
This is the **accepted version** of the journal article:

Pladevall Ballester, Elisabet. «Pair dynamics and language-related episodes in child EFL task-based peer interaction». *Language Teaching for Young Learners*, Vol. 3 Núm. 2 (2021), p. 189-213. 25 pàg. DOI 10.1075/ltyl.20007.pla

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To appear in *Language Teaching for Young Learners* (2021)

Pair dynamics and language-related episodes in child EFL task-based peer interaction

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Previous research shows young learners are indeed able to interact in a foreign language (FL) and negotiate for meaning while also attending to form. One of the variables that has been least studied among young learners (YLS) in FL contexts is the kind of relationships established among the members of a dyad and how the nature of pair dynamics affects the learners' ability to attend to language. The present study explores the pair dynamics and the frequency and types of language learning opportunities in the form of language-related episodes (LREs) that emerge during peer interaction in a spot-the-differences task completed by young learners in an English as a Foreign Language (EFL) context. We also examine the effects of age and pair dynamics on the production of these LREs. Results suggest that children interact mainly using collaborative patterns and can actually attend to language in episodes which are mainly meaning-focused and are resolved particularly in expert/novice dyads. Age has been found to significantly affect the production of LREs but pair dynamics seems to be less determinant. Findings corroborate the need for YLS to be given the chance to interact with their peers in class to foster learning opportunities.

Keywords: child EFL, peer interaction, pair dynamics, LREs.

1. Introduction

The study of child task-based peer interaction in English as a Foreign Language (EFL) contexts is becoming more and more relevant in second language acquisition (SLA) research (García Mayo, 2018). The growing number of early foreign language (FL) teaching programs and their notable differences with the long-researched forms of early SLA in immersion and second language contexts makes the study of FL classrooms, learners, skills and language development a necessary aim in the field (García Mayo, 2017; Garton & Copland, 2019; Murphy & Evangelou, 2016; Rokita-Jáskow & Ellis, 2019). Of particular interest is the focus on FL oral production and, more specifically, on peer interaction communicative practices among young learners, which might not be frequent in a FL context (Copland, Garton & Burns, 2014).

The L2 learning potential of peer interaction has been claimed to be linked to the opportunities it brings to the learners to negotiate for meaning, internalise pre-learned language structures, provide corrective feedback, produce pushed and modified output and attend to form while performing a task, all of which are key processes in L2 and/or FL development (Mackey & Goo, 2007; Philp & Tognini, 2009; Philp, Adams & Iwashita, 2014, among many others). The quantity and quality of L2 peer interaction

depend on a number of mediating factors such as age, task type, proficiency level, modality of interaction, type of instruction or pair dynamics (Sato & Ballinger, 2016). The learning potential that peer interaction unfolds considering these mediating variables will necessarily be different among younger populations and in FL learning situations. Further research in this emerging context is therefore fundamental to understand language development processes and develop key effective pedagogical strategies (García Mayo, 2018).

Previous studies have suggested that foreign language child learners are able to complete peer interaction tasks and negotiate for meaning. Type of instruction, age, task type and/or task repetition and proficiency pairing may affect the amount and type of this meaning negotiation (Azkarai & Imaz Agirre, 2016; García Mayo & Imaz Agirre, 2016; 2017; García Mayo & Lázaro Ibarrola, 2015; Pinter, 2007; Pladevall-Ballester & Vraciu, 2020). L1 use has been reported to be generally low but common and useful for task completion purposes in this context (Azkarai & García Mayo, 2017; García Mayo & Lázaro Ibarrola, 2015; Lázaro Ibarrola & Hidalgo, 2017; Pladevall-Ballester & Vraciu, 2017; Vraciu & Pladevall-Ballester, 2020) and children have also been reported to be able to engage in form negotiation while interacting (Azkarai & Kopinska, 2020; Calzada & García Mayo, 2020; García Mayo & Imaz Agirre, 2016; 2019). One of the variables that has been least studied among young learners (YLS) in FL contexts is the kind of relationships established among the members of a dyad in peer interaction (García Mayo, 2018). Research on adult learners has found that certain patterns of dyadic interaction tend to favour language learning opportunities and learning outcomes (Storch, 2002; 2009; Storch & Aldosari, 2013) but little is known about how dyad types and the nature of pair dynamics in child peer interaction affect the learners' ability to attend to language (Azkarai & Kopinska, 2020; Butler & Zeng, 2015; García Mayo & Imaz Agirre, 2016; 2019) and how these variables evolve with time, as age and proficiency level increase. As Navés, Miralpeix and Celaya (2005) noted, it is particularly complex to separate grade, age and proficiency in EFL school contexts, so the time dimension should be taken to include age and also an inevitable (even if discrete) increase in proficiency.

With the aim to fill this gap, the present study explores the pair dynamics and the frequency and types of language learning opportunities in the form of language-related episodes (LREs) that emerge during peer interaction in a spot-the-differences task completed by YLS in an EFL context. We also examine the effects of age (and the subsequent increase in proficiency) and pair dynamics on the production of these LREs. To set the background for our study, we will introduce the construct of pair dynamics and its relationship with language learning opportunities and we will then review the existing related studies on YLS in a FL context.

2. Literature review

2.1 Pair dynamics and language learning

One of the mediating variables that affect peer interaction and, more particularly, how peer interaction might result in L2 learning is the kind of relationships that are established between the members of a dyad. As Sato and Ballinger (2016) highlight, the “learners’

ability to profit from peer interaction is greatly affected by the social dynamics of their group or pair” (p. 19), which will determine the learners’ patterns of (lack of) collaboration and feedback provision in their language production.

