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Teacher-child interactions in bilingual daycares: Investigating the use of discourse strategies and teaching techniques

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ABSTRACT

In early foreign language classrooms, teachers often create language learning contexts through informal interaction. This study investigates the discourse strategies and teaching techniques teachers employ in teacher-child interactions at Dutch-English bilingual daycare centers in the Netherlands. Classroom observations were recorded at six different daycare organizations (resulting in 900 min of recorded and transcribed material). Five Dutch-speaking, four English-speaking teachers and 70 children in total (1;10–3;11 years old) were recorded. Results show that Dutch-speaking teachers generally use more teaching techniques than English-speaking teachers, and English-speaking teachers use more discourse strategies than Dutch-speaking teachers. There is no difference in what discourse strategies are used. In both languages, bilingual discourse strategies are more frequent than monolingual strategies. By also investigating children's responses to the strategies used, this study provides evidence that teaching techniques such as eliciting and modelling are effective in eliciting responses in the target language from L2 learners in this age group. Lastly, this study does not support the Discourse Hypothesis which states that the use of monolingual discourse strategies often co-occurs with active use of the target language.

1. Introduction

In bilingual daycare, teachers are responsible for the creation of language learning opportunities. To establish this, they may sing songs, tell stories and carry out routines (Albaladejo Albaladejo et al., 2018; Björk-Willén, 2008; Elvin et al., 2007; Fleta Guillén, 2018; Lugossy, 2018; Pino Juste & Rodríguez López, 2020), but also through informal interaction they are able to create language learning contexts. These interactions also have an impact on a child's development of academic, social and cognitive skills (Langeloo, 2020). The aim of this paper is therefore to investigate the strategies and techniques that teachers use to facilitate language learning in (informal) interactions in early L2 classrooms.

To do so, this study focuses on the properties of teacher-child interactions at English-Dutch daycare centers in the Netherlands. To investigate the characteristics of these teacher-child interactions, this paper will explore the different teaching techniques teachers employ in interactions to create language learning contexts, as well as the discourse strategies they use when children use different languages. Furthermore, since the link between teaching techniques and use of the target language has not yet been studied extensively, this study will also take into account children's responses to the strategies used and investigate how often these strategies co-

occur with active use of the target language. In what follows, first a brief overview will be provided of previous work on discourse strategies and teaching techniques in teacher-child and parent-child interactions in multilingual settings.

1.1. Background

For bilingual children, differing interactive styles are likely to have an effect on the acquisition of the two languages (Döpke, 1992). Previous studies on interactions with young children in multilingual settings investigated various strategies that helped sustaining conversations with bilingual children. These studies were conducted in multilingual home settings on interactions between bilingual children and their parents (Döpke, 1992; Lanza, 2004) or in multilingual preschool and kindergarten classroom settings (Aarts et al., 2016; Albaladejo Albaladejo et al., 2018; Björk-Willén, 2008; Elvin et al., 2007; Fleta Guillén, 2018; Lin, 2010; Lin, 2012; Lugossy, 2018; Park, 2014; Ping, 2014; Pino Juste & Rodríguez López, 2020; Ready & Wright, 2011; Sherris, 2011; Soltero-González, 2009; Tsybina et al., 2006; Vine, 2006). However, studies in multilingual classroom settings differed in how the settings were multilingual: sometimes they were conducted in preschool and kindergarten classrooms where the teacher was a speaker of the majority language, while children have different home languages and are bilingual speakers, therefore making it a multilingual classroom environment (Aarts et al., 2016; Park, 2014; Ping, 2014; Ready & Wright, 2011; Sherris, 2011; Soltero-González, 2009; Tsybina et al., 2006; Vine, 2006). Other studies took place at preschools and kindergartens that implemented a foreign language program, making it a multilingual classroom environment because of the type of input that was being offered (Albaladejo Albaladejo et al., 2018; Björk-Willén, 2008; Elvin et al., 2007; Fleta Guillén, 2018; Lin, 2010; Lin, 2012; Lugossy, 2018; Pino Juste & Rodríguez López, 2020).

These studies on interactions in multilingual settings revealed different types of strategies that could be employed in conversations with children: (1) strategies managing children's language choice when they code-mix two languages, so-called *discourse strategies* (Lanza, 2004), and (2) techniques that stimulate and sustain language use in the target language (Döpke, 1992). These different types of strategies will be discussed in the following subsections.

1.1.1. Discourse strategies

Strategies of language use play an important role in the early language socialization of bilingual children (Lanza, 2004). Whereas no qualitative studies have been carried out investigating the strategies teachers employ when a child uses a different language or code-mixes two languages in classroom settings, various qualitative studies have been conducted investigating this in multilingual home settings. Lanza (2004) was the first to do so and distinguishes five types of strategies that could be adopted by parents when a child mixes two languages, the so-called *parental discourse strategies*. Each of these discourse strategies are ways to manage a child's language choice, they convey a different message and thus might have different effects on bilingual children's code-mixing behavior. Lanza (2004) distinguishes parental discourse strategies as depicted in Table 1.

Lanza (2004) notes that these discourse strategies are not always conscious decisions made by the speaker. For example, studies on code-switching have shown that adult bilinguals can sometimes be unaware of what language they are using when they are taking part in a conversation. Still, all the strategies can be placed on a continuum since they each have a potential of creating a context that is more or less monolingual or bilingual. For example, with the *minimal grasp* strategy, a parent indicates a need for clarification, creating a monolingual context where the use of only one particular language is allowed. With an *expressed guess*, a parent "subtly reveals his or her role as a bilingual through the translation of the child's mix" (Lanza, 2008, p. 57). This places the created context further along the continuum towards the bilingual side of it.

With the use of an *adult repetition*, the parents uses the other language to repeat and translate the child's utterance. As opposed to the *expressed guess* strategy, the adult repetition does not take the form of a question, but rather that of a statement. This also reveals the parent's role as a bilingual, but even more so than the expressed guess strategy: in this case, the parent does not need the child's

Table 1
Parental discourse strategies (Lanza, 2004, p. 262, 268).

MONOLINGUAL CONTEXT	**Minimal grasp**	Adult indicates no comprehension of the child's language choice
	Expressed guess	Adult asks a yes/no question using the other language
	Adult repetition	Adult repeats the content of the child's utterance, using the other language
BILINGUAL CONTEXT	**Move on**	The conversation merely continues
	Code-switching	Adult code-switches to the other language

reassurance which places this strategy even further towards the bilingual end of the continuum.

By using the *move on* strategy, the parent continues the conversation without addressing the child's language choice. In doing so, the parent accepts the child's mixing behavior and implicitly indicates that (s)he understands the other language, creating a bilingual context. On the far bilingual end of the continuum, the parent switches to the other language by *code-switching*: this can be done by completely switching to the other language or by employing intra-sentential code-switching. Consequently, a fully bilingual context is created where use of another language is not merely accepted by the parent, but where the other language is also actively used by the parent.

Lanza's (2004) *parental discourse strategies* scheme has provided subsequent studies with a testable framework, the so-called Parental Discourse Hypothesis, stating that the more monolingual the parental strategy is, the lower the rates of the child's code-mixing (e.g. Juan-Garau & Pérez-Vidal, 2001; Mishina, 1999; Nicoladis & Genesee, 1998). Still, the effect of each parental strategy on children's code-mixing behavior remains undecided. Whereas qualititative studies found that parental discourse strategies indeed influence children's code-mixing behavior (Juan-Garau & Pérez-Vidal, 2001; Mishina, 1999), quantitative studies did not find significant statistical evidence (Deuchar & Muntz, 2003; Nicoladis & Genesee, 1998).

In their qualitative study, Juan-Garau and Pérez-Vidal (2001) found that the language choice patterns of a Catalan-English bilingual child were indeed linked to the response styles of his English-speaking father. After a visit to an English-speaking country, the father switched from mostly employing bilingual discourse strategies to monolingual discourse strategies, leading to a shift in the child's language choice. After switching to monolingual discourse strategies, the child adhered more to English. Similarly, in a qualitative study, Mishina (1999) found evidence for the link between interactional strategies and children's language mixing by longitudinal observation of natural interaction between a two-year-old English-Japanese bilingual child and his parents.

To investigate the Parental Discourse Hypothesis quantitively, Nicoladis and Genesee (1998) followed 5 different French-English bilingual families for six months and studied the effects of parental strategies on children's code-mixing (ages 1;9 to 2;0 at the start of the study). The results however did not provide support for the Parental Discourse Hypothesis. Children interacting with parents who used bilingual strategies more often, did not code-mix more than children interacting with parents that mostly resorted to monolingual strategies. In the discussion of their findings, Nicoladis and Genesee (1998) point out that results might have been influenced by the bilingual children's unbalanced proficiency in the two languages, as well as their age: some children's cognitive skills might have not yet been developed well enough to understand the link between the communication breakdowns and language choice.

