The workings of multiple principles in student-teacher interactions: *Orientations to both mundane interaction and pedagogical context*

Mieke Breukelman [a,b], Myrte N. Gosen [a,*], Tom Koole [a,c], Janneke van de Pol [d]

[a] *University of Groningen, Center for Language and Cognition Groningen, The Netherlands*
[b] *Radboud University Nijmegen, Centre for Language Studies, The Netherlands*
[c] *Health Communication Research Unit, University of the Witwatersrand, Johannesburg, South Africa*
[d] *Utrecht University, Faculty of Social and Behavioural Sciences, The Netherlands*

A R T I C L E   I N F O

A B S T R A C T

In classroom interaction, participants are not only oriented to interactional principles for mundane talk, but also to pedagogical principles. In this paper, the interplay between these principles is revealed by means of a conversation analytic study into student-initiated student-teacher interactions during desk work in Dutch secondary schools. It is investigated from a participants' perspective how teachers depart from the mundane interactional constraints imposed by students' requests for assistance. The analysis shows that there are several ways teachers depart from these constraints and that teacher and students do not necessarily show an orientation to this departure as being problematic. Rather, the departure can be related to considerations concerning the pedagogical nature of these interactions. By studying the interactional departures from mundane principles, more insight is provided in the organization of classroom interactions that are started by students' requests for assistance.

1. Introduction

Every time a student makes a request for assistance, the teacher is faced with the dilemma of providing either high level or low level of regulation. On the one hand, teachers are generally in the position to provide the assistance requested by the student. After all, they have the knowledge and expertise that the students lack. On the other hand, teachers are trained to challenge students to think independently and to come up with solutions to their problems themselves to stimulate their agency (Vehvilainen, 2009) and autonomy (He, 1994; 1998, Waring et al., 2018). Thus, teachers are expected to support students to solve the problem themselves, often referred to as scaffolding (Wood et al., 1976). If every student request for assistance were immediately answered by the teacher, students would not be challenged to think for themselves. It appears that in the teacher's dilemma, both interactional and pedagogical systems are in play (cf. Koole & Elbers, 2014). From a mundane interactional view, a request seeks granting or acceptance of that request, preferably in the next turn and aligned with the constraints imposed by the (design) of the request (Curl & Drew, 2008; Heritage & Raymond, 2012; Sacks, 1987; Schegloff, 2007). From

a pedagogical perspective, however, it may not be desirable that requests are immediately granted. The question is how teachers and students deal with these mundane interactional principles in a pedagogical context. The aim of the present study is therefore to shed light on the interplay between mundane interactional and pedagogical principles. This will be done by a close conversation analytic investigation of students' initial requests for assistance and teachers' responses to these. Such a detailed turn-by-turn analysis adds to our understanding of the organization of student-initiated classroom interactions. In addition, this study contributes to our knowledge on scaffolding by approaching this pedagogical dilemma from a participants' perspective. The study is centered around student-initiated sequences between a teacher and a single student during desk work in Dutch secondary schools.

2. Background

The aim of research on social interaction using Conversation Analysis (CA) is to uncover and describe the underlying structural organization of talk (Sidnell, 2010). In this line of research, a contrast has been and should be made between mundane conversation and institutional talk, i.e. social interaction in specialized settings such as news interviews, law courts or classroom interaction (cf. Heritage & Clayman, 2010). Different settings show different interactional principles, such as different turn-taking systems

* Corresponding author.
E-mail address: m.n.gosen@rug.nl (M.N. Gosen).

or different interactional practices for structuring participation (cf. Heritage & Clayman, 2010). More insight into the organization of student-teacher interactions therefore requires an exploration of similarities and differences between talk in this pedagogical setting and mundane conversation. Hence, the current study analyzes the interactional organization of student-initiated student-teacher interactions in relation to the interactional principles that govern mundane talk. Specifically, the analysis focuses on the way in which teachers and students depart from the mundane interactional constraints that are imposed by students' requests for assistance. For this, the conversation analytic notions of *sequence organization* and *preference organization* are used. Additionally, the educational notion of *scaffolding* is considered to seek explanations for the presumably setting-specific deviations from general interactional principles. But first, we will discuss existing research on student-teacher interactions initiated by students' requests for assistance.

2.1. Student-teacher interactions initiated by requests for assistance

Generally, studies of classroom interactions have focused on talk initiated by the teacher (e.g. Cazden, 2001; Garton, 2012; McHoul, 1978; Mehan, 1979). More recently, however, there is an increasing research attention for interactions in which students take the initiative (e.g. Batlle Rodriguez & Murillo Wilstermann, 2018; Creider, 2020; Dolce & Van Compernolle, 2020; Duran & Sert, 2021; Jacknick, 2011; Kardas Isler et al., 2019; Merke, 2018; Solem, 2016; Van Balen et al., 2022; Waring, 2011). These studies mostly focus on how the (participation in) interaction changes when a student initiates a sequence and how this offers opportunities for learning. Often, these student-initiations take place in a whole-classroom setting in which student initiatives are done by one student in the presence of classmates. Other studies investigate student-initiated advice sequences in academic one-to-one supervision (Vehvilainen, 2009) or students seeking help in one-to-one interactions in mathematics classes (Koole, 2010, 2012; Svahn & Melander, 2021).

Help-seeking is considered to be an important learning skill enabling learners to learn independently on future occasions (e.g. Newman, 2002). However, as Svahn & Melander (2021) stress: 'little is still known about how help-seeking is accomplished interactionally' (p. 193). Their study on help-seeking during homework support illustrates that it is worthwhile to investigate for instance how a student's problem is interactionally established. Similarly, Koole (2012) showed that to establish a student's problem takes interactional effort, since 'students who ask their teacher for help with a learning problem are faced with the epistemic paradox of having to 'know what you don't know' or 'understand what you don't understand'' (p. 1902). Both of the aforementioned studies show an interest in epistemics as it is displayed in these one-to-one help-seeking interactions. Help-seeking in itself establishes a context in which 'the person doing the request for help is positioned as unknowing and the presumptive helper as knowing' (Svahn & Melander, 2021: 196). Nevertheless, these interactions are not only of interest in relation to knowledge, but also in relation to student's learning and the accompanying aspects such as agency and autonomy.

Therefore, teachers when requested for assistance, are faced with the dilemma that was introduced above: although they are generally in the position to provide the assistance requested by the student on the basis of their knowledge and expertise, their goals are related to getting their students to learn to think independently and to come up with solutions to their problems themselves. Therefore, when a student requests assistance, the teacher not always immediately grants this.

How teachers respond to students' requests for assistance has been investigated before by for instance Markee (1995) and Koole (2012). However, both these studies focused on a specific type of request for assistance. Markee (1995) specifically focused on requests for help concerning unknown vocabulary, where Koole (2012) mainly concentrated on initiatives with localizations of the problem ('I don't understand this one'). The current study takes a more general perspective on requests for assistance by including in the analysis every student request that makes relevant some type of assistance. That is, students can for instance request *information, confirmation* or *evaluation*; for the purpose of this study, all these requests are taken to be requests of assistance. The analysis focuses on those moments at which teachers depart from the mundane interactional constraints imposed by students' requests for assistance. These deviations are of interest in relation to mundane interactional principles, where a preference was established for an immediate granting of a request along the lines of the format of that particular request, as well as in relation to pedagogical principles (and learning) that could explain why these deviations take place.