Building on Vygotsky’s (1978) conception of learning as a result of social interaction, Storch (2002) carried out a longitudinal study on the nature of dyadic interaction among adult English as a Second Language (ESL) learners. The author extended earlier work on group and pair dynamics in L2 settings which suggested that some behavioural patterns were more likely to foster co-construction of language knowledge (Donato, 1988; 1994; Lockhart & Ng, 1995). The learners in her study performed different tasks and the effects that their pair dynamics had on their learning outcomes were also analysed. Storch identified four patterns of interaction, namely collaborative, dominant/dominant, dominant/passive and expert/novice, based on their degree of mutuality and equality (Damon & Phelps, 1989). Mutuality between the members of a dyad refers to “the level of engagement with each other’s contributions” (Storch & Aldosari, 2013, p. 37) and equality refers to “the level of contribution and control over the task” (Storch & Aldosari, 2013, p. 37). In collaborative pairs, both learners participate to the same extent in all parts of the task and request and offer feedback in relation to the interlocutor’s utterances. Dominant/dominant pairs display a high degree of equality in that both learners equally contribute to the task but without engaging with each other’s contributions, thus showing a low degree of mutuality. In dominant/passive pairs, both the degree of mutuality and equality are low: the dominant member of the dyad controls the task and does not request or offer feedback or even take the interlocutor’s contributions into account. The passive member of the dyad hardly contributes to the task. The expert/novice type shows high mutuality, where feedback is requested and offered by the novice and the expert members, respectively, and low equality in that the expert learner tends to participate more actively in the task, although s/he encourages the novice learner to take part in it as well. Storch (2002) found that the collaborative pattern prevailed among the 10 dyads she examined and that these patterns were pretty stable across tasks and over time. As regards language learning outcomes in the different patterns of interaction, Storch found more evidence of language development in the collaborative and expert/novice patterns than in the dominant/dominant and the dominant/passive types, hence pointing at high mutuality as being more productive and more conducive to learning opportunities. The members of such dyads, particularly the ones who display collaborative pair dynamics, tend to experiment with language and resolve language deliberations more often than other patterns of interaction (Rouhshad & Storch, 2016; Storch, 2002).

These types of pair dynamics have been mainly explored in relation to their implications for adult language learning through the analysis of language learning opportunities or attention to form (Kim & McDonough, 2008; Moranski & Toth, 2016; Storch, 2002, 2009; Storch & Aldosari, 2013; Tan, Wigglesworth & Storch, 2010; Watanabe & Swain, 2007) and language learning outcomes (Storch, 2002, 2009; Watanabe & Swain, 2007). While language learning outcomes have been measured through the presence of specific linguistic items and/or their accuracy or the use of pre-post tests, language learning opportunities have been operationalized as LREs. LREs are defined as “[...] any part of the dialogue in which students talk about the language they are producing, question their language use, or other-or self-correct” (Swain, 1998, p. 70).

They are instances of language deliberation, explanations, provision of and request for feedback, form and meaning negotiation and/or implicit or explicit corrections (Leeser, 2004; Storch, 2008; Williams, 1999). Research has explored their focus (i.e. lexical or grammatical) (Swain & Lapkin, 1998) as well as their frequency and outcome (i.e. resolved and unresolved). They may result in language learning or consolidation of language knowledge and they represent language learning in progress (Gass & Mackey, 2007).

Although they might not strictly follow Storch's (2002) taxonomy, studies on pair dynamics and LREs and/or language learning outcomes both suggest that dyads with collaborative pair dynamics tend to be more conducive to L2 learning (Chen, 2017; García Mayo & Azkarai, 2016; Kim & McDonough, 2008; Moranski & Toth, 2016; Storch, 2002, 2009; Storch & Aldosari, 2013; Tan et al., 2010; Watanabe & Swain, 2007). Yet, most previous research on pair dynamics, LREs and their potential interaction has been conducted with adult L2 learners and studies which explore the nature of dyadic interaction and its relationship with learning opportunities among YLs remain scarce (Oliver & Azkarai, 2019).

2.2 Previous research on young learners' pair dynamics and language learning

As in adult peer interaction, children's L2 and FL performance in task-based interaction might also be affected by the different relationships and pair dynamics that are established between the members of a given dyad (Oliver & Azkarai, 2019; Oliver & Bogachenko, 2019). The extent to which they collaborate or scaffold their contributions will affect the co-construction of meaning and form and the language learning opportunities that might arise in peer interaction.

To the best of our knowledge, the first study to apply Storch's (2002) model of pair dynamics to young learners of ESL was Ives (2004), a case study in an upper primary school Australian context. Three non-native 10-12 year-old children were paired up with three native classmates and were analysed in relation to their interactional styles and their language learning opportunities and missed opportunities during collaborative tasks. Her analysis suggests that the children's interactional styles seem to determine their language learning opportunities and their L2 language production. The author highlights that just pairing students will not suffice to foster language learning and that the conditions under which interaction occurs should be taken into consideration to maximise the students' learning potential.