Similar to Nicoladis and Genesee (1998) and Deuchar and Muntz (2003) examined the relationship between an English-Spanish bilingual child's (1;7 to 2;7 years) code-mixing and the parents' discourse strategies quantitively. Also Deuchar and Muntz (2003) did not find significant correlations between the child's code-mixing behavior and the parental discourse strategies, and suggested that the child's cognitive development could account for her code-mixing patterns.

So far, no qualitative studies have been conducted looking at the specific strategies teachers use in response to the child's use of a different language than the interlocutor, or when a child code-mixes two languages in early foreign language contexts. However, some studies did focus on the presence of other languages in interactions between teacher and child at multilingual preschools and kindergartens (Caporal-Ebersold & Young, 2016; Cornips, 2020; Lugossy, 2018; Soltero-González, 2009). These studies showed that teachers varied in the degree to which they allowed use of home languages in their classrooms. Soltero-González (2009) found that teachers in their study did not encourage use of the home language in their classrooms, even though the preschool's language policy allowed home languages to be used. The minority language was not used to support the acquisition of the majority language and the majority language was used as the main language of instruction.

In Cornips (2020), teachers allowed the home language to be used and also used the home language themselves, but only in specific contexts. Children in a group were always addressed in the majority language, whereas individual children were addressed in the minority language if this was their home language. Teachers mainly used the majority language in contexts related to classroom organization and learning. The minority language on the other hand was used to provide emotional support. In studies by Caporal-Ebersold and Young (2016) and Lugossy (2018) at daycare centers using a one person one language policy to implement foreign language learning, teachers also differ in how strictly they stick to this policy. Whereas some teachers decided to strictly follow the policy, others decided to switch languages if children's wellbeing was at risk.

1.1.2. Teaching techniques

In addition to discourse strategies, Döpke (1992) found that parents also employ different kinds of teaching-oriented utterances in

Table 2
Teaching techniques used in parent-child interactions (Döpke, 1992, p. 148–153).

Vocabulary teaching techniques	Modelling	Provision of label, mapping, semantic correction, chaining, translation feature elaboration, functional elaboration, general paraphrase
	Patterning	Contrasting provision of label
	Rehearsing	Vocabulary perseveration, incorporation
	Eliciting	Request for label, choice question, request for insertion, contrasting polar questions, where-is questions, what-doing question, request for translation
Grammar teaching techniques	Modelling	Expansion, optional transformation, morpheme correction, complex extension, NP extension, PP extension, VP extension
	Patterning	Major substitution, frame variation, morpheme substitution
	Rehearsing	Morpheme perseveration, self-reduction, minor substitution
	Eliciting	Request for NP extension, request for PP extension, request for VP extension

interactions with bilingual children to create extended discourse and to support language development. From this, Döpke (1992) concluded that parents are also generally aware of their teaching function in conversations with their children. Parental utterances were considered teaching techniques if they (1) present the child with verbal models, (2) rehearse language information for the child, (3) make pattern structures transparent, or (4) elicit verbalizations from the child. From Döpke's (1992) analyses, different types of teaching techniques emerged: parents seemed to employ vocabulary teaching techniques as well as grammar teaching techniques. The vocabulary and grammar teaching techniques could both be subdivided into different categories: modelling techniques, patterning techniques, rehearsing techniques and eliciting techniques. Table 2 presents an overview of the different teaching techniques distinguished.

Similar to parents, studies on teacher-child interactions found that teachers employ various strategies in interactions to create extended discourse and to support language development in multilingual classrooms in preschool and kindergarten (Björk-Willén, 2008; Fleta Guillén, 2018; Gardner, 2008; Lin, 2010; Lin, 2012; Lugossy, 2018; Park, 2014; Ping, 2014; Sherris, 2011; Soltero-González, 2009; Tsybina et al., 2006; Vine, 2006). Teachers appeared to be using a wide variety of scaffolding techniques such as questions, repetition, recasts, clarification requests, formulaic expressions, corrective feedback and metalinguistic feedback (Björk-Willén, 2008; Fleta Guillén, 2018; Lin, 2010; Lin, 2012; Lugossy, 2018). Teachers not only frequently asked yes/no questions, but also asked children to elaborate on their answers (Gardner, 2008; Sherris, 2011). Some preschool teachers also made use of wh-questions in attempts to engage multilingual children in interactions (Ping, 2014). In addition to wh/yes/no questions and asking for explanations, teachers in kindergarten have also been found to repeat responses to check for understanding (Sherris, 2011) and to make use of nonverbal communication, such as tones of voices, speed of speaking and visual components as body movements, gestures and facial expressions (Park, 2014; Soltero-González, 2009; Vine, 2006). Teachers also used implicit corrections to support grammar learning (Ping, 2014; Tsybina et al., 2006).

According to Fleta Guillén (2018), the teaching techniques used in pre-primary foreign language classrooms were mostly focused on meaning rather than form, and teachers were more likely to check language comprehension than to correct language production. In pre-primary foreign language classrooms, she also notes that positive feedback (such as questions, elicitation, metalinguistic feedback, expansion, cognates) played a more prominent role. Additionally, corrective feedback techniques that were used (such as explicit correction, clarification requests and recasts) had an informative function rather than a corrective function. In doing so, teachers created opportunities for language uptake and promoted communication.

The relationship between teaching techniques and children's language choice in responses to these teaching techniques has not been studied extensively. Fleta Guillén (2018) has found that in pre-primary L2 classrooms the majority (>83 %) of children's contributions were in their L2 (English), but the children's contributions were not linked to the teaching techniques that were used by the teachers. In these classrooms located in Spain, English was taught as a second language by means of immersion. Additionally, it was found that the use of English became more habitual with children as they stayed in school longer: in the youngest age group, the amount of utterances in Spanish was the highest (12 %). Similarly, Lugossy (2018) found that in early L2 preschool classrooms in Hungary, the older children (4–7 years) were more likely to respond in English than the younger ones (1–3 years): whereas older children were able to respond to yes/no questions, name animals and objects and would sing English songs to themselves, younger children more often ignored their teachers' English questions and requests or responded non-verbally or in their L1. These results show that the use of the L2 increases as children get older.

1.2. Current study

Previous studies on interactions in early foreign language learning classrooms showed that in multilingual classrooms, teachers differ in the degree to which they switch between languages and allow other languages to be used (Alstad & Tkachenko, 2018; Caporal-Ebersold & Young, 2016; Cornips, 2020; Lin, 2012; Lugossy, 2018; Soltero-González, 2009). However, no studies have investigated the strategies that teachers employ when a child uses a different language or code-mixes two languages in the classroom. Qualitative studies investigating the strategies parents use in multilingual home situations show that they resort to various discourse strategies, varying from monolingual to bilingual strategies (Lanza, 2004). So far, no studies have been carried out investigating these discourse strategies employed by teachers in multilingual classroom settings.

Additionally, studies showed that parents as well as teachers employ a wide variety of teaching techniques to support language learning in conversation (Björk-Willén, 2008; Döpke, 1992; Fleta Guillén, 2018; Gardner, 2008; Lin, 2010; Lin, 2012; Lugossy, 2018; Park, 2014; Sherris, 2011; Soltero-González, 2009; Tsybina et al., 2006; Vine, 2006). Even though studies show that teachers use various teaching techniques and therefore create a "potential facilitating context for preschool children's learning of vocabulary and grammar" (Ping, 2014, p.157), so far the link between teaching techniques and use of the target language has not yet been studied extensively, leaving a lacuna in the body of knowledge regarding the effectivity of teaching techniques used in early foreign language classrooms.

In the present study, we aim to bridge these gaps by further investigating the discourse strategies and teaching techniques teachers employ in multilingual conversations in the context of Dutch-English bilingual daycare centers in the Netherlands. To do so, we have recorded classroom observations and analyzed teacher-child interactions. In addition, we also looked at children's responses to these discourse strategies and teaching techniques. To investigate the use of discourse strategies, this study employed the *parental discourse strategies* framework by Lanza (2004). Even though this framework is based on parent-child interactions in home settings, we believe that this framework could also be applied to teacher-child interactions in classroom settings, since we believe that the various discourse strategies differentiated by Lanza (2004) are almost all-encompassing. Still, from now on, we will refer to Lanza's (2004) Parental Discourse Hypothesis as the Discourse Hypothesis, to avoid confusion. In this study, we address the following questions:

(1) Which discourse strategies do teachers use when participating in teacher-child interactions?
(2) How often does the use of discourse strategies co-occur with active use of the target language?
(3) Which teaching techniques do teachers use when participating in teacher-child interactions?
(4) How often does the use of teaching techniques co-occur with active use of the target language?