2.2. Mundane interactional principles: Sequence and preference organization

By requesting assistance, a student launches an interactional project in which several normative systems are in play. At the interactional level, these normative systems take the form of constraints imposed by students' requests. These constraints arise from the sequence organization of interaction and the accompanying preference organization (Schegloff, 2007). Firstly, by making a request for assistance, a student launches the first pair part (FPP) of a *sequence* which makes relevant the production of an appropriate response, i.e. a *second pair part (SPP)* (Schegloff, 2007). Secondly, particular responses are shown to be interactionally 'preferred' over other responses.

Making a request in the FPP may be the start of different sorts of sequences depending on the action framed by the request. For this paper, we have taken a perspective on requests as for instance formulated by Couper-Kuhlen (2014). She describes requests as 'directive-commissive actions that frame a future action or activity as something to be performed by the recipient in the interest of the speaker' (p. 631). In the case of the students' requests in this data set, students request the recipient's assistance, which can take the form of information, assessment, confirmation, instruction, etc. In all cases, the SPP following a request may either be a granting or a denying of the request. More in particular, the granting or rejection may be performed by either giving the requested assistance/information or not.

Preference organization covers different preference principles. First of all, action-based preference refers to the fact that certain actions prefer certain actions as responses (Schegloff, 2007). In general, granting or accepting responses to sequences initiated by requests are oriented to as preferred over rejecting responses (Curl & Drew, 2006). With regard to requests for information in particular, providing information is oriented to as preferred over non-answers such as silences or 'I don't know' responses (Stivers & Robinson, 2006). This action-based preference relates to a more general preference for *progressivity* that is concerned with the preference for progress in interaction (Stivers & Robinson, 2006). That is, preferred actions are generally those that optimally, i.e. quickly and efficiently, allow for sequence closure, and thus for progress in interaction.

Design-based preference, on the other hand, refers to the formal constraints certain utterances impose on their responses. Requests in the form of yes/no questions, for instance, prefer either a 'yes' or a 'no', depending on the polarity of the de-

sign (Sacks, 1987). That is, where the design of the question 'Are you married?' prefers a yes-response, the question with reversed polarity 'Are you not married?' prefers a no-response (cf. Heritage & Clayman, 2010). In relation to this, there is preference for a response that conforms to the formal constraints put forward by a FPP. This preference for type-conformity (see Raymond, 2003; Schegloff, 2007; Sidnell, 2010) has originally been described for yes/no interrogatives (Raymond, 2003) but has been extended to yes/no declaratives (see Raymond, 2010; Seuren & Huiskes, 2017) and to alternative questions and content questions (cf. Hayano, 2012; Koole & Verberg, 2017; Schegloff & Lerner, 2009).

It is important to note that preference principles refer to structural normative orientations to social interaction, not to individual or psychological preferences (Heritage, 1984; Schegloff, 2007). Participants in interaction are seen to routinely design their turns-at-talk *as* preferred or dispreferred alternatives (Sidnell, 2010). That is, preferred and dispreferred responses are formed by different practices. Preferred responses are typically produced in the next turn and without delay and qualification, i.e. short and to the point (Heritage, 1984; Sacks, 1987; Schegloff, 2007). Dispreferred responses, on the other hand, are usually marked by features typically associated with dispreferred utterances. These features include delay (e.g. a gap between FPP and SPP), mitigation (e.g. declining an invitation by saying 'I probably won't be able to come' instead of a non-mitigated 'No') and elaboration (e.g. giving accounts, excuses, disclaimers or hedges) (Heritage, 1984; Schegloff, 2007).

Studying responses to FPPs with an interest in sequence organization and preference organization in particular is not new for ordinary conversations (e.g. Enfield et al, 2010; Fox & Thompson, 2010; Schegloff & Lerner, 2009; Stivers & Hayashi, 2010). Studying deviating responses to requests for information in institutional interaction, such as news interviews or courtroom examinations, has also received attention. While mundane interactional norms remain salient in these institutional settings, resistance to these norms can be analyzed as accomplishing certain setting-specific goals, for instance by resisting the terms of interviewers' questions to prioritize one's own agenda or to avoid (dis)conforming a particular description (e.g. Clayman, 2001; Clayman & Heritage, 2002; Drew, 1992; Ehrlich & Sidnell, 2006). The study of Waring et al. (2018) is another example highlighting the relevance of studying responses to requests for information in an institutional setting. This study revealed closer insight into the particularities of the institutional context of webinars by showing how deviating responses can manage seemingly contrastive institutional demands. The current study adds to this line of research on (deviating) responses to requests in an institutional context by focusing on deviations from the preference organization induced by requests for assistance in the context of classroom interactions. This has, to our knowledge, not been investigated yet. This is surprising, since knowledge and learning and the accompanying pedagogical principles can become visible when examining the interactional details of requests for assistance and their (deviating) responses.

2.3. Pedagogical principle: Scaffolding

As mentioned, principles in relation to learning, agency and autonomy play a role in the dilemma teachers are confronted with when a student makes a request for assistance. This can be said to be related to the pedagogical concept of *scaffolding* (cf. Van de Pol et al., 2010). Scaffolding in classroom settings means that the teacher's support is shaped in such a way that it enables students to perform a task that they could not do without this support (Wood et al., 1976). Wood et al. (1976) introduced *scaffolding* as

essentially consisting of a tutor "'controlling' those elements of the task that are initially beyond the learner's capacity, thus permitting him to concentrate upon and complete only those elements that are within his range of competence" (p. 90). By means of an analysis of tutor-child interaction, Wood et al. (1976) arrived at a list of 'scaffolding functions', including *reducing the degrees of freedom,* i.e. guiding a child by reducing the alternative next steps, and *marking critical features,* i.e. marking the discrepancy between a child's understanding and correct performance.

More recently, by means of a review, Van de Pol et al. (2010) distinguished three key characteristics of scaffolding: *contingency, fading* and *transfer of responsibility*. The first characteristic, *contingency*, denotes the adaptive nature of scaffolding: the teacher's support should be adapted to the current level of the student's performance (Van de Pol et al., 2010). The second characteristic, *fading,* means that the teacher's support gradually decreases. The third and final characteristic, *transfer of responsibility*, means that the responsibility for the task at hand is transferred to the student.

Contingency is considered the most important feature of scaffolding. Support that is contingent is adapted to the student's demonstrated understanding in interaction, which makes contingency, and scaffolding in general, not only an instructional, but also an *interactional* phenomenon (Koole & Elbers, 2014). The review by Van de Pol et al. (2010) shows, however, that in most research, scaffolding is looked at as a teacher strategy rather than as an interactional notion that concerns both teachers and students. Therefore, Van de Pol et al. (2012), subsequently followed by other educational researchers such as Hermkes et al. (2019), introduced contingency frameworks that do take into account the interactional nature of the concept, e.g. the 'Model of Contingent Teaching' and the 'Contingent Shift Framework'. These contingency frameworks pay attention to the interactional interplay between students' contributions and teachers' instructions. However, the interactional aspect of contingency is still mainly characterized by *general* phases and rules of contingent student-teacher encounters, such as 'applying diagnostic strategies' or 'adjusting support to students' responses and understanding' (Van de Pol et al., 2012). These phases and rules can be said to be identified by the analyst rather than to be oriented to by the participants in interaction.