Also in a child ESL context in Australia, following Storch's (2002) analysis and incorporating the expert/passive pattern (Watanabe & Swain, 2007) and the parallel/passive pattern (Butler & Zeng, 2015) or cooperative pattern in Tan et al.'s (2010) words, Oliver and Azkarai (2019) explored the impact of task and proficiency on patterns of interaction. Thirty-two non-native speakers (NNSs) – sixteen low (A1) proficiency and sixteen high (A2) proficiency learners- were paired up with thirty-two age and gender-matched native-speakers (NSs) and carried out a one-way and a two-way task. In the one-way task, the NNs had to describe an outline picture that the NSs in the dyad had to draw and the two-way task was a picture placement task. Results show that the prevailing

pattern of dyadic interaction was collaborative in both tasks, followed by the dominant/passive one and less frequently by the other types. When adding proficiency into the analysis, the authors found that high proficiency-NSs pairs mainly displayed collaborative patterns in the one-way task but only seven pairs showed this pattern of interaction in the two-way task. Much greater variety was found in low proficiency-NSs pairs, who increased their degree of mutuality in the two-way task, where eleven out of sixteen pairs displayed patterns of high mutuality (i.e. collaborative and expert/novice). After highlighting relevant differences with respect to adult ESL interaction, the authors conclude that for this age group, there is a “complex dynamic of influences upon patterns of interaction” (p. 99), which surely makes this population in need of further research.

Turning now to EFL young learner contexts, Butler and Zeng (2015) analysed the patterns of dyadic interaction, topic development and turn taking of twenty-four fourth grade and twenty-four sixth grade Chinese EFL learners completing collaborative tasks in English and Chinese. Fourth graders showed more difficulties to complete the tasks and mainly displayed a dominant/dominant pattern in Chinese and a passive/parallel pattern in English. The authors found sixth graders showed a more collaborative pattern of dyadic interaction in the two languages.

As regards the relationship between patterns of interaction and language development, Ahmadian and Tajabadi (2017) explored the patterns of interaction while completing vocabulary tasks and their potential relation to vocabulary learning in an EFL pre-elementary Iranian context. In a pre-post test design, eighteen very YLs (mean age= 6.3) were paired up into nine dyads who were instructed on the target vocabulary and completed recognition and production tasks over six sessions. Results showed that the most common pattern of interaction was the collaborative one, followed by the dominant/dominant and expert/novice, while the least common pattern was the dominant/passive one. The study also found that the collaborative and the expert/novice pairs were the ones to obtain higher post-test means in the vocabulary learning measurement task.

In the Spanish young learner EFL context, which is the context of the present study, García Mayo and Imaz Agirre (2016) studied the effect of exact and procedural task repetition on fifty-four 8-9 and sixty-six 9-10 year-olds Spanish-Basque EFL learners’ production of meaning negotiation strategies and on their pair dynamics while completing a spot-the-differences task at two testing times being two months apart. Results showed no significant effect of task repetition on the children’s production of meaning negotiation strategies and, as for pair dynamics, the younger group mainly displayed a collaborative pattern at time 1. At time 2, the dyads who had featured a passive/parallel pattern turned to a collaborative one both on the exact and the procedural repetition groups. The older group mainly showed a passive/parallel pattern at time 1 in both groups. While exact task repetition only caused one change of pattern into collaborative dynamics, procedural task repetition had a much greater effect turning five more pairs into featuring the collaborative pattern. The authors point to motivational factors to potentially explain the fact that collaborative patterns are more frequent in the younger than in the older group.

To our knowledge, the most recent studies to explore EFL YLs’ pair dynamics and language learning opportunities are García Mayo and Imaz Agirre (2019) and Azkarai

and Kopinska (2020). The former analysed the impact of task modality and pairing method on 11-12 year-old Spanish EFL learners' dyadic interaction patterns and production of LREs. Twelve dyads were proficiency paired, eight dyads were teacher-assigned pairs and eleven more were self-selected pairs. All learners completed an oral task and an oral+written task. Findings showed that the great majority of dyads displayed a collaborative pattern in both task modalities and in all pairing methods. Yet differences emerged when comparing task modalities within pair formation groups and pair formation groups within task modalities. The proficiency paired group was more collaborative in the oral+written task and the teacher-assigned and self-selected groups were more collaborative in the oral task. No significant differences were found within the oral task, but in the oral+written task, the proficiency paired group was significantly more collaborative than the other groups. As for LREs, a task modality effect was found with the oral+written task displaying a greater number of LREs. Lexical LREs were more frequent than form LREs in both task modalities and a higher percentage of resolved LREs was found in the oral+written task, all confirming previous research on adult populations. The proficiency paired group was the one to produce more LREs. In a similar context, Azkarai and Kopinska (2020) analysed 62 11-12 year-old EFL learners' patterns of interaction, levels of engagement in LREs and task motivation while carrying out a written dictogloss task in pairs. Results showed almost as many cooperative (i.e. passive parallel) as collaborative patterns and both types represented the vast majority of the pairs. As for LREs, the collaborative pairs produced the highest number of LREs in general and the highest number of elaborate LREs. Learners showed high levels of task motivation, which increased after the task, but only significantly in the case of cooperative dyads. No significant relationship was found between the dyads' level of engagement in their LREs and their task motivation.

Although the body of research on pair dynamics and language learning opportunities among YLs in EFL contexts is increasing, the scarce number of studies on the different variables and how they might affect each other point towards the need for further research. This study attempts to contribute new data to the field.

3. The study

Within a primary school EFL context, the study aims to explore the pair dynamics that emerge in child EFL oral meaning-focused task-based interaction and the extent to which the children attend to language through LREs during the completion of the task at two different data collection times. We will also focus on whether age and pair dynamics have any effects on the production of these LREs and their types. The following four research questions guide the study:

1. What types of pair dynamics are observed in child EFL task-based peer interaction?
2. Does pair dynamics evolve as age and proficiency increase?
3. To what extent do child EFL learners produce LREs during task-based peer interaction and what types are most frequently produced?
4. What is the effect of age and proficiency increase and pair dynamics on the production of LREs and its types during child EFL task-based peer interaction?