2. Methods

2.1. Participants

2.1.1. Daycare organizations and teachers

For this study, video and audio recordings were made at six different daycare locations, henceforth daycare A, B, C, D, E and F. For the English observations, recordings were made at daycares A, B and C. Dutch observations were recorded at daycares D, E and F. Teachers recorded in the English observations only tried to elicit the English language and teachers recorded in the Dutch observations the Dutch language. All daycares were part of a project initiated by the Dutch government in which 10 daycare organizations in the Netherlands were allowed to offer Dutch-English bilingual daycare to children between the ages of 0–4.

All daycares were comparable in terms of daily routines, but varied in terms of children's cultural and linguistic backgrounds. At all daycare organizations, days consisted of fruit and lunch breaks, circle times and free play. During the day, two teachers were present. At all daycares but one (daycare B), the *one teacher-one language* strategy was adopted: according to the daycare language policy, one teacher should speak English, whereas the other should only speak Dutch. At daycare B, they opted for a slightly different method: one teacher only spoke Dutch, while the other spoke Dutch and English.

At daycares A and D, multiple teachers were recorded. This was due to practical reasons: at some daycare organizations, some teachers only worked part-time and sometimes teachers fell ill and were replaced by others on the day(s) of recording. Furthermore, teachers varied with respect to their language backgrounds. See Table 3 for an overview.

Teacher codes were composed as follows: the first letter stands for language of observation: E for English, D for Dutch. The second letter stands for teacher and the last letter is the organization the teacher worked at. To illustrate: teacher DT5_C was the fifth teacher included in the Dutch observations, she worked at organization C.

2.1.2. Children

In total, 70 children participated in the observations: 35 children were recorded in the English teacher observations and 35 children were recorded in the Dutch teacher observations. An overview of these children can be found in Table 4. These children were part of a larger sample of children ($N = 636$) participating in a study on the effects of bilingual daycare. In this pilot study, ten different daycare organizations were allowed to offer Dutch-English bilingual input. For the purposes of this specific study, we selected six different daycare centers and groups that were mostly visited by children acquiring English as a second language (for the English observations) or Dutch as a second language (for the Dutch observations). Information about the children's exposure to Dutch and English at home was gathered using an online parental questionnaire. All children participated in this study using informed consent. Ethical approval for this study was obtained from the University of Amsterdam research ethics committee at the Faculty of Humanities.

As shown in Table 4, the majority of children in the English (83 %) observations acquired English as a second language (Dutch 54 %, Dutch + other 6 %, Dutch + English, 3 %, other 20 %). Similarly, in the Dutch observations the majority (63 %) acquired Dutch as a second language (English 9 %, English + other 31 %, other 23 %). It should be noted that this sample of children is not necessarily representative for the bilingual daycare population, but was the result of our choice to focus on children acquiring the language of observation as a second language. However, children acquiring Dutch as a second language are more rare than children acquiring English as a second language in the Netherlands, hence the difference in percentages.

The mean age of the children in the English observations ($M = 2;9$, with ages ranging from 1;10 to 3;11) was comparable to the mean age of children in the Dutch observations ($M = 2;9$, with ages ranging from 2;1 to 3;11). The observations in both languages were also comparable in terms of gender distribution ($F = 19$, $M = 16$ for the English observations and $F = 16$, $M = 19$ for the Dutch observations).

2.2. Data collection

All participating daycare centers were visited for three mornings. On these mornings, video and audio recordings were made of the teacher(s) and the conversations they had with the children. The recordings were made as follows: the observer sat in a corner of the classroom with a camera to film the teacher and children, while the teacher wore a microphone to record audio. The observer did not communicate with the teacher nor the children. All daycare centers typically had the same schedule in the morning: first, children had some fruits or snacks, then there was circle time, some free play and book reading and then lunch break. For three mornings, the observer filmed the teacher as she went about her day and interacted with the children during these activities. Mornings typically lasted from 9 AM till 12 PM.

Because the daycare centers were each visited for three mornings, approximately 540 min of video- and audio recordings were made per daycare center in total. To ensure that all transcriptions and recordings were comparable, 150 min of recordings were then selected and transcribed for each of the daycare centers, resulting in 900 min of recorded and transcribed material. For all daycare centers, all selected recordings involved equal amounts of fruit/snack time (30 min), circle time (60 min), free play (30 min) and lunch break (30 min), to make sure that the selected recordings would be a good reflection of a typical morning. Recordings that did not make

Table 3
Daycares and their teachers.

Daycare	Language of observation	Method	Teacher code	Mother tongue
A	Dutch	One teacher-one language	DT1_A	Tamazight
A	Dutch	One teacher-one language	DT2_A	Tamazight
A	Dutch	One teacher-one language	DT3_A	Bahasa Indonesia
B	Dutch	One teacher-one language	DT4_B	Dutch
C	Dutch	One teacher-one language	DT5_C	Dutch
D	English	One teacher-one language	ET1_D	Dutch
D	English	One teacher-one language	ET2_D	Bahasa Indonesia
E	English	Teacher speaks Dutch and English	ET3_E	Dutch
F	English	One teacher-one language	ET4_F	Dutch

Table 4
Children in English and Dutch observations.

Home language(s)	English observations (N = 35)	Dutch observations (N = 35)
Dutch	19 (54%)	11 (31%)
Dutch + other	2 (6%)	1 (3%)
Dutch + English	1 (3%)	1 (3%)
English	4 (11%)	3 (9%)
English + other	2 (6%)	11 (31%)
Other	7 (20%)	8 (23%)

the selection were typically unusable recordings (e.g. recordings with too much noise so that the conversations would be incomprehensible) or recordings in which no interactions took place with the children. Next to the aforementioned activities, one semi-structured activity was included (30 min). Teachers were asked to read from the same picture book: '*Hier woon ik*' ('This is where I live') (Westendorp, 2015). This book contained virtually no text, which stimulated the teachers to be creative and have conversations with the children about the book's pictures.

2.3. Transcription and coding

After data collection, audio recordings were transcribed. In addition to the audio recordings, video recordings were used to determine the contexts in which the interactions took place, as well as to identify non-verbal utterances. All recordings were transcribed in the Computerized Language ANalysis program (henceforth: CLAN, see MacWhinney, 2000) using the Codes for the Human Analysis of Transcripts format (henceforth: CHAT). The CHAT transcription format is a standardized format for producing transcripts of face-to-face conversational interactions and can be used with learners of all types (including children, second language learners and aphasic patients). As CHAT does not define utterances, we opted for T-unit analysis (Hunt, 1970) for the segmentation of utterances within each transcript. A T-unit is generally defined as a main clause plus any subordinate clauses that may be attached to it.

After transcription, all utterances were coded using CLAN. Children's utterances were only coded for language of the utterance. Teachers' utterances were coded for: (1) language of the utterance, (2) goal of the utterance (child-centered, control-centered or self-centered[1]), (3) direction of utterance (towards one child, a group of children, or someone else), (4) type of utterance (interactional strategy, song, routine[2] or other), and if an utterance contained an interactional strategy, it was coded for (5) type of discourse strategy, and/or (6) type of teaching technique. To identify the discourse strategies used, we resorted to Lanza's (2004) *parental discourse strategies* framework. However, to avoid missing out on any other potential discourse strategies used by only limiting ourselves to the pre-defined discourse strategies by Lanza (2004), we conducted a bottom-up analysis to see if Lanza's (2004) pre-defined categories were all-encompassing. We found that the discourse strategies employed by the teachers in this study indeed largely overlapped with those categorized by Lanza (2004), those being: (i) asking for translation (ii) minimal grasp, (iii) expressed guess, (iv) adult repetition, (v) move on, (vi) codeswitching. In this study, the asking for translation category was added to Lanza's *parental discourse strategies* as a discourse strategy, since an analysis of the data showed that teachers in our sample sometimes resorted to this strategy. No other discourse strategies were employed by the teachers. See Table 5 for an overview of all discourse strategies.

Teaching techniques provide language information, elicit language from the child or reflect on language information. Because research has shown that teachers may use a wide variety of strategies (Björk-Willén, 2008; Fleta Guillén, 2018; Gardner, 2008; Lin, 2010; Lin, 2012; Lugossy, 2018; Park, 2014; Sherris, 2011; Soltero-González, 2009; Tsybina et al., 2006; Vine, 2006), we again opted for a bottom-up analysis of the data to identify and categorize teachers' teaching strategies. From our bottom-up analysis, fifteen

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[1] An utterance was coded as child-centered when the main goal of the utterance was to communicate with the child and a verbal response was expected or could logically follow. Control-centered meant that the main goal of the utterance was to control the child, and a teacher used directives and/or an action was expected. An utterance was coded as self-centered when a teacher reflected or commented on one's own actions and no reaction or action was expected from the child.

[2] When an utterance was part of a routine, e.g. morning meetings, it was coded as a routine.

Table 5
Discourse strategies.