Conversation Analysis adds another layer to these approaches by taking into account the *local,* i.e. turn-by-turn, organization of interaction from a participants' perspective. Koole and Elbers (2014) have already taken this approach in their study of contingency ('responsiveness'), in which they described how teachers respond contingently or non-contingently to students' displays of (not-)understanding. Contingency was operationalized by analyzing "in what ways the teacher's support is responsive to the performance level students have made observable in the preceding interaction" (Koole & Elbers, 2014, p. 60). In this way, Koole and Elbers (2014) focused on the perspectives of the *participants* themselves, as they demonstrated these to each other turn-by-turn, thereby providing an empirical basis to the notion of contingency. This approach will also be beneficial for the current study of mundane interactional and pedagogical principles.

All in all, both the pedagogical frameworks of Van de Pol et al. (2012) and Hermkes et al. (2018) as well as the interactional analysis of responsiveness of Koole and Elbers (2014) represent steps forward in approaching scaffolding as an interactional phenomenon. The current study will add to this approach by considering the interactional deviation of teachers' responses to students' initial requests for assistance, employing the *sequence* and *preference* principles described above. Koole and Elbers (2014) did already briefly touch on the fact that "responses may be designed to align more or less with the constraints established by the utterance to which they respond" (p. 60). A more detailed analysis

of such constraints and the subsequent responses will reveal the setting-specific way in which interactional principles are deviated from in student-initiated student-teacher interactions. To provide possible explanations for these deviations, they will be related to the pedagogical principles sketched above.

3. Data and method

The data used in this analysis are part of a larger data set that was collected in the context of a project on classroom interaction of Mainhard, Poorthuis and Van de Pol. The data were collected in 2013 and were recorded at four lower secondary prevocational education schools in the Netherlands. The data set used for the current analysis consists of anonymized video recordings of student-teacher interactions in mathematic lessons. Students (aged 11, 12 or 13) are independently working on mathematical tasks by themselves and the teacher interacts with them when help is needed (either while walking around or by having a student coming to their desk). The interactions that are central to this paper are all initiated by a student's request for assistance. Every interaction was recorded from two camera angles. If an encounter between a teacher and a student did not contain a request initiated by the student, or if the student's request or the teacher's response was not audible, the recording was excluded from the data set. Eventually, 105 student-teacher encounters remained. The collection for this study (cf. Gosen & Koole, 2017) is constituted by 35 interactions with a deviation in terms of preference in the response to the request for assistance. The requests in our data were either requests for assistance or, more specifically, requests for information. These requests were designed as explicit requests or as reports of needs, difficulties, or troubles (Kendrick & Drew, 2016). The explicit requests take the form of content questions or polar questions. With polar questions, we refer to both yes/no declaratives and yes/no interrogatives, in spite of several differences between these two types (cf. Heritage & Raymond, 2012; Seuren & Huiskes, 2017). The deviating responses were either nonconforming or dispreferred in terms of the polarity of the design.

All interactions in the collection are transcribed according to the conventions developed by Gail Jefferson (Jefferson, 2004; Hepburn & Bolden, 2017). The duration of the encounters in the collection varies from 0:12 minutes to 4:38 minutes. For every interaction, the main focus of analysis was on the initial request for assistance, the teacher's response and the student's reaction to this (or the absence of one). For all encounters in the collection, the sequence-initiating turns are analyzed with regard to interactional constraints. In addition, it is examined how resisting these constraints is treated by the participants in the subsequent interaction. In all cases, it is explored how the observed courses of interaction could be related to setting-specific, i.e. pedagogical, principles, thereby uncovering the interplay between mundane interactional and pedagogical principles in student-teacher interactions.

This study is a conversation analytic (CA) study. CA provides us with the required theoretical notions, i.e. sequence organization and preference principles that are employed to study the interactional norms in student-teacher interactions. Moreover, CA provides an important supplement to the research methods from the educational field that are usually used to study scaffolding and contingency. Studies in educational science are mainly done by coding classroom interactions using a top-down approach, i.e. the categories are determined before conducting the data analysis (cf. Van de Pol et al., 2012). In addition, the encodings and conclusions in educational studies are usually done over multiple interactions at once and are therefore rather global. CA, on the other hand, is a bottom-up approach that starts from the data (cf. Seedhouse, 2005). CA therefore enables us to get a more detailed picture of how student-teacher interactions are *locally* or-

ganized turn-by-turn (cf. Schegloff, 2007). Moreover, in CA, analyses are based on participants' orientations as displayed in the interaction, rather than on potential researcher's interpretations in determined coding categories. This enables researchers of educational interaction to "move beyond their preconceptions" (Gosen & Koole, 2017, p. 807). While educational methods may provide pedagogically valuable results, CA adds a more detailed description of practices in student-teacher interaction, thereby uncovering more details in relation to contingency, as well as to the organization of classroom interaction in general.

4. Analysis

The analysis of the collection of 35 student-teacher interactions shows instances in which the teacher resists some or all constraints posed by the students' request. The results will be structured by means of the notions of preference: first, interactions with *dispreferred responses in terms of polarity design* to requests designed as polar questions are discussed, followed by a discussion of interactions with different sorts of *nonconforming responses* to differently designed students' requests. But before presenting our analyses of teachers resisting mundane interactional principles, an extract is shown in which these principles are not resisted, i.e. where the teacher provides a preferred type-conforming response. This extract is thus not part of the current collection, but illustrates preference principles in relation to requests for assistance and helps understand the deviations that are introduced later in the analyses.

Extract 1 shows an example of a student-teacher interaction in which a student's request for information immediately receives a type-conforming response. In line 1, the student asks the polar question whether for assignment eleven, a coordinate system needs to be made. This question is confirmed by the teacher with a preferred type-conforming response in line 3.

Extract 1
Polar question with type-conforming response (3751).

```
1.  →  S1:  moet je bij elf een assenstelsel maken?
            do you have to make a coordinate system
            for assignment eleven?
2.            (0.8)
3.  →  T:   ja.
            yes.
4.            (0.8)
5.          en hoe groot moet ie ongeveer zijn denk je
            dat assenstelsel
            and how big do you think that coordinate
            systems approximately has to be
6.          als je hier die nu:mmertjes bekijkt,
            if you look at those little numbers here,
7.            (.)
8.    S1:   ik gok tot en met tien? (.) zoiets?
            I guess up to ten? (.) something like
            that?
```

The student's request for information is a yes/no interrogative, which makes the preferred type-conforming answer a yes/no-answer. In terms of design-based preference, the positive design of the interrogative steers towards a 'yes'. In line 3, the teacher conforms to this preference by producing a yes-answer. With this answer, she confirms the student's hypothesis. In principle, the interaction could be considered completed at this point: the question's constraints are met, and the student's hypothesis has been confirmed. However, in the data participants generally do not treat the interaction as completed once a preferred type-conforming response is delivered. In Extract 1 in lines 5-6 for instance, the teacher asks a follow-up question herself. She presents this question as related to the previous sequence by using the conjunction 'and' (l. 5) (cf. Matsumoto, 1999). In line 8, the student goes

along with the teacher's initiated new sequence by answering the teacher's question. Thus, although the response provided by the teacher can be said to be preferred and type-conforming, the preference for actions that allow for sequence closure and therefore for progress in interaction (preference for progressivity; Stivers & Robinson, 2006) is not observed. After most type-conforming responses in our data set, the teacher initiates a new action after granting the initial request, such as providing an additional explanation or asking the student a question such as in Extract 1.