Based on previous research, child EFL learners are expected to exhibit the four pair dynamics in Storch's (2002) model, although we expect the collaborative pattern to prevail in children's interactions (Ahmadian & Tajabadi, 2017; Butler & Zheng, 2015; García Mayo & Imaz Agirre 2016; 2019; Oliver & Azkarai, 2019). Studies reporting on different data collection times have determined relative stability of pair dynamics (Storch, 2002 for adults and García Mayo & Imaz Agirre, 2016 for children). Yet Oliver and Azkarai (2019) and García Mayo and Imaz Agirre (2016) found that low proficiency (or younger) learners tended to collaborate more than higher proficiency (or older) learners. As regards LREs, child learners are expected to produce low numbers of LREs, considering the task is oral (see García Mayo & Imaz Agirre, 2019) and the majority of LREs are expected to be lexical or meaning oriented (García Mayo & Imaz Agirre, 2019; Kim & McDonough, 2008; Leeson, 2004; Payant & Kim, 2017). Finally, LREs are expected to be affected by age (Leeson, 2004; Storch & Aldosari, 2013) and pair dynamics (García Mayo & Azkarai, 2016; Kim & McDonough, 2008; Moranski & Toth, 2016; Storch & Aldosari, 2013; Tan et al., 2010; Watanabe & Swain, 2007), with older and more proficient learners producing a higher number of LREs and the more collaborative patterns of dyadic interaction fostering a higher number of learning opportunities.

3.1 Participants

Forty bilingual Catalan/Spanish primary school children (21 male, 19 female) learning EFL in a low exposure context participated in the study. They were 9-10 years old upon the first data collection and 11-12 at the end of the study (4th and 6th graders at the two data collection times). At 4th grade, they were receiving 2 hours per week of instructed EFL and a 45-minute session of Science CLIL (Content and Language Integrated Learning) per week. They had accumulated 300 hours of in-school exposure over five years, thus being a clear example of limited exposure to the target language within a prolonged, non-intensive EFL programme. At 6th grade, they were receiving 3 hours per week of instructed EFL and had accumulated a total of 510 hours of in-school exposure. The children were paired up by the teacher to carry out the tasks, resulting in 20 dyads, who were the same at time 1 and at time 2 and who represented the variety of slightly different proficiency levels and different class attitudes and behaviours. Permission was unfortunately not obtained to run a placement test in the school but the standard level of English in Catalan primary education in 4th and 6th grades ranges between elementary and A1.

Upon first data collection, a total of 16 out of 40 (40%) students were attending extracurricular EFL afternoon sessions. This percentage raised up to 53% (21 out of 40) students at 6th grade, although the majority of them had only started the same year or the year before and the number of hours per week ranged from 1 to 2.5, thus keeping exposure low.

3.2 Instruments and procedures

The data was obtained through an oral open two-way task, namely a spot-the-differences task (Mackey, 2012) in which the learners, in pairs, were given 7 minutes to find as many differences as they could between their two different pictures by asking each other questions and providing descriptions of the pictures. No specific target number of

differences was given, and this is why our spot-the-differences task is considered open. There being a two-year difference between time 1 and time 2, the same task was used at both data collection times. The two pictures displayed a beach with different weather conditions and children and adults doing different activities or wearing different clothes. The researchers made sure the participants were generally familiar with the vocabulary to be used by previously reviewing the textbooks used in class and checking with the teachers. The learners were taken to the meeting room next to their classroom in pairs and instructions were given in Catalan/Spanish to make sure they were properly understood. Before starting the task, the researchers would ask some brief personal questions in English to the children as a warm-up activity and in order to get the children to start speaking in English.

3.3 Data analysis

The children's oral production was audio recorded and then transcribed using the CHAT conventions within the Child Language Data Exchange System (CHILDES) database (MacWhinney, 2000). The data for each dyad and each data collection time was first analysed in relation to the most representative type of dyadic interaction in each transcript (i.e. collaborative, expert-novice, dominant-passive, dominant-dominant) following Storch (2002). In order to classify the transcripts, we considered the degree of participation of each member of the dyad and their engagement in the interaction by requesting and/or providing feedback, providing scaffolding, incorporating the interlocutor's feedback or contributing to the interaction coherently (see the Discussion section for examples).

Each transcript was also examined in relation to frequency and types of LREs (Swain & Lapkin, 1998; 2001). Following earlier research on LREs (García Mayo & Azkarai, 2016; Ross-Feldman, 2007; Storch, 2008), the types of LREs were further coded on whether they focused on meaning (i.e. lexical) or on form (i.e. grammatical) and whether they were solved (both target-like and non-target-like) or non-solved. Auto-solved LREs (i.e. instances of self-repair) were also included in the analysis, where one of the learners in the dyad starts an LRE which is then solved without requesting help from the interlocutor (Adams & Ross-Feldman, 2008; Basterrechea & Leiser, 2019).

Two researchers coded the transcripts according to dyadic interaction types and the percentage agreement reached was of 95%, so there was discrepancy in one of the transcripts, which was solved through discussion between the two researchers. As for the frequency and types of LREs, the same two researchers coded the transcripts and the intraclass correlation coefficient (ICC) was .982 with a 95% confidence interval from .966 to .990 ($F(39)=108.768, p<.001$).