Strategy	Definition	Example
Asking for translation	Asking the child to translate its utterance in the target language.	Child: Fiets. ('*Bicycle.*') Teacher: And in English?
Minimal grasp	Feigning non-comprehension	Child: Boekje lezen. ('*Read book.*') Teacher: Hmm?
Expressed guess	Incorporating a translation of the child's utterance into a yes/no-question	Child: Di(t) mijn mammie. ('*This my mommy.*') Teacher: Is it your mommy?
Adult repetition	Repeating the child's utterance translated into the target language	Child: Trein! ('*train!*') Teacher: Train!
Move on	Not mentioning the inappropriate language choice and simply moving on with the conversation	Child: Kijk daar poes! ('*Look there kitty!*') Teacher: But he's still sleeping a bit.
Code-switching	Switching to the language used by the child.	Teacher: Who likes grapes? Child: Ikke! ('*Me!*') Teacher: Ja?

categories of teaching strategies emerged. See Table 6 for an overview of all teaching strategies that emerged and were coded for.

2.4. Data analysis

To count the teaching techniques and discourse strategies, CLAN was used (MacWhinney, 2000) using the freq command. To gain further information on the context in which the techniques and discourse strategies were employed and to determine how children responded to the utterances, we ran the kwal command. We used a window of five utterances following the strategy, to also capture responses that were not immediately given straight after the utterance containing the strategy. This window proved to be large enough to capture all responses to the strategies. To investigate how often the use of particular discourse strategies and teaching techniques co-occurred with active use of the target language, we relied on the mere counting of teaching techniques and discourse strategies. No inferential statistical tests (e.g. correlations) were conducted because of the relatively low number of responses to the discourse strategies.

To visualize children's responses to the teaching techniques and discourse strategies, we used the GridWare software (Lamey et al., 2004). GridWare is a data visualization tool usually used for multivariate time series of sequential (ordinal or categorical) data. However, it has also proved to be a useful tool in visualizing categorical data collected in foreign language classroom interactions (Smit et al., 2016). GridWare allowed us to visualize in what language children responded to the various teaching and discourse strategies, by

Table 6
Teaching strategies.

Category	Strategy	Definition	Example
Eliciting	Choice question	Asking a child a question in the target language with two answer options embedded in it (often contrasting options).	Teacher: Are you a girl or a boy?
	Prompting	Prompting a part of a sentence or a word in the target language to elicit a contribution in the target language by the child.	Teacher: It's an o-o(val). Child: Oval!
	Wh-question	Asking a wh-question in the target language to elicit a contribution in the target language.	Teacher: What shape is this? Child: Circle.
	Yes/no question	Asking a question in the target language, expecting the child to answer either yes or no.	Teacher: (Is) this your nose?
	Definition or Elaboration	Giving a definition (i.e. 'An X is Y', 'X means that Y') or explaining features or characteristics of an object (i.e. An X is to Y).	Teacher: In the attic we store things.
Modelling	Labeling	Connecting an object to its name (sometimes including adjectives).	Teacher: This is a window. Teacher: That's a very bad spider.
	Modelling	Producing a word or a sentence in the target language, expecting the child to repeat it.	Teacher: Can you say: couch?
	Rephrasing	Repeating a word or structure in different words.	Teacher: And we need a little circle, a ball.
	Translation	Producing a word or a sentence in the non-target language and then translating it into the target language.	Child: Vélo. Teacher: Vélo. Teacher: And in English? Teacher: Bicycle.
	Visual cues	Helping children comprehend a word or a structure in the target language by using visual cues, such as gestures or images.	Teacher: The clown juggles like this [! = juggling].
Rehearsing	Repeating	Repeating a word or structure uttered in the target language by a child or by the teacher herself.	Child: Banana! Teacher: Banana.
Metalinguistic information	Metalinguistic information	Reflecting on languages or linguistic phenomena.	Teacher: That's how you say it in English.

also taking their home languages into account.

3. Results

3.1. Composition of language input

Before we focus on the types of discourse strategies and teaching techniques that were used, we will first discuss what type of utterances the language input in both languages consisted of. Fig. 1 depicts the composition of the Dutch input and Fig. 2 depicts the composition of the English input. In both figures, the distribution of strategies is portrayed for all teachers separately. The bars with diagonal stripes represent the composition of the input when taking all teachers together.

In total, for Dutch 8083 utterances were transcribed and coded and for English 7373. Results show that many utterances in both languages contained no teaching technique or discourse strategy (46% for Dutch, 44% for English). Also, Dutch-speaking teachers used more teaching techniques for teaching Dutch (45% in total: 44% of utterances contained a teaching technique only, 1% both a discourse strategy and teaching technique) than English-using teachers for teaching English (23%) Furthermore, teaching techniques were more frequent than discourse strategies in both languages. Discourse strategies were employed more often by English-using teachers (6%) than Dutch-using teachers (2%). This indicates that in English conversations, children used other languages than English more frequently since in this study, every response by a teacher to an utterance by a child produced in a non-target language was coded as a discourse strategy (e.g. if a teacher did not acknowledge the use of a non-target language, it was coded as use of the *move on* strategy). This means that a higher number of discourse strategies are a result of a higher number of utterances produced by children in a non-target language.

Lastly, approximately a quarter of the utterances in the English observations (27%) consisted of songs or routines. In Dutch observations, the use of songs and routines was less frequent (8%). However, it should be noted that in the English observations it was mostly teacher ET3_E who produced a lot of utterances that were part of songs and routines: 47% of her utterances consisted of this type of input.

3.2. Discourse strategies

One aim of this study was to unravel how teachers react when a child speaks in another language than the target language and to see what kinds of discourse strategies they employ. Fig. 3 depicts discourse strategies used by Dutch-speaking teachers and Fig. 4 those used by English-speaking teachers. In both figures, discourse strategies are presented for each teacher separately, as well as for all teachers together (bars with diagonal stripes). In total, 144 discourse strategies were used in the Dutch observations, as opposed to 501 in the English observations. Even though discourse strategies – and thus, use of another language than the target language by children – were more frequent in the English observations, results show that in both languages discourse strategies used were distributed similarly across the different types of strategies.

In both Dutch and English observations, teachers more often used discourse strategies that are placed on the bilingual end of the spectrum. Strategies on the monolingual end of the spectrum, such as asking for translation (1% in Dutch, 3% in English) and minimal
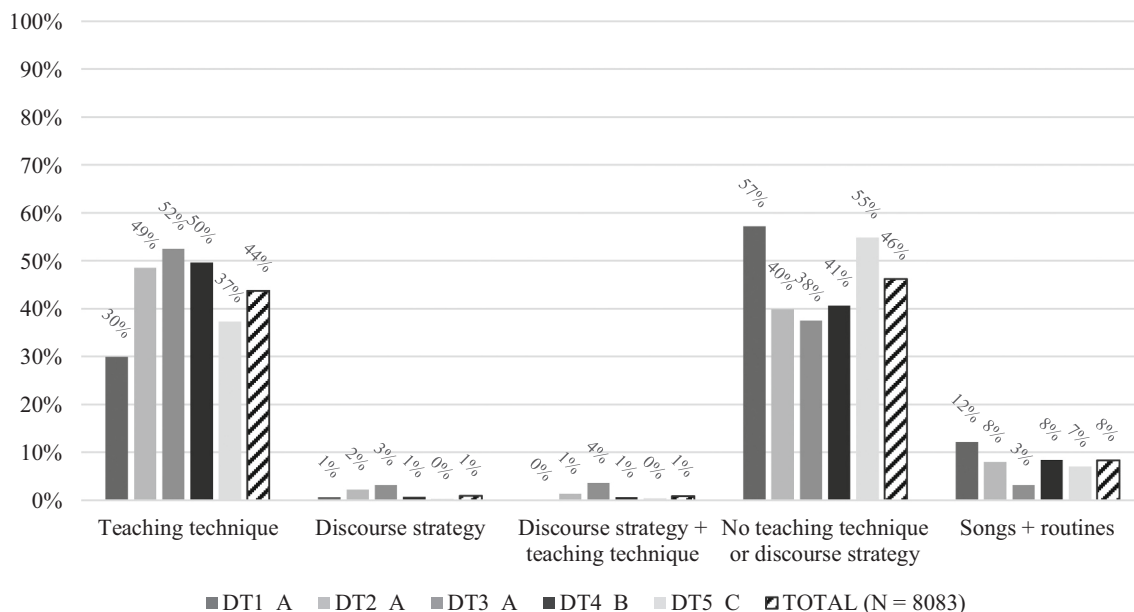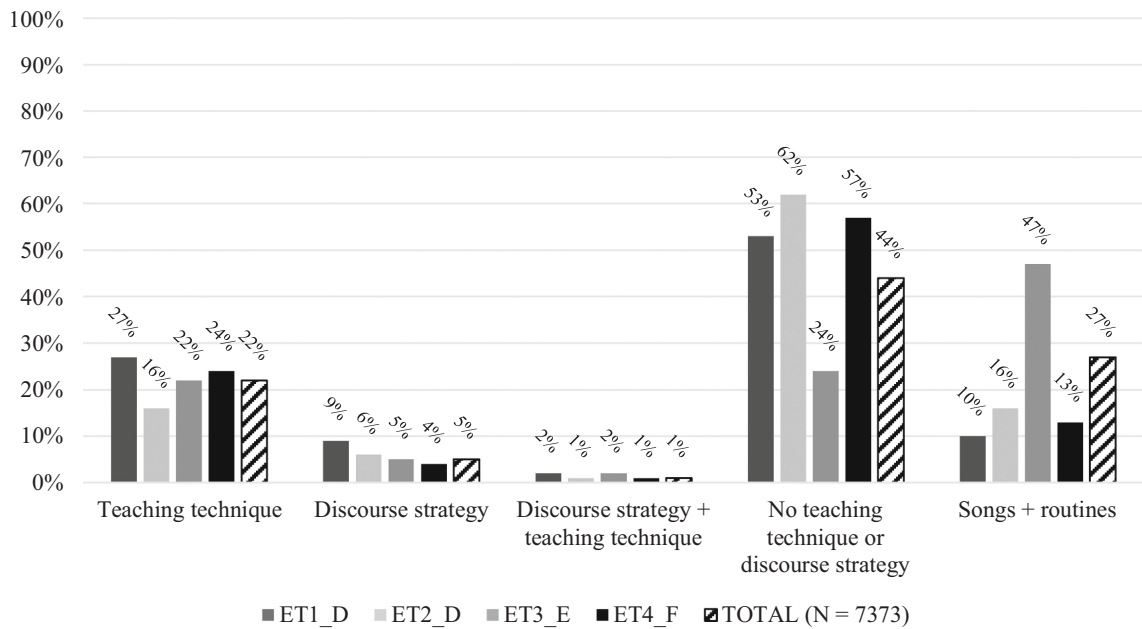

