support action	Description of teacher’s support action	Potential effect of teacher’s support action on students’ actions
<p>Student 1: “What’s the meaning for air-raid drills?” Teacher: “Ok, do you have any idea? Are there any words you know already – any parts?” Student 1: “Notfalltraining, sowas in der Art?“ [Emergency drill, or something like that?]</p>	<p>Student is uncertain about the meaning of “air-raid drill.”</p>	<p>The teacher asks S1 whether he knows the meaning of parts of the word.</p>	<ul style="list-style-type: none"> - Student recognizes the unknown word as a compound. - Student identifies known lexical items, uses his foreign language (L2) knowledge and suggests a translation.
<p>Teacher: “Why do you think so?” Student 1: “Because they teach the pupils in school what to do when a nuclear bomb exploded.” Teacher: “Explodes, yes.”</p>	<p>Student’s translation is not accurate, but close to the meaning of “air-raid drill.”</p>	<p>The teacher asks how the student solved the vocabulary problem.</p>	<p>Student summarizes parts of the text to explain why he translated “air-raid drill” this way.</p>
<p>Student 1: “So it could be- an, yeah- an activity to teach them what to do then.” Teacher: “Mhh, exactly, that’s right. That’s what a drill is and what about an air-raid? Do you have an idea what an air-raid is?”</p>	<p>Student paraphrases the word “drill.”</p>	<p>Teacher gives explicit positive feedback and asks student what “air-raid” means.</p>	<p>Student translates “air-raid.”</p>
<p>Student 2: “Luftangriff.” [Air-raid.] Teacher: “Why do you think so?” Student 1: “Wegen air.” [Because of air.] Student 2: “Ja, Luft.” [Yes, air.]</p>	<p>Student translates “air-raid.”</p>	<p>Teacher asks student to describe how he solved this vocabulary question.</p>	<p>Student explains how he found the answer and translates “air” into German.</p>
<p>Teacher: “Yeah, exactly. And also because of the behavior as well, but well, you found the solution yourselves. Good.” Student 2: “Und was schreiben wir jetzt? Luftangriffs-training?” [And what will we write down now? Air-raid training?] Student 1: Ja. [Yes.]</p>	<p>Student only translates one part of the compound “air-raid.”</p>	<p>Teacher gives explicit positive feedback and summarizes the students’ answers and underlines that they have found the solution themselves.</p>	<p>Students discuss the correct translation of air-raid drills and write it down.</p>

Table 5. Teacher support actions to disentangle the meaning of “air-raid drills” – transcript excerpt 2

Transcript	Trigger for teacher’s support action	Description of teacher’s support action	Potential effect of teacher’s support action on students’ actions
<p>Student 1: “Wir sind uns nicht einig bei...” [We cannot agree on...] Teacher: “Which one?” Student 1: “Air-raid drill.” Student 2: “Luftangriffbohrer.” [= air-raid borer] Teacher: “Look. [points at dictionary]. Borer is only one definition. There is another one.”</p>	<p>Students are uncertain about the meaning of “air-raid drill.”</p>	<p>Teacher points out that a dictionary may contain different translations of a word.</p>	<p>Students may remember this advice if they use the bilingual dictionary later.</p>
<p>Teacher: “Drill. We have the same word, I mean training hard, practicing special things. Trainieren, exerzieren [To practice, to exercise]. So they practise how to behave, if there is an air-raid. You do not understand that? They have to, to get used to it how to behave in case of an air-raid. So, let’s say America is attacked and then they have to know what to do and they have to learn that, train that and that is an air-raid drill.” Student 2: “Drill, was ist das?” [Drill, what’s that?]</p>	<p>Students have chosen a translation from the dictionary that does not fit into the context.</p>	<ul style="list-style-type: none"> - Teacher explains that there is a similar word for drill in German. - Teacher summarizes parts of the text, paraphrases and translates the word drill. 	<ul style="list-style-type: none"> - Students may find the German word that is similar to the English counterpart. - Students may guess the meaning of drill from the teacher’s explanation.
<p>Teacher: “Got it? Sure?” Student 1: “Yes.” [nods] Student 1: [to Student 2] „Hast du verstanden, was gemeint ist.“ [Did you understand what is meant by that?] Student 2: „Auf alle Fälle was mit einem Atompilz.“ [Definitively something with a nuclear mushroom.] Student 1: [notes sth.] “Ok, wollen wir das jetzt erst weitermachen?” [Ok, shall we continue with this first?] Student 2: “OK.”</p>	<p>Students still seem to be uncertain about the meaning of “air-raid drill.”</p>	<ul style="list-style-type: none"> - Teacher asks the students whether they have understood her explanations. - The teacher leaves.. 	<p>Students indicate that they understand the meaning of air-raid drill; at the end of the excerpt it is obvious that this is not the case.</p>

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- i Full project title: „Fostering the situationally adequate use of learning strategies in self-regulated, text-based learning environments in the English as a Foreign Language (EFL) classroom“; principal investigators: Prof. Dr. Claudia Finkbeiner, University of Kassel (Germany), and Prof. Dr. Peter H. Ludwig, University of Koblenz-Landau (Germany). Funded by grants from the German Research Foundation (Deutsche Forschungsgemeinschaft – DFG; grant no. FI 684/13-1, FI 684/13-2)
- ii In most parts of Germany, secondary education is situated in a three-track system: The *Gymnasium* (classes 5 to 13) leads students to a diploma that allows them to study at universities. Students graduating from *Realschule* (classes 5 to 10) may, depending on their academic achievements, either start a job training including part-time enrolment in a vocational school or continue their education at a *Gymnasium*. Students graduating from *Hauptschule* (classes 5 to 9) may start a job training including part-time enrolment in a vocational school or continue their education at a *Realschule*.