The following examples from the data analysed illustrate the types of LREs. Example (1) is a frequent example of meaning-focused LRE, where a learner asks for the English lexical item and his/her interlocutor provides it in the next turn and the first learner incorporates it in his/her turn. In example (2), a form-focused LRE, child A corrects child B in his/her use of the progressive form, which is then incorporated in child B's turn. Example (3) illustrates a meaning-focused LRE which is non-solved. Child A does not know the English equivalent to an L1 word and asks child B, who does not know either.

Child A abandons the utterance altogether and changes focus describing another feature of the picture. And (4) exemplifies a meaning-focused auto-solved LRE, where child A does not know the English equivalent to an L1 word and while child B thinks about an answer, child A comes up with the translation and incorporates it into his/her turn:

(1) Meaning-focused, solved, target-like LRE (Dyad 1, T2)

*CHA: in my picture is a... <cómo es bandera?>@s: spa
[how do you say flag]
*CHB: flag
*CHA: in my picture there's a red flag

(2) Form-focused LRE, solved, target-like LRE (Dyad 14, T1)

*CHB: do you have boys football play?
*CHA: es@s:spa playing
[is]
*CHB: ay@s:spa boys playing football
[oops]

(3) Meaning-focused, non-solved LRE (Dyad 8, T2)

*CHA: in my picture...<com es diu núvol en anglès>@s:cat?
[how do you say cloud in English]
*CHB: I don't know
*CHA: in my picture I have a boy snowboarding

(4) Meaning-focused, auto-solved LRE (Dyad 15, T2)

*CHB: You have a boy surfing?
*CHA: no, you have a boy play fish uhm, <com és pescant>@:cat?
[how do you say fishing]
*CHB: mmm
*CHA: ah, go fishing, you have a boy fishing?
*CHB: no, you have a boy?

IBM SPSS 23 was used in order to analyse the data. In order to test if pair dynamics changed significantly over time, a McNemar-Bowker test was performed. The types of LREs were then compared among each other using Wilcoxon signed-rank tests and a generalised linear mixed model was performed with time and pair dynamics as fixed factors and the percentage of LREs and their types as the dependent variables. Subject (i.e. pairs) was included as a random effect. The alpha level of the tests and the model was set at 0.05. The following section will describe the results obtained.

4. Results

4.1 Pair dynamics

Three pair dynamics types were observed in the participant dyads to different extents. At the two data collection times, the collaborative pattern was the type that prevailed (70% and 60%; 14 and 12 out of 20, respectively), which was followed by expert/novice (20% - 4/20) and dominant/passive (10% - 2/20) at time 1 and by dominant/passive (25% - 5/20) and expert/novice (15% - 3/20) at time 2. No instances of the dominant/dominant pattern were observed. Table 1 illustrates the frequencies and percentages of each type at time 1 (i.e. vertical column on the right) and time 2 (i.e. bottom row). We can also see the extent to which dyads kept their same pair dynamics or changed it over time, namely 60% (12/20) of the total number of dyads kept the same pair dynamics, while 40% (8/20) of them changed it.

A McNemar-Bowker test was performed to determine if changes between the two data collection times were significant. Pair dynamics did not evolve significantly from time 1 to time 2 ($\chi^2 = 3.200$ (2), $p = .202$). More specifically, 45% (9/20) of the total number of dyads remained collaborative, 5% (1/20) remained expert/novice and 10% (2/20) remained dominant/passive. The main changes occurred from collaborative to dominant/passive (3 dyads) and expert/novice (2 dyads), while 3 expert/novice became collaborative and no change was found in the dominant/passive dyads.

| | | TIME 2 | | | Total |
|--------|------------------|---------------|---------------|------------------|--------|
| | | Collaborative | Expert-Novice | Dominant-passive | |
| TIME 1 | Collaborative | N 9 | 2 | 3 | 14 |
| | | % 45.0% | 10.0% | 15.0% | 70.0% |
| | Expert-Novice | N 3 | 1 | 0 | 4 |
| | | % 15.0% | 5.0% | 0.0% | 20.0% |
| | Dominant-passive | N 0 | 0 | 2 | 2 |
| | | % 0.0% | 0.0% | 10.0% | 10.0% |
| Total | | N 12 | 3 | 5 | 20 |
| | | % 60.0% | 15.0% | 25.0% | 100.0% |

Table 1. Frequency of pair dynamics types at the two data collection times

The following extracts illustrate the three dyadic patterns found in our data. In (5) we see a collaborative dyadic pattern, where the two learners show high degree of equal participation in the task and high mutuality, by coherently responding to each utterance, requesting and providing feedback to each other and incorporating it into the interaction:

(5)

- *CHB: You see a bar?
- *CHA: eh yes, I see a bar and I have many childrens... playing in the sand, and you?
- *CHB: Yes, and I see, and you see a ball?
- *CHA: ehm yes, I see a ball with two stripes colour, and you see a plane with a flag?
- *CHB: No... oh, yes, yes! I see, I see...and and I see a shark.
- *CHA: uhm I don't have a shark, but I have... a castle sand.
- *CHB: I don't have a castle sand but I have a human that that it's fishing.

*CHA: okay, eh in your picture you have eh two birds?
 *CHB: No. I I have no, I have different.
 *CHA: okay, eh I see in my picture eh two mens...one is with a mm... diary,
 and the other is sleeping.
 *CHB: Ah yes, I see. And you see a human was sale coconuts?
 *CHA: eh no, the men of my picture is cutting a fish.
 *CHB: Ah, and you see a...<bandera com es deia?>@s: cat
 [how did you say flag?]
 *CHA: Flag
 *CHB: aha, you see a you see two flags green?
 *CHA: No, I see one flag eh red...and you see a mm a children do surfing?
 *CHB: No, no, but I see a you see a a big cloud?
 *CHA: Yes, of colour blank
 *CHB: White!
 *CHA: White [=both laugh].