Fig. 1. Composition of Dutch input.

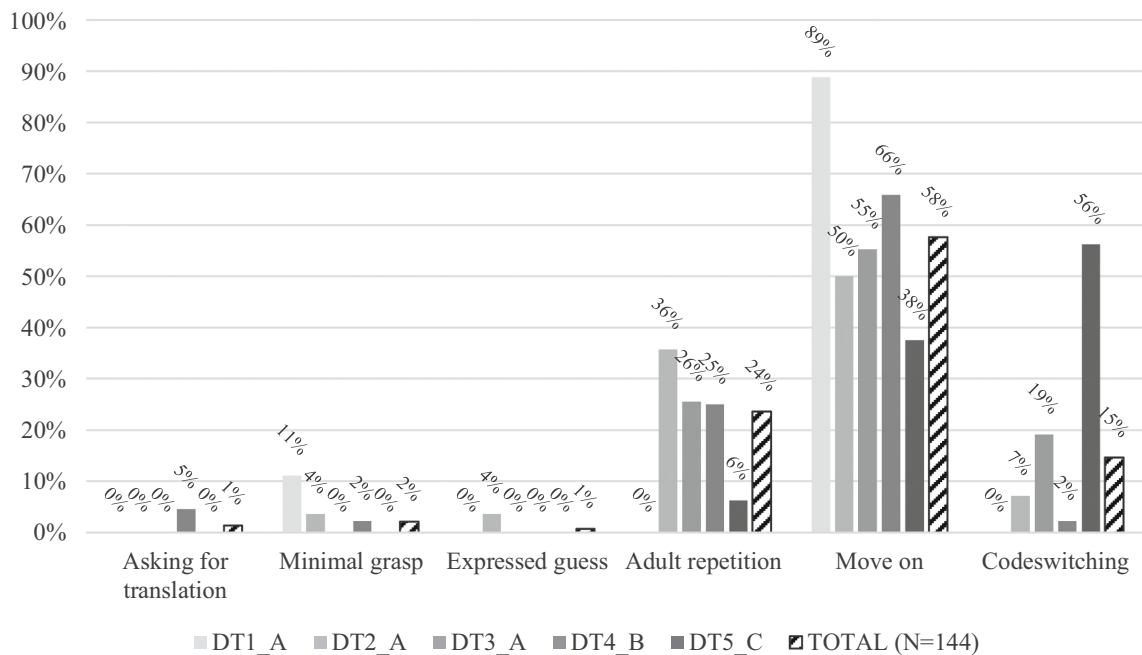**Fig. 2.** Composition of English input.

Fig. 3. Discourse strategies used by Dutch-speaking teachers.

grasp (2% in Dutch, 5% in English), were only used rarely. Adult repetition, placed in the middle of the spectrum, was used regularly in both the Dutch (24%) and English (17%) conversations. The move on strategy was used most frequently in both languages (58% in Dutch conversations, 48% in English conversations), creating bilingual contexts where the use of another language is permitted. Sometimes, teachers also codeswitched (15% in Dutch observations, 20% in English observations), not only allowing other languages to be used, but also actively using them. However, the degree to which teachers codeswitched differed. For example, in the Dutch observations, teacher DT1_A did not codeswitch at all (0%), whereas teacher DT5_C codeswitched in 56% of the cases when a child used a non-target language.
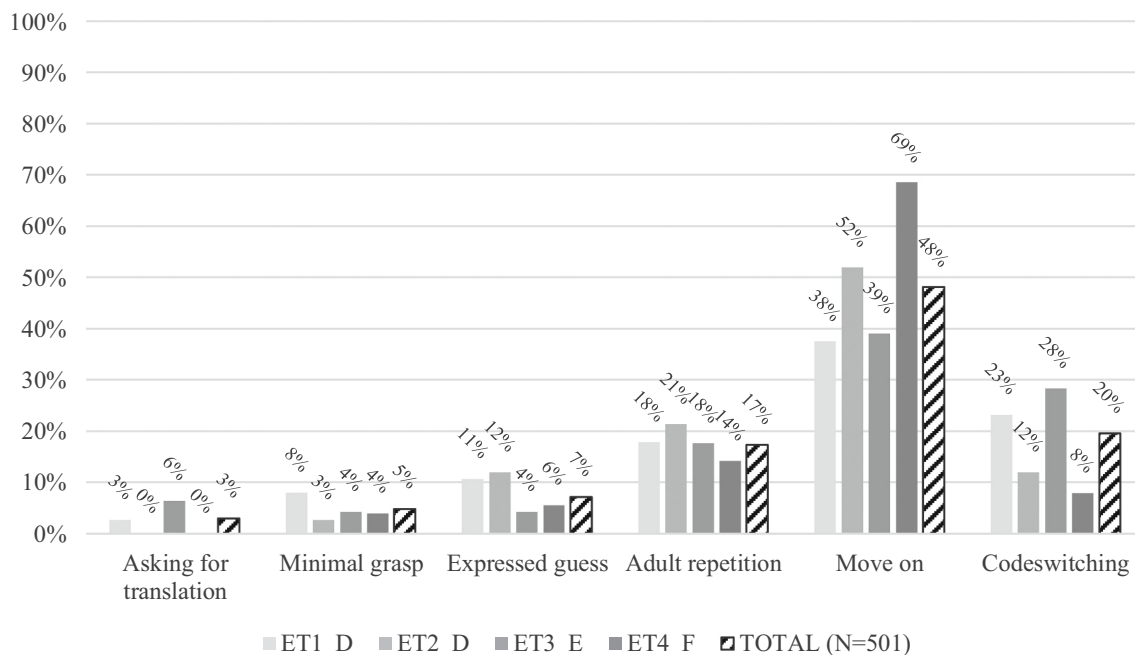
Fig. 4. Discourse strategies used by English-speaking teachers.

3.3. Teaching techniques

To find out what types of teaching techniques teachers employ in teacher-child interactions, teaching techniques were analyzed in the five broad categories (eliciting, modelling, feedback, rehearsing and metalinguistic information). See Fig. 5 for teaching techniques used by Dutch-speaking teachers and Fig. 6 for those used by English-speaking teachers. Also in these figures, the distribution of techniques is presented for each teacher separately, as well as for all teachers combined (the diagonally striped bars).