It is here that we should already start considering participants' orientations to interactional principles incited by the pedagogical context. It is plausible, after all, that the teacher's continuation in lines 5-6 is motivated by pedagogical rather than mundane interactional principles. The specific action that the teacher in Extract 1 performs after his type-conforming response is a typical instance of a 'known information' question (Mehan, 1979), which is a practice specific for classroom discourse. The question makes an answer of the student conditionally relevant and in order to provide this answer, the student needs to actively think about the coordinate system of which he just heard that he must draw it. This way, the teacher challenges the student to think about the following step himself. Moreover, the teacher's question in lines 5-6 could be considered a 'reduction in degrees of freedom' (Wood et al., 1976). The teacher asks the student about a specific next step, with which she reduces the number of alternative next steps and thereby guides the student in a particular direction. The teacher's question could therefore be assumed to be based on pedagogical considerations rather than on mundane interactional ones. The student, moreover, accepts the teacher's newly initiated sequence, as he does not resist the teacher's question, but rather answers it in line 8. This indicates that the teacher's orientation to interactional principles incited by the pedagogical context in addition to mundane interactional ones is shared by the student.

This extract served as a means to illustrate preference principles in relation to students' requests for assistance and to assist the reader in understanding the deviations that are introduced below. At the same time, it shows that even the interactions that are outside the direct scope of this paper are of interest in relation to the more general preference principle of progressivity. In addition, this deviance from the preference principle of progressivity seems to be related to pedagogical principles: rather than closing a sequence after a response, students and teachers engage in sequence-expanding actions that are assumably pedagogically motivated This will also be observed in the following analyses that represent our collection of deviating responses in particular.

4.1. Type-conforming responses that are dispreferred in terms of polarity

In the collection, there are six student-teacher interactions starting with a polar question that get a type-conforming response that is dispreferred in terms of polarity design. Comparable to Extract 1, these are cases in which students check their understanding by posing a yes/no interrogative or yes/no declarative. These candidate understandings are designed with positive polarity steering towards a positive yes-response. In these six cases, the teacher resists this design-based preference by giving a negative response, while still providing a type-conforming answer (as it is still a yes/no-answer to a yes/no-question). The student's candidate understanding thus does not seem to be correct. In all the cases, the interaction is not over after this response. Teachers provide the students with further explanations and students regularly ask additional questions or at first show some resistance to the teacher's response. An example of resistance can be seen in Extract 2. In line

Extract 2
Polar question with type-conforming response dispreferred in terms of design (2888).

```
 1.   →   S1:   moet je hier zelf iets verzinnen ofzo?
                should you here devise something yourself or
                something?
 2.             (0.9)
 3.   →   T:    neu:j nee
                no: no
 4.       S1:   jawel
                yes you do
 5.       T:    nee: niet zelf iets verzinnen
                no not devise something yourself
 6.       S1:   [nee maar wel-
                [no but you do-
 7.       T:    [je hebt hier (.) die formule die moet daar
                in
                [here you have (.) that formula that must be
                put in there
 8.             (1.4)
 9.       S1:   ja
                yes
10.             (1.3)
11.       T:    dus wat is de bewerking? (.) dat is de
                eerste vraag,
                so what is the operation? (.) that is the
                first question,
12.             (0.5)
13.             nou dat is niet zo moeilijk dat is
                [natuurlijk]
                well that's not that difficult that's [of
                course]
14.       S1:                 [drie keer] dertig invullen
                              [three times] thirty enter
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1, the student asks whether he 'should devise something himself' for the assignment he is working on (i.e. 'here').

The student's request takes the form of a polar question, which makes relevant a yes/no-answer as a type-conforming answer, again steering towards a positive response because of the design. In line 3, the teacher provides a no-answer, which here is a dispreferred type-conforming answer. In line 2, there is a rather long pause, potentially foreshadowing dispreference. In some other instances we also see some orientation to dispreference, for instance when a teacher starts his dispreferred response with 'uh'. In line 4 of this extract, the student does not accept the teacher's response straight away. Instead, he explicitly objects to the no-answer by saying 'yes you do'. The teacher then repeats his type-conforming response in line 5, to which the student again starts to object in line 6 in post-expansion (Jacknick, 2011). In overlap with the student's objection, however, the teacher starts to explain the assignment. It is at this point that the student stops objecting to the teacher's responses by saying 'yes' in line 9. The teacher then proceeds his explanation by posing a question that needs an answer in order to complete the task (l. 11). In line 14, the student finishes the teacher's utterance by answering the question. With this, he shows acceptance of the teacher's uptake of his initial question.

Of course, lines 3-6 could simply be interpreted as a divergence of views between the teacher and student. However, it is notable that this divergence seems to disappear as soon as the teacher starts to explain the task at hand. This explanation, moreover, can again be seen as a practice that is typical for the institutional role of teachers in classroom discourse (cf Koole, 2012). With his explanation, the teacher again reduces the degrees of freedom by explaining the next step in the mathematical task. The student also seems to be oriented to pedagogical principles when he treats the teacher's explanation as a satisfactory response. All in all, dispreferred responses in terms of polarity design seem to work as a correction of a student's incorrect understanding as displayed in the

student's request, and are often followed by further explanation guiding the student's understanding in the right direction. This is, as in Extract 1, often done by asking 'known information' questions challenging the student to think about the following step without having to oversee the entire assignment at once.