(Dyad 11, Time 2)

In (6) below, we see an expert/novice pattern where child A takes the lead but also scaffolds child B, the novice, and provides translations and model sentences that child B incorporates into the interaction. Child B is not passive and also asks child A about task-related issues as well as the lexical problems he encounters. Their degree of participation in the interaction is different, pointing towards low equality, and child A often scaffolds child B's turns and provides feedback to child B's requests, which shows high mutuality.

(6)

*CHA: There there are trash in your picture?
 *CHB: What is trash?
 *CHA: és@s:cat &mm basura@s:spa
 [it is trash]
 *CHB: ah, no it isn't
 [...]
 *CHA: And seagulls?
 *CHB: seagulls?
 *CHA: eh ...<las gaviotas>@s: spa
 [the seagulls]
 *CHB: yeah, I have two. And you?
 *CHA: in my picture there are three.
 [...]
 *CHB: in your picture there's a girl doing a castle with...
 *CHA: eh no, but I have a girl touching a salvavidas@s: spa
 [lifevest]
 *CHB: okay.
 *CHA: And I and I have two eh one one one cloud.
 *CHB: What?
 *CHA: a cloud, <una nube>@s: spa
 *CHB: ah yes, me too.

(Dyad 10, Time 2)

Extract (7) is an example of a dominant/passive dyad, where child B leads the interaction and asks the great majority of the questions related to the picture differences while he

does not encourage his partner to participate. The children's degree of participation is clearly unequal and non-mutual. Child A struggles to understand child B's questions and answers them using short replies. Child B does not seem to let her join the interaction actively to make questions and often does not solve her lexical queries.

(7)

- *CHB: You have sky ehm black?
 *CHA: mm no ehm my my sky is blue.
 *CHB: And you have one man playing volleyball?
 *CHA: No, my <què? torna a preguntar>@s:cat
 [what? ask again]
 *CHB: You have a one man playing volleyball?
 *CHA: ehm <es que no sé si...>@s:cat ehm no...playing football?
 [I don't really know, no...]
 *CHB: Okay. (..) you have a restaurant of fish and chips?
 *CHA: mm no, my restaurant is (..) kebabs.
 *CHB: And you have a (..) one airplane and (..) have a one paper and this paper
 it's eat food.
 *CHA: ehm...<és que... una cosa...no sé...>@s:cat
 [one thing, I don't really know]
 *CHB: ehm you have a one man sleeping?
 *CHA: ehm yes aah you have...<com es diu bandera en anglès?...>@s:cat
 [how do you say flag in English?]
 *CHB: ehm <no m'enrecordo>@s:cat
 [I don't remember]

(Dyad 3, Time 2)

4.2 LREs

The number of LREs observed in our data at both data collection times was relatively low. The mean number of LREs was 3.9 ($SD= 2.95$) at time 1 and 6.15 ($SD= 3.04$) at time 2, with an overall mean of 5.03 ($SD= 3.17$) LREs per transcript. The percentage of LRE use was calculated against number of turns in each transcript and percentage of LREs types were calculated against the total number of LREs. As shown in Table 2, the mean number and percentage of LREs increased with age and proficiency. The vast majority of LREs were meaning-based ($Z= -4.146$, $p<.001$ at time 1 and $Z= -4.472$, $p<.001$ at time 2) and there were almost as many solved as non-solved LREs at both times with no significant differences between them. The percentage of auto-solved LREs also increased with age and proficiency and was significantly lower than solved LREs at the two times ($Z= -3.307$, $p= .001$ at time 1; $Z= -2.461$, $p= .014$ at time 2) and than non-solved LREs also at the two times ($Z= -3.534$, $p<.001$ at time 1; $Z= -2.877$, $p=.004$ at time 2).

| | Mean (SD) | |
|-----------------|---------------|---------------|
| | Time 1 | Time 2 |
| Number of turns | 66.85 (20.25) | 79.20 (25.75) |
| Number of LREs | 3.90 (2.95) | 6.15 (3.04) |
| % LREs | 5.80 (4.26) | 8.96 (5.69) |

| | | |
|---------------------------|---------------|---------------|
| % meaning LREs | 96.49 (11.89) | 100.00 (0.00) |
| % form LREs | 3.51 (11.89) | 0.00 (0.00) |
| % solved LREs | 46.07 (36.78) | 42.75 (27.18) |
| % non-solved LREs | 52.01 (36.82) | 41.36 (22.51) |
| % auto-solved LREs | 1.92 (5.91) | 15.89 (24.26) |

Table 2. Mean number and percentage of LREs and their types.