Results show that in both the Dutch and the English observations, eliciting and modelling strategies were the most frequently used strategies. However, Dutch-using teachers most frequently employed eliciting strategies (67%), whereas English-using teachers most
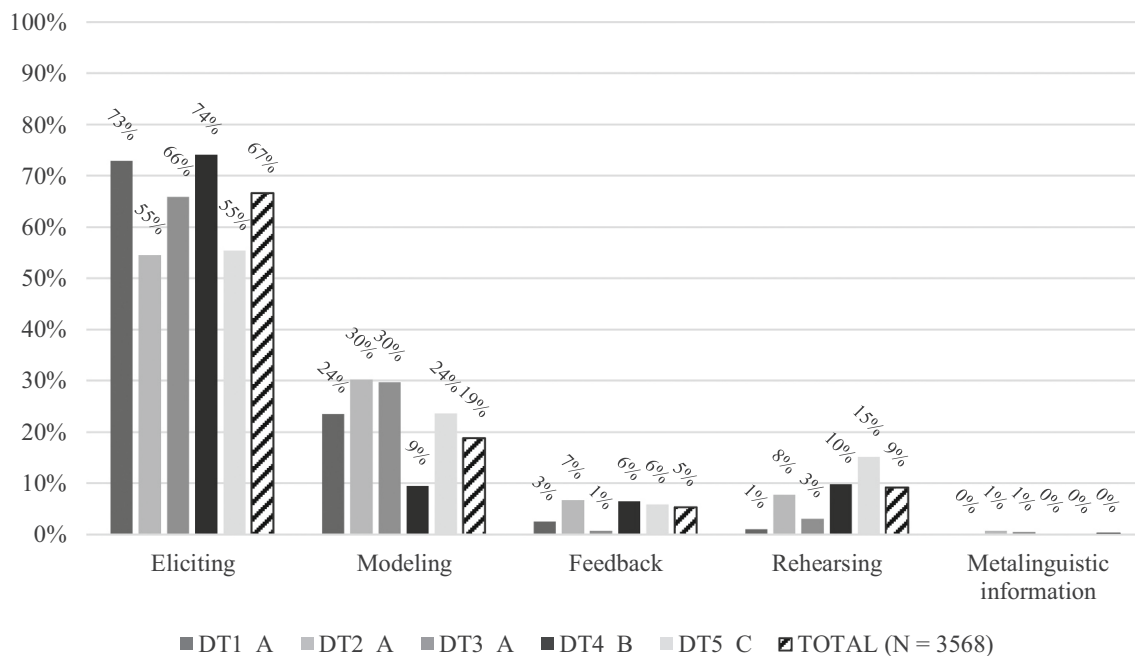

Fig. 5. Categories of teaching techniques used by Dutch-speaking teachers.
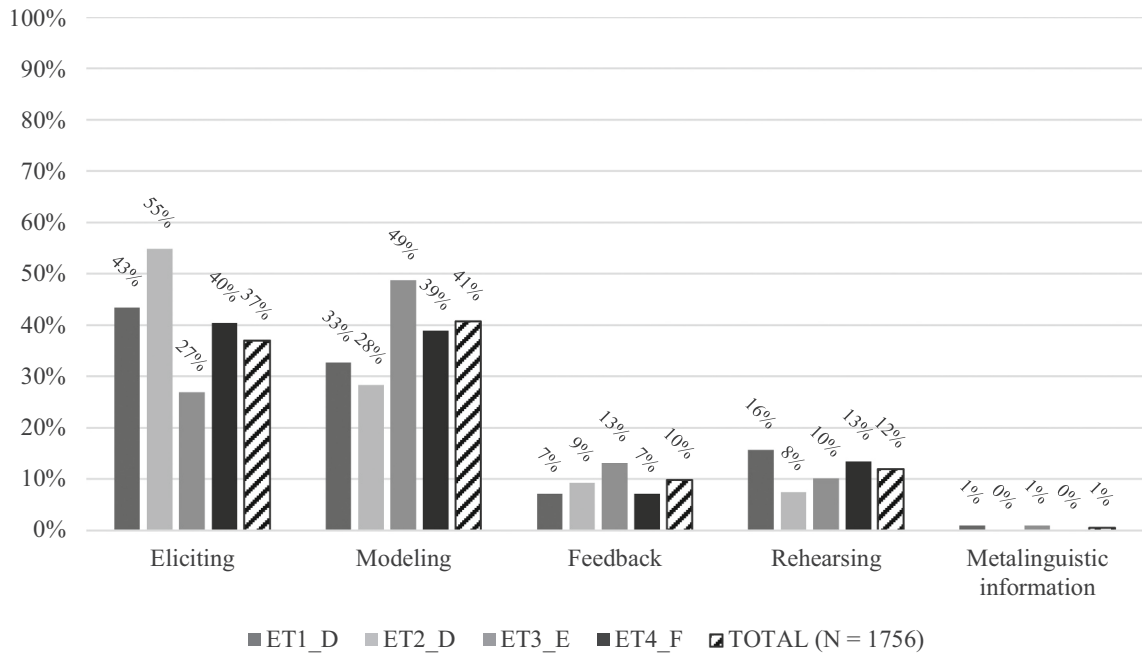
Fig. 6. Categories of teaching techniques used by English-speaking teachers.

often made use of modelling strategies (41%). In both the Dutch and English observations, feedback and rehearsing strategies were also used, but not as often as the eliciting and modelling strategies. Feedback (10%) and rehearsing (12%) strategies occurred more frequently in the English input than in the Dutch input (5% feedback, 9% rehearsing). Metalinguistic information was only very rarely provided (0% in Dutch, 1% in English observations).
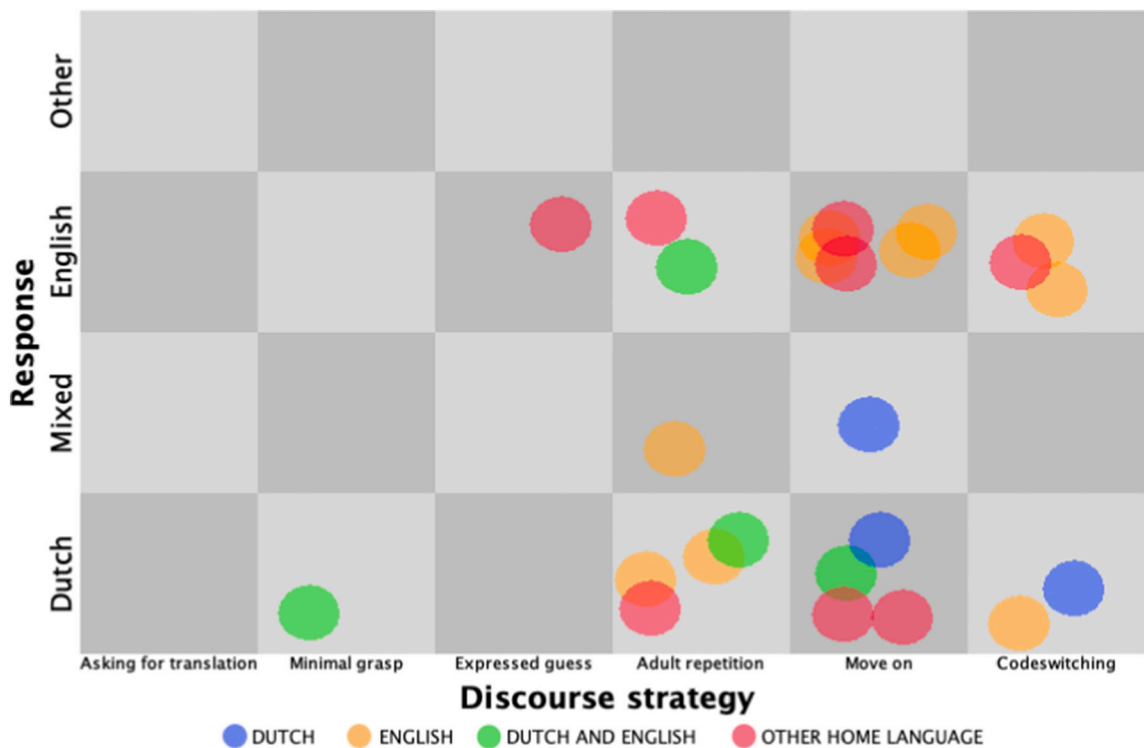

Fig. 7. Responses to discourse strategies in Dutch observations (N = 25).

3.4. Children's responses

To investigate how often the use of particular discourse strategies and teaching techniques co-occurred with active use of the target language, we analyzed which languages children used in response to strategies: (1) Dutch, (2), a mixed utterance (Dutch-English), (3) English, or (4) other languages.

3.4.1. Discourse strategies

Fig. 7 illustrates the distribution of responses to the discourse strategies used by the Dutch-using teachers, Fig. 8 shows the responses to discourse strategies used by English-using teachers. Each dot on the grid represents one response. Blue dots represent responses by children with Dutch as their home language, orange dots represent responses by children with English as their home language, green dots represent responses by children with both Dutch and English as their home languages and red dots represent responses by children with any other home language than Dutch or English. Non-verbal responses, as well as responses that were non-language specific or unintelligible were not plotted, since these were rare.

It often happened that a child did not respond to a discourse management strategy targeted at him or her. In those cases, other children often interrupted the conversation and interacted with the teacher instead. This explains why the number of discourse management strategies included in these analyses is substantially lower (25 for Dutch, 129 for English) than previously mentioned (144 for Dutch, 501 for English).