4.2. Nonconforming responses

It appears that, besides resisting design-based preference, teachers have two additional practices at their disposal to not conform to the formal constraints of a student's request. They can either (i) give a nonconforming answer, or (ii) refrain from granting the request for assistance by delivering a first pair part themselves. These different practices represent a difference in terms of action-based preference. With 'nonconforming *answers'*, we refer to teachers' responses that provide the requested assistance/information, and thus conform to the action-based preference of a student's request, but that do not conform to the formal constraints imposed by the question. The other teacher practice concerns instances in which a teacher resists both the type-conformity and the action-based preference by initiating a new sequence in a position in which a response was conditionally relevant.

4.2.1. Nonconforming answers

The collection contains 7 interactions in which a student's request is followed by a nonconforming answer. Teachers either contest a proposition that is posed by a student's request (4 interactions) or do an evaluation of the student's work that is elicited by a student's request for assistance (3 interactions). Examples of both of these forms of noncomforming answers will be shown below. Extract 3 shows an example of a polar question with a nonconforming answer contesting the proposition of the student's request. In line 1, the student indicates in her textbook the notion 'y-intercept'. After this, she poses a polar question by which she presents a hypothesis of what she thinks the term stands for (l. 1-2).

Extract 3
Polar question with nonconforming answer contesting a proposition (1077).

1.	→	S1:	hierzo staat het begingetal (.) maar bedoelen ze dan die
			here it says the y-intercept (.) but do they then mean that
2.			(euro:tekening?)
			(euro: drawing?)
3.	→	T:	het begingetal is eigenlijk altijd
			the y-intercept is actually always
4.			(0.4)
5.			hoeveel je moet betalen als je der <u>nul</u> neemt
			how much you have to pay when you take <u>zero</u>
6.			(0.8)
7.			dus als je <u>nul</u> invult
			thus when you fill in <u>zero</u>
8.		S1:	oke
			okay
9.		T:	dus hoeveel is dat bij dees?
			so how much is that for this one?

The form that the student's request has is a yes/no interrogative, which makes a yes/no-answer the preferred type-conforming response. Furthermore, the student's interrogative shows that the student does not know what a 'y-intercept' is (and that she supposes it is the 'euro drawing'). In lines 3-7, the teacher responds, but not with a yes/no-answer. He thus does not conform to the type-conformity constraints that were put forward by the student's request. He does, however, conform to the action-based preference of the request for information by giving a transformative answer

(Stivers & Hayashi, 2010) that disproves the proposition of the student and provides the student with the information she observably searched for. The student remains silent in line 6, but after the extra turn-constructional unit in line 7, the student accepts the teacher's answer in line 8 by producing 'okay'. In line 9, the teacher starts a new sequence by asking a known-information question: 'so how much is that for this one?'. This question serves the purpose of inciting the student to apply the general knowledge about the y-intercept to a specific situation ('for this one'). The relation between the previous and this new sequence is indicated by the conjunction 'so'.

What is also interesting here, is that both the student and the teacher do not treat the teacher's nonconforming answer as a dispreferred response, which is different from what is usually seen in mundane interaction (Raymond, 2003). Firstly, the teacher's response does not contain any features that are typically associated with dispreferred answers, such as delay, mitigation or elaboration (Schegloff, 2007). Rather, the teacher's response follows the student's request for information immediately, without hesitation, which is typical of *preferred* responses. Furthermore, with 'okay' the student also treats the response as preferred. The nonconforming answer does not result in further expansion, disruption or modification as Raymond (2003) saw for nonconforming answers as opposed to type-conforming ones.

Raymond (2003) also argues that nonconforming answers are only produced "for cause". In mundane conversation, nonconforming answers indicate a problem with the request for information (cf. Stivers & Hayashi, 2010); they treat the response options made relevant by the request as inadequate (Raymond, 2003). This analysis could account for nonconforming answers in student-teacher interactions as well. In Extract 3, for instance, a yes-answer would mean confirming an incorrect hypothesis advanced by a polar question (Bolinger, 1978) or confirming an incorrect "candidate proposition concerning a particular state of affairs" (Heritage & Raymond, 2012: 179; Pomerantz, 1988). Although a no-answer would in principle still be an option, the teacher treats a no-answer as inadequate by providing a nonconforming answer instead. This may be motivated by pedagogical considerations. For example, by avoiding a no-answer and instead immediately providing correct information, as the teacher does in Extract 3, the focus directly shifts to what the student should (already) know in order to accomplish the task. This could be considered as an example of 'marking critical features', one of the scaffolding features identified by Wood et al. (1976): "A tutor (...) provides information about the discrepancy between what a child has produced and what he would recognize as a correct production." Moreover, the teacher's nonconforming answer could again be seen as 'reducing the degrees of freedom' (Wood et al., 1976) as it directly guides the student in a particular direction by disregarding alternative next steps. The new sequence initiated by the teacher in line 9 also underlines this guidance in the right direction.

Providing a nonconforming answer to a request for information could in some cases thus be interpreted as a pedagogical interactional practice to reject an incorrect advanced candidate proposition. In other cases, however, it seems that teachers' nonconforming answers function to *postpone* the affirmation or rejection of a proposition. In these cases, the student in particular requests an evaluation of their work so far by means of a polar interrogative. In response to these requests, the teacher delivers a nonconforming answer but does evaluate the work of the student. Extract 4 shows an example of this. In line 1, the student makes a request for evaluation by asking 'is this correct?'. The candidate proposition here is that the student's work has been done correctly, and the teacher is asked to either affirm or reject this.

Extract 4
Polar question with nonconforming answer providing an evaluation (2975).