Table 3 descriptively illustrates the same categories according to time and pair dynamics. The mean percentage of LREs is the highest in expert/novice dyads at time 1 and in dominant/passive dyads at time 2. The three dyadic interactions exhibit similar patterns in terms of meaning and form-focused LREs. In relation to the outcome of LREs, the expert/novice dyads show higher percentages of solved LREs, followed by the dominant/passive and the collaborative ones both at time 1 and time 2. Percentages of auto-solved LREs are very low at time 1 but increase the most in the collaborative dyads at time 2.

| | Mean % (SD) | | | | | |
|-------------------------|---------------|---------------|------------------|---------------|---------------|------------------|
| | Time 1 | | | Time 2 | | |
| | Collaborative | Expert-Novice | Dominant-Passive | Collaborative | Expert-Novice | Dominant-Passive |
| LREs | 5.24 (4.78) | 8.15 (2.60) | 5.11 (0.03) | 8.52 (6.42) | 7.98 (2.91) | 10.61 (5.61) |
| meaning LREs | 96.15 (13.87) | 95.83 (8.33) | 100.00 (0.00) | 100.00 (0.00) | 100.00 (0.00) | 100.00 (0.00) |
| form LREs | 3.85 (13.87) | 4.17 (8.33) | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) |
| solved LREs | 37.25 (39.60) | 68.61 (26.1) | 58.33 (11.79) | 30.56 (23.05) | 70.00 (26.46) | 55.68 (22.06) |
| non-solved LREs | 61.65 (39.54) | 25.83 (21.15) | 41.67 (11.79) | 44.56 (22.20) | 26.67 (25.17) | 42.50 (23.23) |
| auto-solved LREs | 1.10 (3.96) | 5.56 (11.1) | 0.0 (0.00) | 24.88 (27.98) | 3.33 (5.77) | 1.82 (4.07) |

Table 3. Mean percentage of LREs and their types according to dyadic interaction types.

As regards the potential effects of age and pair dynamics on the production of LREs and their types, percentage of LREs displays a significant age effect, irrespective of pair dynamics ($F(1, 38) = 3.944, p < .032$), whereby percentage of LREs was significantly higher at time 2 ($M = 8.96, SD = 5.69$) than at time 1 ($M = 5.80, SD = 4.26$). No significant time or pair dynamics effects were observed in the percentage of meaning-focused and form-focused LREs, which remained stable across the three dyadic interactions and the two data collection times.

As for the percentage of solved LREs, a pair dynamics effect was found ($F(2, 33) = 4.356, p = .021$) by which expert/novice dyads produced higher percentages of solved LREs ($M = 69.21, SD = 23.97$) than collaborative dyads ($M = 34.04, SD = 32.24$) ($t(33) =$

2.768, $p = .028$). No significant age or pair dynamics effects were found in the percentage on non-solved LREs.

A significant age*pair dynamics interaction emerged in the percentage of auto-solved LREs ($F(2, 33) = 3.745$, $p = .034$), where the collaborative dyads produced significantly higher percentages of auto-solved LREs at time 2 ($M = 24.88$, $SD = 27.98$) than at time 1 ($M = 1.10$, $SD = 3.96$) ($t(33) = 3.524$, $p = .001$).

Figures 1 to 3 illustrate mean percentages of LREs and the types of LREs analysed according to the factors examined, namely age and pair dynamics.

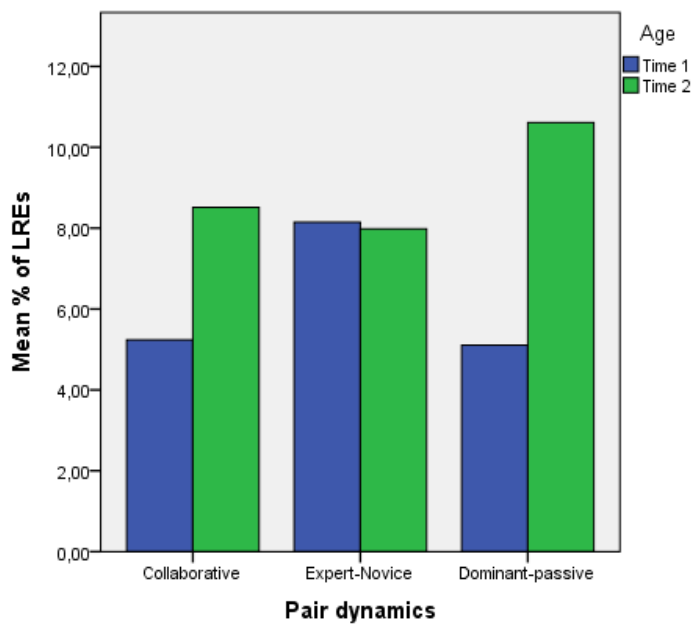


Figure 1. Mean percentage of LREs.

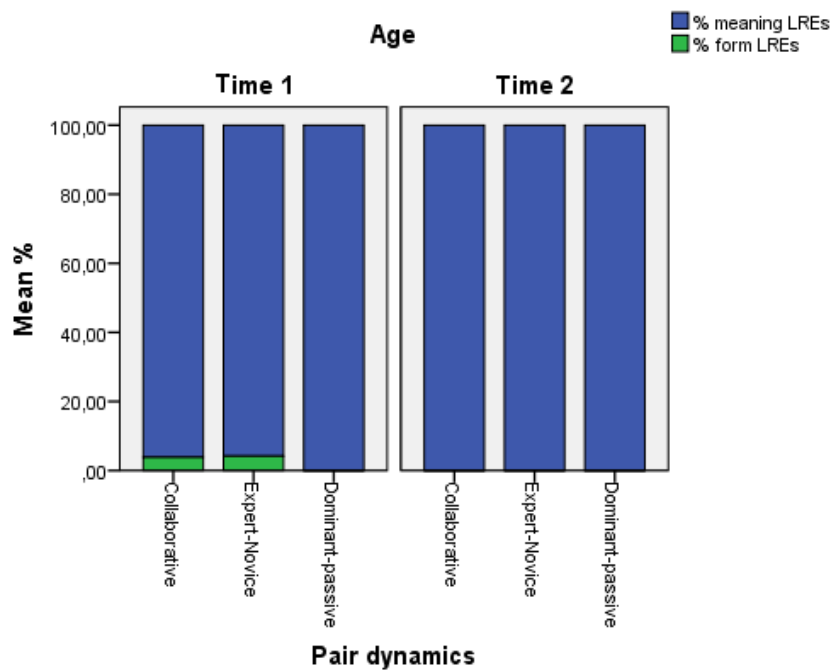


Figure 2. Mean percentage of meaning and form-focused LREs.