According to the Discourse Hypothesis, monolingual discourse strategies would more likely be responded to in the target language and it was expected that responses to bilingual strategies would be placed more towards the top, in the non-target language/other region, since children might not feel the need to adjust their language choice. Both grids visualize that strategies placed on the bilingual side of the spectrum were much more frequent than strategies on the monolingual end of the spectrum in both languages. Furthermore, Fig. 8 shows that in the English observations, the majority of responses to monolingual discourse strategies were responses in Dutch and not in English. These responses were mostly from Dutch-speaking children (blue dots). These results thus conflict with the Discourse Hypothesis, that predicted monolingual discourse strategies to lead to more responses in the target language. However, for Dutch observations, there was only one response to a monolingual discourse strategy (minimal grasp) that was included, that response was in Dutch.

Also, both Figs. 7 and 8 show that a substantial part of the responses to the bilingual discourse strategies consisted of responses in the target language. This means that, after talking in the non-target language and receiving a bilingual discourse strategy, children still decided to switch to the target language. These responses in the target language were not only given by children who grew up with the target language at home, but also by children who had other home languages. In some cases, this even happened after the teacher decided to move on (4 times in Dutch observations, 17 in English observations) or had switched to the child's language (2 times in Dutch observations, 5 times in English observations). This conflicts with the Discourse Hypothesis, that predicts that children might not feel the need to adapt their language choice in response to bilingual discourse strategies.

3.4.2. Teaching techniques

To analyze responses to the teaching techniques, similar grids were created. For these grids, only responses are presented to strategies that require a response, i.e., eliciting strategies and modelling strategies. On the grids in Figs. 9 and 10, again blue dots represent responses by children with Dutch as their home language, orange dots represent responses by children with English as their home language, green dots represent responses by children with both Dutch and English as their home languages and red dots represent responses by children with any other home language than Dutch or English. Non-verbal responses, as well as responses that were non-language specific or unintelligible were excluded from the grids. Apart from these types of responses, all other responses were included in the grids, meaning that regardless to whom the teaching technique was directed (group, other child), a response to the teaching technique (albeit by another child) counted as a response.

The grids in Figs. 9 and 10 show that (responses to) teaching techniques in Dutch observations (N = 862) were more frequent than in English observations (N = 443). Additionally, the grids show that the modelling strategy is more frequently used in English interactions that in Dutch interactions. In response to the eliciting strategies in both languages, the majority of responses consisted of responses in the target-language (57% in English observations, 77% in Dutch observations). Responses in the target-language were not only given by children that heard the target-language at home: in the Dutch observations, approximately 30% of Dutch responses to the eliciting strategies were given by children who did not hear Dutch at home, represented by the orange and red dots. In response to the eliciting strategies in the English observations, approximately 65% of English responses were given by children whose parents did not speak any English at home, represented by the blue and red dots.

The same goes for the responses to the modelling strategy used in both languages: in response to the modelling strategy in the Dutch observations, approximately 47% of responses in Dutch were given by children who did not acquire Dutch as a first language, represented by the orange and red dots. In the English observations, approximately 95% of English responses to the modelling strategy were given by children whose parents did not speak any English at home, represented by the blue and red dots. These findings suggest that eliciting and modelling strategies do co-occur with active use of the target language by L2 learners.

4. Conclusion and discussion

The goal of this study was to examine how teachers at daycare centers create language learning opportunities in conversations by investigating discourse strategies and teaching techniques that were employed in teacher-child interactions. Previous studies on
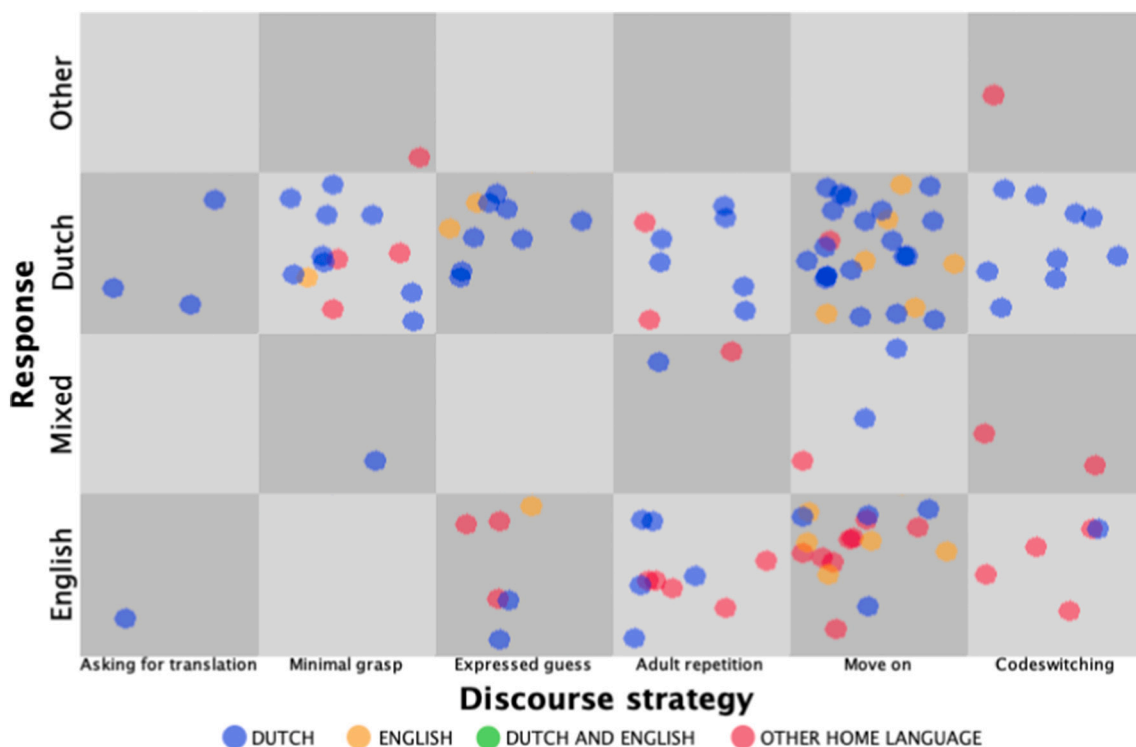
Fig. 8. Responses to discourse strategies in English observations (N = 129).
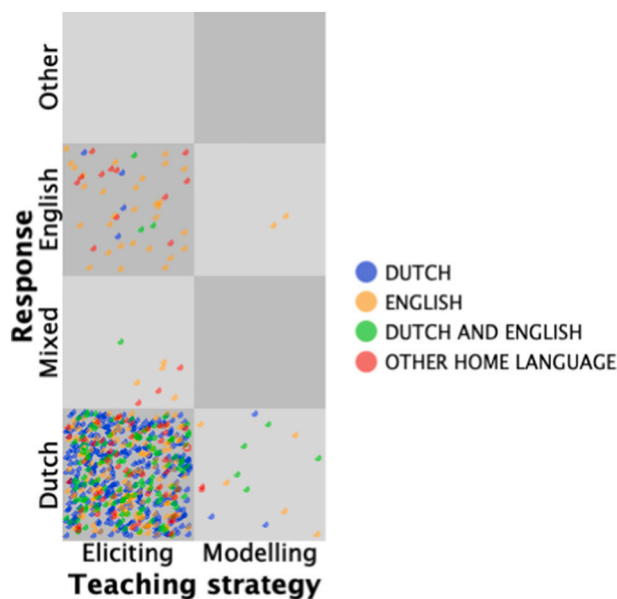

Fig. 9. Responses to teaching techniques in Dutch observations (N = 862).

interactions with young children in multilingual home settings showed that parents use a variety of discourse strategies and teaching techniques to sustain conversations with multilingual children (e.g. Döpke, 1992; Lanza, 2004). Results of this study show that similar to parents, teachers in this study also used discourse strategies to manage children's language choice, as well as a wide variety of teaching techniques to support language learning in multilingual classroom settings. Results showed that English-speaking teachers used more discourse strategies than Dutch-speaking teachers. The higher number of discourse strategies used by English-speaking teachers are due to the fact that in the English observations, more children produced utterances in a non-target language, resulting
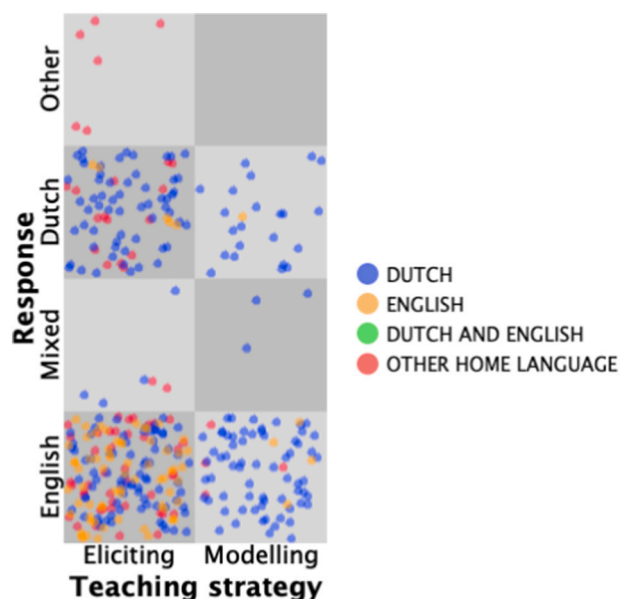
Fig. 10. Responses to teaching techniques in English observations (N = 443).

in a higher number of discourse strategies employed by English-speaking teachers than Dutch-speaking teachers. This could be because more children in English observations acquired English as a second language (83%) than children in Dutch observations (63%) who acquired Dutch as a second language. Also, since Dutch is the majority language in the Netherlands, it could very well be that children were already more used to communicating Dutch even though they did not acquire this as a home language, resulting in less use of non-target languages in conversations with Dutch-speaking teachers.