```
1.  →  S1:  is dit goed?
             is this correct?
2.          (2.1) ((teacher starts looking into
             student's notebook))
3.  →  T:   eh: a dr in
             uh: a in it
4.          (0.6)
5.          keer een halfie
             times a half
6.          (0.4)
7.          effe kijken waar je zit nu
             just looking where you are now
8.          (0.8)
9.          ah bij deze ja
             ah at this one yeah
10.         (0.7)
11.         dan doe je er vijf bij en d- dat levert
             het bedrag op
             then you add five and th- that gives the
             sum
12.         (0.2)
13.         en als je het bedrag al weet dan doe je t
             min vijf gedeeld door
             and if you already know the sum you do it
             minus five divided by
14.         een half is a das perfect he
             a half is a that's perfect eh
15.         (0.8)
16.         en hier krijg je natuurlijk eh nu heb je
             een getal bij dees dus
             and here you of course get uh now you have
             a number at this one thus
17.         (0.8)
18.         dus nu komt hier een eh tussenantwoord uit
             thus now this gives a uh intermediate
             answer
19.         (2.5) ((teacher coughs))
20.    S1:  dus dan (doe je) vijf (        )
             thus then (you do) five (        )
```

The student's request in line 1 has the form of a yes/no interrogative, which again makes a yes/no-answer the preferred type-conforming answer. In line 2, the teacher starts to look into the student's notebook (see Svahn & Melander (2021) for a close investigation of the role text books play as multimodal resources). After a silence of 2.1 seconds in which he continues to look into the notebook, the teacher starts to read and evaluate the student's work. In line 14, the teacher explicitly puts his eventual evaluation into words: 'that's perfect'. This evaluation (that shows features of an upgraded assessment (Pomerantz, 1984)) and the turns around it do not constitute a type-conforming answer to the student's yes/no interrogative. However, the teacher's response does provide the evaluation which the student requested, thus conforming to the question's action-based preference.

Again, with his nonconforming answer, the teacher treats both type-conforming response options, i.e. a yes-answer or a no-answer, as inadequate. In this case, however, the nonconforming answer does not seem to constitute a pedagogical practice to challenge the student's advanced proposition. Rather, it seems to be a device that *postpones* the eventual answer. This comes close to what may be done in an insertion sequence (Schegloff, 2007), in which the teacher might ask for more information before answering the initial request. However, the information needed for the evaluation lies within the notebook instead of in an answer to an insertion-initiation. After all, in order to give that answer, i.e. in order to decide whether the advanced proposition should be affirmed or rejected, the teacher needs to know whether 'this' (l. 1) is correct. For this, he first needs to read and evaluate the student's work. In this case, the *answer*, i.e. that 'this' is 'correct', automati-

cally becomes clear during the teacher's reading and evaluating (l. 14).

In Extract 4, the student again does not treat the teacher's response as a dispreferred response, possibly since the request for assistance receives the preferred action. Firstly, he does not interrupt the teacher's talk in lines 3-16. Moreover, when the teacher starts to explain the next step in lines 16-18, by which he closes his evaluation sequence, the student goes along with this. In line 20, he starts to apply the teacher's explanation and relates this to the explanation with 'thus'. The teacher's response, however, does show delay as a feature of a dispreferred responses: a silence of 2.1 seconds in line 2 and 'uh' in line 3. The nonconforming answer does not prompt an expansion, disruption or modification such as Raymond (2003) found for nonconforming answers in mundane conversation. Moreover, the delay may in this case actually mark the teacher's 'reading and evaluating' process that inevitably precedes the eventual evaluation.

All in all, the 7 encounters with nonconforming answers again show that the interactional principles participants in student-teacher interaction orient to are derived from both mundane interaction and from the pedagogical context. Firstly, it appears that also after nonconforming answers that in principle conform to the action-based preference by providing the requested assistance, interactions are not necessarily treated as complete. Just as we saw for type-conforming answers, teachers initiate new setting-specific actions like explaining or asking 'known information' questions after answering students' initial requests (see the teacher's question in line 9 of Extract 3 and the teacher's explanation in lines 16-18 of Extract 4). These actions could again be interpreted as possible features of scaffolding, as they reduce the degrees of freedom and thereby guide the student in a particular direction (Wood et al., 1976).

Furthermore, the studied interactions have shown that teachers provide nonconforming answers either to deal with a student's incorrect hypothesis in a pedagogical manner, or to postpone an answer due to the evaluation process that necessarily precedes the eventual answer. Nonconforming answers thus indeed seem to be produced 'for cause' (Raymond, 2003), just as in mundane conversation. In this context, however, this 'cause' seems to concern setting-specific, i.e. pedagogical, considerations.

These pedagogical considerations may also explain the fact that teachers' nonconforming answers are not necessarily designed and treated as dispreferred responses by the participants. Apparently, there are setting-specific principles to which students and teachers orient that let them treat nonconforming answers as preferred ones.

4.2.2. Nonconforming responses initiating a new sequence
The second possible nonconforming response that teachers deploy after a student's initial request for assistance, is not giving an answer, but instead initiating a new action in a new sequence themselves. The current collection contains 22 interactions in which this occurs. There appear to be three different actions a teacher may perform in response to a student's initial request (that is, besides providing an answer): doing repair, initiating a new sequence that invites the student in an explanation activity leading towards the requested assistance, or initiating an explanation sequence while moving away from the requested assistance.

In 5 student-teacher interactions in the data set, teachers are found to initiate repair instead of providing the student with a type-conforming response to their request for assistance. Although these repair sequences can be described as insert sequences (Schegloff, 2007) eventually leading to a preferred response in the base pair's second pair part, we consider these here as nonconforming because teachers do not immediately give a preferred response.

An example of repair can be seen in Extract 5. The student reports a difficulty (Kendrick & Drew, 2016) in the form of a declarative claim of not-knowing in lines 1-2: 'I still don't know what you eh place in that eh calculation scheme'. This claim makes a response of the teacher relevant in which it would become clear 'what' the student should place in the scheme. However, the teacher initiates a new sequence in line 3.

Extract 5
Claim of not-knowing followed by a repair initiation (2959).

1.	S1:	kijk wat hier zo staat da zou ik wel snappen maar ik weenie nog *look what it says here I would understand but I dunno*
2.		steeds nie wat je nou in die ehh rekenschema zet *still not what you place in that ehh calculation scheme*
3. →	T:	wat je waar moet invullen zeg maar= *do you mean what you have to fill in where=*
4.	S1:	=ja *=yes*
5.	T:	het rekenschema is gewoon wat je in je hoofd eigenlijk doet *the calculation scheme is just what you do in your head actually*
6.		als je het uitrekent dat is het rekenschema *when you do the calculation that is the calculation scheme*
7.		dus als ik tegen jou zeg van ehhh de breedte is tien *so when I say to you ehh the width is ten*
8.	S1:	ja *yes*
9.	T:	nou dan ga je in je hoofd zitten uitrekenen wat doe je dan, *well then you go and calculate in your mind what is it you do,*
10.		denk es hard↑op *think out ↑loud*

Instead of providing a type-conforming 'what' response granting the assistance that is requested, the teacher does an other-initiation of repair by means of an understanding check (Schegloff et al, 1977). The teacher formulates his interpretation of the request for assistance and checks this with the student. In line 4, this understanding is confirmed by the student. In lines 5-6, the teacher delivers the assistance in the form of a type-conforming 'what' response defining the calculation scheme. It seems that the teacher at first was lacking the information needed to give assistance. Koole (2012) and Koole and Elbers (2014) showed that teachers often start an explanation based on a problem they presuppose rather than what is explicitly addressed by the students. In this case, the student is asked to confirm or disconfirm the teacher's understanding of the problem by means of the repair that follows the request for assistance. As has been shown in previous extracts, the teacher initiates a new sequence after the first response to the request for assistance in lines 7 and 9-10. This can again be seen as related to aspects of scaffolding.

In addition, the mere fact that a teacher uses repair to get more information about the assistance that is needed can in itself also be related to scaffolding. Since scaffolding is concerned with marking possible discrepancies between understanding and performance, it may be crucial to get more information about the understanding of students and their possible problems with this. This seems to be in line with the 'Model of Contingent Teaching' of Van de Pol et al. (2012), which states that teachers should first gather information on a student's current level of understanding, before being able to provide support that is contingent on that level. By initiat-

ing repair, the teacher offers the student a possibility for a further demonstration of (not) understanding to which the teacher then may provide contingent. In this particular case, the understanding check can be seen as a 'diagnosis check' (Van de Pol et al., 2012), since the repair initiation is based on the teacher's hypothesis of what the student's problem is (cf. Koole, 2012). It should be noted that not all repair initiations in the collection take the form of an understanding check. Initiations sometimes only indicate that there is a problem with hearing or understanding the student's request for assistance. Still, the repair initiation in those cases can be said to contribute to the teacher's gathering of information on the student's understanding. Following the other-repair initiation of the teacher, in all cases the student delivers more information concerning the initial request.

In a similar vein, it can be said that the 12 instances in which teachers initiate a new sequence that invites students in their explanation activity also contribute to the teacher's inventory of the student's (not) understanding. In these cases the new sequences work towards a solution to the (proposed) problem instead of only requesting more information on a student's problem or understanding. These teacher actions share similarities with what has been described by Markee (1995) as counter-questions, an example of which can be seen in Extract 6. In line 1, the student makes a request for information in the form of a polar question that implicitly holds the candidate proposition that 'if you square six, this becomes y'.

Extract 6
Polar question followed by a teacher's new sequence leading to an explanation (2206).

1. →	S1:	>als je als je< zes in het kwadraat (.) zet (.) wordt dit dan y? *>if you if you< raise six to the square (.) does this become y then?*
2.		(1.0)
3. →	T:	als je zes in het kwadraat (.) zes keer zes is zesendertig (.) *if you square six (.) six times six is thirty-six (.)*
4.		min vijf is, *minus five is,*
5.	S1:	eenendertig en [dat is dan y] *thirty-one and [that is y then]*
6.	T:	[en dat is dan] de y dat is dan de uitkomst *[and that is then] the y that is then the outcome*
7.	S1:	o:hke *o:kay*

The student's request takes the form of a yes/no-interrogative ('does this become y'), which makes the preferred type-conforming answer a yes/no-answer. The teacher does not produce this yes/no-answer in lines 3-4, but instead initiates a new sequence herself, in the form of a designedly incomplete utterance (Koshik, 2002). The DIU prompts the student to complete the teacher's calculation, and thereby challenges her to think actively about the task herself. The student's contribution, provided in line 5, leads her to an answer to her own initial request for information about what y is: 'thirty-one and that is y then'. The teacher confirms this in line 6, after which the student produces the receipt token 'o:hke' (l. 7).

In terms of mundane interaction, initiating a new sequence is the least conforming response option the teacher had at her disposal. Her DIU does not only not conform to the formal constraints put forward by the student's request, but it also does not conform to the action-based preference of providing information. Still, the student in Extract 6 does not treat the teacher's DIU as a dispreferred response. Rather, she instantly completes it (l. 5) in a

turn that does not show any hesitation or dissatisfaction with the teacher's uptake of her problem.

On the surface, based on what we know from mundane conversation, we could hypothesize that the student accepts the teacher's new sequence because she orients to it as an initiation of an *insert sequence* like the repair sequences, "understood to *defer* the base second pair part" (Schegloff, 2007: 99). After all, after the student's answer to the teacher's DIU, both the student and the teacher do still produce the base SPP to the student's initial request for information (l. 5-6). Apparently, the orientation to an

Extract 7
Claim of not-understanding followed by a teacher's new sequence shifting the topic (2782).

1.	S1:	↑kijk ik snap <u>dit</u> wel eerst eerst de: (.) letters weghale:n (.) *↑look I do understand <u>this</u> first first remove the: (.) letters (.)*
2.		>maar dan snap ik niet wat je dan later met die letters moet doen< *>but then I do not understand what you have to do with those letters later<*
3.		(.) als je het antwoord hebt van dit bijvoorbeeld *if you have the answer from this for example*
4.		((teacher glances in notebook))
5.	→ T:	vijf min u:hm min x is (.) OH die min een die is overbodig min x is *five minus u:hm minus x is (.) OH the minus one is redundant minus x is*
6.		hetzelfde als min een keer x en dan mag je gewoon dit korter *the same as minus one times x and then you may just write this down in a*
7.		opschrijven dus min x *shorter way so minus x*
8.	S1:	ja maar ↑kijk je moet dan heb je deze som he *yes but ↑look you have to then you have this sum TAG*
9.	T:	ja *yes*
10.	S1:	en dan moet je <u>die</u> weglaten die <u>k n k n</u> *and then you have to leave <u>those</u> out those <u>k n k n</u>*
11.		(.)
12.		die [moet je weglaten *those [you have to leave out*
13.	T:	[ja dit moet je zo kort mogelijk [opschrijven *[yes this you have to write down as short as [possible*
14.	S1:	[ja en dan schrijf je dit <u>zo</u> op *[yes and then you write it like <u>this</u>*
15.		[en wat moet je dan met de of- met die letters nog doen? *[and what do you do next with the or- with those letters still?*
16.	T:	[ja *[yes*
17.		dan n k n en je moet het in die letters moeten altijd in *then n k n and you have to in those letters always have to be in*
18.		alfabetische volgorde [dus k m n *alphabetical order [so k m n*
19.	S1:	[moeten die erachter? *[they have to go behind?*
20.	T:	ja *yes*
21.	S1:	[oh oke *[oh okay*
22.	T:	[dus op deze manier altijd eh (.) ja die horen er ook bij *[so always this way eh (.) yes those do belong to it*

answer remained intact when the teacher initiated her sequence in lines 3-4. Upon further analysis, however, the sequence appears to deviate from insert sequences in mundane conversation (cf. Schegloff, 2007). Firstly, after typical insert sequences, the deferred base SPP is (solely) produced by the recipient of the base FPP (the teacher, in this case), whereas in Extract 6, the producer of that FPP (the student) also produces a (candidate) base SPP (l. 5). Secondly, in mundane conversation, insert sequences serve to gather the information necessary for providing the base SPP. In Extract 6, however, the teacher's DIU, as well as the student's response, rather seem to be motivated by pedagogical considerations.

Again, the teacher's DIU appears to request 'known information' similar to 'known information questions' (Mehan, 1979), i.e. a type of question that is typically asked in a pedagogical context. The choice to initiate a new sequence instead of giving an answer could serve several pedagogical functions. Firstly, with a sequence initiating turn that invites a student's contribution, a teacher can challenge students to think independently, while at the same time guiding them in a certain direction by reducing the degrees of freedom (cf. Wood et al., 1976). Moreover, similarly to the repair instances, new sequences can function as efficient means to assess, diagnose and check a student's level of understanding. In Extract 6, for instance, the DIU (l. 3-4) functions as a 'diagnostic strategy' (Van de Pol et al., 2012) to assess the student's level of understanding by examining whether she can complete the teacher's calculation. Also, the teacher's DIU simultaneously functions as a 'diagnosis check' (Van de Pol et al., 2012) again, since the DIU is based on the teacher's hypothesis of what the student's problem is (cf. Koole, 2012). In this case, the student's response signals that the assumed problem corresponds to the student's actual problem, as she responds to the teacher's new initiation and thereby accepts its action and content.

In the remaining 5 instances of nonconforming responses initiating a new action, this action seems to drift away from the topical agenda posed by the student's request for assistance. In 4 out of these 5 instances, the student returns to the initial request in the continuation of the interaction. In these cases, the nonconforming response is taken up, but is also abandoned again while returning to the original agenda. An example of this can be seen in Extract 7 In line 2, the student reports a difficulty (Kendrick & Drew, 2016) by means of a declarative claim of not-understanding 'then I don't understand what I have to do with these letters'. A type-conforming response would have been a response indicating 'what one should do with these letters'. Instead, the teacher first remarks something about the 'minus-sign' on the basis of what she observes in the student's notebook.

The topic 'letters' that is introduced by the student in lines 1-3 is followed by a comment on the 'minus-sign' on the basis of what the teacher sees written in the student's notebook. This resembles what Stivers and Hayashi (2010) describe as a transformative answer, shifting the focus of the initial request. They also label this as evasion and stress that questioners may hold answerers accountable for the absence of a fitting response. This is indeed what the student does in line 8 'yes but then you have to then you have this sum TAG'. By starting this turn with 'yes but', the student marks a shift from the interactional agenda the teacher started in lines 5-7. She brings back the topic that aligns with her initial report (l. 5-12), followed by a response of the teacher in lines 13-22. The delivery of the required assistance comes to an end with the student's claim of understanding (Koole, 2010) in line 21: 'oh okay'.

Except for one interaction in which both teacher and student drift away from the initial request for assistance after the teacher's launch of a new initiating action, teacher and students still seem to be oriented to the pedagogical considerations that come with an initial request for assistance. Comparable to the other student-teacher interactions, teachers and students work on an explanation