According to Lanza (2004), all discourse strategies have a potential of creating a context that is more or less monolingual or bilingual. With regards to these discourse strategies, in both Dutch and English observations, the use of discourse strategies placed on the bilingual end of the continuum was more frequent than the use of monolingual discourse strategies: the *move on* strategy was used most frequently in both languages, creating bilingual contexts where the use of another language is permitted. Furthermore, teachers sometimes even codeswitched to the non-target language used by the child, consequently not only allowing other languages to be used but also actively using them themselves. It should be noted that one Dutch-speaking teacher in this study did not codeswitch (teacher DT1_A). This teacher only produced 9 discourse strategies in total (1 *minimal grasp*, 8 *move on*). This shows that teachers in this study differed in how strictly they adhered to the one person, one language policy. This is in line with findings by Caporal-Ebersold and Young (2016) and Lugossy (2018) who also found that not all teachers decided to strictly follow the policy but decided to switch languages if a situation asked for it, e.g. if children's wellbeing was at risk.

Furthermore, results showed that Dutch-speaking teachers made more use of teaching techniques than English-speaking teachers and the types of teaching techniques that were employed in the two languages were different: whereas English-speaking teachers made more use of modelling strategies, Dutch-speaking teachers used more eliciting strategies. Additionally, English-speaking teachers produced more utterances that were part of songs and routines than Dutch-speaking teachers. However, it should be noted that one teacher in particular (teacher ET3_E) used a lot of songs and routines, approximately 47% of her utterances consisted of utterances in this category. This teacher was also the only teacher included in this study working at an organization where not a one teacher-one language principle was implemented: this teacher also spoke Dutch in some situations. However in this study, only English interactions were included.

Still, this finding indicates that the type of input in English that is being offered at bilingual daycare centers in the Netherlands is slightly different than the Dutch input. Previous studies have shown that songs and routines are used regularly in early L2 classrooms (Albaladejo Albaladejo et al., 2018; Elvin et al., 2007; Fleta Guillén, 2018; Lugossy, 2018). Recurring activities with fixed forms and content have proven to be useful in developing competence in the L2 and foster language learning due to its predictability (Björk-Willén, 2008; Fleta Guillén, 2018; Lugossy, 2018). From this, it seems as if the English input that is being offered can be considered more as L2 input: while Dutch input mostly takes shape in conversation, English input is sometimes offered more through songs and routines such as lunch rituals and morning greetings. This is also reflected in the difference in teaching techniques employed by teachers: whereas the Dutch-speaking teachers rely more on eliciting techniques, English-speaking teachers rely more on modelling techniques. Modelling techniques can also be considered more as being part of 'L2' input: these techniques present children with verbal models, making the language itself the central object of the conversation. Eliciting strategies on the other hand already presume more knowledge of the language in which the conversation is taking place, by assuming a child understands what is asked of them and requiring a direct verbal reaction.

Children's responses to discourse strategies showed that use of bilingual discourse strategies did not necessarily co-occur with

responses in a non-target language. Instead, children sometimes still decided to switch to the target language after receiving a bilingual discourse strategy such as the *move on* strategy or after a teacher had decided to codeswitch to the language used by the child. These findings conflict with the Discourse Hypothesis that states that children might not feel the urge to adapt their language choice in response to bilingual discourse strategies (Lanza, 2004). One reason for this conflicting finding could be that the Discourse Hypothesis is not applicable to classroom contexts: children might not feel the urge to switch languages in interaction with teachers as much as they would feel the urge to do so in conversations with their parents after the use of a monolingual discourse strategy. However, other quantitative studies on the Discourse Hypothesis in parent-child interactions also failed to find evidence in support of the hypothesis (Deuchar & Muntz, 2003; Mishina-Mori, 2011; Nicoladis & Genesee, 1998).

Still, it should also be noted that in these classroom observations it regularly happened that children did not respond to a discourse strategy targeted at them. Often times other children intervened in the conversation, leading to a relatively low number of responses included in these analyses (129 for English in total, 25 for Dutch in total). To further investigate discourse strategies employed by teachers in bilingual preschool classrooms and responses to these strategies, future research should include more classroom observations where fewer children are present at once. This way, there is less chance that one-on-one conversations are interrupted by other children, resulting in a higher number of responses to discourse strategies.

Teaching techniques have also shown to be useful in eliciting responses in the target language in both Dutch and English observations. The majority of responses to eliciting and modelling strategies in both Dutch and English observations consisted of responses in the target language, also by children that did not grow up with the target language at home. These findings suggest that eliciting and modelling strategies often co-occur with active use of the target language by L2 learners in this age group and are therefore useful tools in the early foreign language classroom.

However, our results should be interpreted with caution. The relatively low number of responses to the discourse strategies (especially when also taking into account the children's different language backgrounds) did not allow for the use of inferential statistical methods (e.g. correlations). Because of this, we were unable to statistically put the Discourse Hypothesis to the test. Similarly, we based our findings regarding the links between the use of eliciting and modelling strategies and children's language choice on the mere counting of co-occurrences. Therefore, we can only state that eliciting and modelling strategies often co-occur with active use of the target language, not that the use of eliciting or modelling strategies will ultimately lead to active use of the target language. We believe that future quantitative research on the relationships between the use of discourse strategies or teaching techniques and children's language choice in teacher-child interactions should investigate these links more thoroughly with larger sample sizes using inferential statistics.

It is also worth bearing in mind that even though recordings for all daycare centers were comparable and involved equal amounts of fruit/snack time, circle time, free play, lunch breaks and book reading, results of this study could also be influenced by teacher characteristics. Whereas some teachers were more outgoing and had many conversations with children, others were more introverted and mostly focused on classroom organization: this is also reflected in the variation in the amount of utterances that contained no teaching technique (38% - 57% in Dutch observations, 24% - 62% in English observations). Teachers mostly focusing on classroom organization usually produced more control-centered utterances, where the main goal was to control the child by using directives. These utterances typically did not contain a teaching technique. In addition, language proficiency might have also played a role in our findings: since the language of observation (English) was usually not the mother tongue for the English-speaking teachers, this might have influenced the teaching techniques they used. This could also be an explanation for the frequent use of songs and routines by English-speaking teacher ET3_E. Because she was not as proficient in English as she was in Dutch, she might have felt the need to rely more on songs and routines that require less proficiency in English as the use teaching techniques would.

Additionally, for our analyses we partly relied on predefined frameworks such as Lanza's (2004) parental discourse strategies. In doing so, we have limited the scope of this study to the use of and reactions to these strategies and teaching techniques only. However, we are fully aware that this teacher-child interaction data could also be analyzed in terms of other approaches to bilingual interaction, such as conversational turn-taking or an in-depth analysis of children's codeswitching. Similarly, our study was purely an observational study, meaning that we did not conduct interviews with the teachers to gain further insight into the speakers' motivations for their language choices. Future research could also include interviews with teachers in addition to the classroom observations, to further decipher the motivations that underlie the use of certain discourse strategies and teaching techniques.

All in all, results of this study have revealed that teachers are able to create many different language learning opportunities in conversation by employing a wide variety of teaching techniques and discourse strategies in multilingual classroom settings, regardless of language of observation. Additionally, Lanza's (2004) *parental discourse strategies* framework has shown to be a fruitful framework to analyze discourse strategies employed by teachers in multilingual teacher-child interactions. This study however, failed to find support for the Discourse Hypothesis, stating that the use of monolingual discourse strategies often co-occurs with use of the target language. Lastly, by studying the link between teaching techniques and use of the target language by children in more detail, this study has provided evidence that teaching techniques such as eliciting and modelling are effective tools in eliciting responses in the target language by L2 children in early foreign language classrooms.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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