together that can be said to be associated with contingency because of the student's demonstrations and claims of understanding while being involved in the explanation activity. In addition, these 5 instances in particular show that a teacher is oriented to the displayed discrepancy between what a student shows (in their notebook) and a correct production ('marking critical features' of Wood et al. 1976). By initiating a new topic, the teacher guides the student in the right direction. This seems to be prompted by pedagogical considerations again. Nevertheless, these instances are interactionally more complex than the two other forms of teacher initiations after a request for assistance since the teacher here also orients to the interactional context that is extended to the multimodal resources surrounding the student (cf. Svahn & Melander, 2021).

5. Conclusion and discussion

This paper reported on the analysis of 35 student-teacher interactions that showed a departure from the interactional constraints imposed by students' requests for assistance. These departures are of interest since they potentially show the workings of multiple principles in the classroom context. On the one hand, teacher and students may be oriented to mundane interactional principles installed by a request for assistance requiring an informative and helpful response in the next turn. On the other hand, the departures of these mundane interactional principles may give insight in orientations to the pedagogical context in which teachers aim to stimulate students to perform a task that they could not do without that support (scaffolding, Wood et al., 1976). A detailed turn-by-turn analysis such as this study adds to our understanding of the organization of student-initiated classroom interactions as well as to our knowledge on scaffolding by approaching this pedagogical principle from a participants' perspective.

For this study, we have focused on student-initiated sequences between a teacher and a single student during desk work in Dutch secondary schools. It is investigated from a participants' perspective how teachers depart from the mundane interactional constraints imposed by students' requests for assistance. The requests in our collection are either done in 'polar' or 'content' question formats or as reports of needs, difficulties, or troubles (Kendrick & Drew, 2016). In our analysis we paid attention to the format of the request without making this into the primary object of study, like Curl & Drew (2008) did for instance. By investigating the format of the request, we gathered more information about the constraints posed by for instance a (polar) question or a claim of not-knowing or not-understanding. From there, we have investigated the deviation from these constraints and linked these to possible pedagogical principles.

It has been shown that in their deviations the teachers show resistance to some or all constraints introduced by the requests for assistance. Firstly, teachers provide (in terms of polarity design) dispreferred responses that do conform to the constraints placed by the design of the request (by giving a yes/no response to a polar interrogative) but do not align with the positive polarity steering towards a positive response. Second, teachers not only resist design-based preference, they also deviate from the *formal* constraints of a student's request. They are found to give nonconforming answers that do provide the requested assistance, and thus conform to the action-based preference of a student's request, but that do not conform to the formal constraints imposed by the request. With their nonconforming answers, teachers are found to either contest a proposition that is posed by a student's request or evaluate the student's work as elicited by a student's request for assistance. Finally, teachers can resist both the type-conformity and the action-based preference by initiating a new action. Three different actions were found: initiating repair, initiating a new se-

quence that invites the student to an explanation activity leading towards the requested assistance, or initiating an explanation sequence while moving away from the requested assistance. Still, almost all these instances do show that the assistance requested for by the student is provided later on in the interaction.

It appears that resistance to constraints that in mundane conversation is treated as dispreferred, is in this setting not necessarily treated as such. Only the straightforward dispreferred responses to requests for assistance do show some orientation to dispreference both by the teacher (pauses, 'uh's) and by the student (objections, additional questions). This is in line with orientations to dispreference found in mundane interaction. Nevertheless, when additional explanations and/or 'known information' questions are on their way, students go along with this and accept the additional explanatory actions.

This orientation to the explanatory nature of these interactions becomes visible in almost all cases in the data set. Generally, the responses to requests for assistance in the collection are designed as longer (nonconforming) turns (big packages, Waring et al, 2018) or form the start of longer encounters with setting-specific practices such as checking a student's level of understanding, asking 'known information' questions and/or providing additional explanations. These setting-specific practices are related to pedagogical considerations guiding students in the right direction. The fact that students often immediately accept these apparently pedagogically motivated actions indicates that teachers' orientations to pedagogical principles on top of only mundane interactional ones are shared by the students. This orientation to pedagogical principles may also explain the deviation from the general preference for progressivity (Stivers & Robinson, 2006) in which an action that closes a sequence is preferred over actions that hinder the progress of the interaction.

This study has explored the pedagogical principles that participants in student-teacher interactions orient to by means of setting-specific interactional practices (such as 'known information' questions) and educational notions of scaffolding and contingency. Whenever an interactional practice or action deviated from what could be expected based on mundane conversation, the observations were tentatively linked to key features of scaffolding (Wood et al. 1976) or contingent teaching (Van de Pol et al., 2012). This is analyzed in a different vein than resistance to requests for information in other institutional settings such as news interviews or court room interaction (Clayman, 2001; Clayman & Heritage, 2002; Drew, 1992: Ehrlich & Sidnell, 2006) and for instance more recently webinars (Waring et al, 2018). In these cases, resistance could potentially also be linked to setting-specific considerations but this was not the focus of these studies. For this study, we explicitly aimed to link resistance as it became visible in deviating responses to interactional notions known to be relevant as pedagogical principles.

It must be noted, however, that in the scope of this study, nothing could be and has been said about the *effectiveness* of teachers' contributions. The teachers' practices that were carefully described as reducing the degrees of freedom, for instance, are not necessarily *effective* scaffolding practices; it is quite possible that teachers intervene "too strongly" or "too weakly" (see Hermkes et al., 2018). Assessments of the *effectiveness* or the *quality* of teachers' contributions are beyond the scope of this study. Nevertheless, the insights of this and other CA studies with an eye on teacher contributions may be of great assistance for reflection on teacher practices as is for instance proposed by Waring & Creider (2021).

The conclusions described above are all based on the analysis of 35 student-teacher encounters, which makes it difficult to generalize them to *all* student-teacher interactions. Still, the analysis has revealed a setting-specific interplay between mundane interactional principles and principles that are typical of classroom inter-

action. Moreover, it is also conceivable that the findings account for interplays between interactional and other normative systems in other (institutional) settings as well. The 'non-problematic' orientation to pedagogical principles in addition to mundane interactional ones may for example also be observable in parent-child interaction or therapist-patient interaction. Overall, the current study illustrated that it can be meaningful to investigate different systems that may be at stake simultaneously in institutional interactions. This challenges the often-made comparison of institutional interactions with mundane interactions as separate areas of interest and opens up avenues for further research of different normative interaction systems at play in other institutional settings. In the specific case of classroom interaction research, we consider this integrative view as a possible step forwards in closer collaboration between interactional and educational research.

Declaration of Competing Interest

No competing interests to declare.

Acknowledgements

Appendix: Transcription Conventions (Adapted from Jefferson, 2004)

Translations from Dutch into English are provided line by line, in italics. The following symbols are used:

(0.5)	Silence, numbers indicate length in seconds
(.)	Micro pause, shorter than 0.2 seconds
?	Slightly rising phrase intonation
,	Sharply rising phrase intonation
.	Falling phrase intonation
↑	Sharp rise in pitch
word	Stress
WORD	Louder than surrounding talk
word	Softer than surrounding talk
wo:rd	Lengthening of preceding sound
>phrase<	Faster than surrounding talk
<phrase>	Slower than surrounding talk
[word	Overlapping talk
[word	
word=	No break between two turns
=word	
((description))	Description of nonverbal behaviour
(word)	Unclear talk
()	Inaudible talk
→	Focus of analysis

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