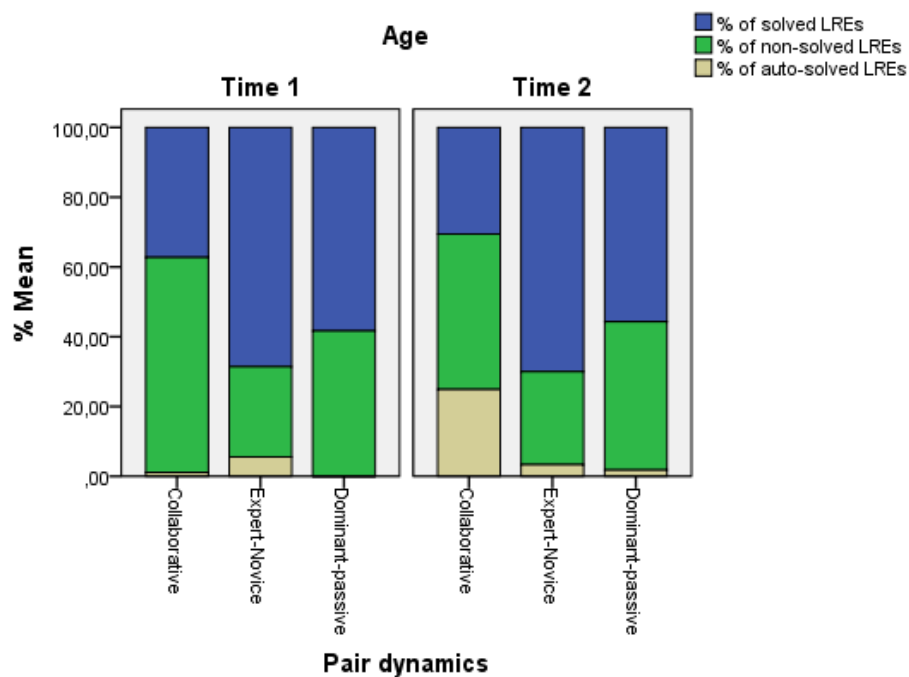


Figure 3. Mean percentage of solved, non-solved and auto-solved LREs.

5. Discussion

Our first research question examined the types of pair dynamics used by the learners of the study while carrying out task-based peer interaction. Although we expected to find all four Storch's (2002) types, our data showed evidence of three of them, namely

collaborative, expert/novice and dominant/passive, as Storch and Aldosari (2013) found in their cohort of adult learners and as we exemplified in the Results section. No instances of dominant/dominant dyads were found in the data, as is also the case in similar studies with child EFL learners (Azkarai & Kopinska, 2020; García Mayo & Imaz Agirre, 2016; 2019), although these studies did find passive/parallel interactions (referred to as cooperative in Azkarai & Kopinska's study). The interaction pattern that prevailed in our data was the collaborative one at both times, which is in line with previous research on child pair dynamics (Ahmadian & Tajabadi, 2017; Butler & Zheng, 2015; García Mayo & Imaz Agirre 2016; 2019; Oliver & Azkarai, 2019; but see Azkarai & Kopinska, 2020 who found almost as many collaborative patterns as cooperative ones).

The second research question focused on whether patterns of interaction would change over time as age and proficiency increase. The majority of the dyads kept the same pair dynamics at time 2 (i.e. collaborative), so there was no significant changes on the whole. The only specific changes that were observed turned a collaborative pattern into dominant/passive and expert/novice ones, which might be due to unbalanced increases of proficiency in the members of the dyads and the higher proficiency learner becoming the dominant or expert one. A change from expert/novice to collaborative was also observed in some dyads, which might point towards a levelling of proficiency between the members of the dyads. Even if proficiency differences can only be subtle considering the exposure the learners receive, they might be enough to impact the dyadic patterns established. This general stability between data collection times is in line with previous related child EFL research (García Mayo & Imaz Agirre, 2016). Yet what some studies comparing younger and older learners have found is that low (or younger) proficiency learners tend to collaborate more than higher proficiency (or older) learners (Oliver & Azkarai; 2019 for ESL children and García Mayo & Imaz Agirre; 2016 for EFL children). This is also seen in our study, where at time 1 the proportion of collaborative dyadic patterns is higher than at time 2, amounting to 90% between collaborative and expert/novice dyads in the first data collection time and lowering to 75% at the end of the study. Butler and Zeng (2015), however, found younger learners had difficulties to interact in English and mainly featured passive parallel patterns and it was the older learners who were found to interact collaboratively. The learners in our study were as young as Butler and Zeng's (2015) younger learners and were actually found to engage in collaborative patterns while performing the task, so factors other than age, namely motivational (Azkarai & Kopinska, 2020) or proficiency-related factors, surely play a role during interaction. As Oliver and Azkarai (2019) highlighted, patterns of interaction in child learners seem to be influenced by a complex interplay of factors.

As regards LREs and as expected, child learners in our study produced a relatively low number of LREs per transcript at both data collection times. This was expected, considering previous research on similar populations and taking into account the nature of the task employed. As seen in previous studies on child and adult learners, there is an impact of task modality on the frequency of production of LREs, with oral-written tasks producing a greater need to discuss language than oral tasks (Adams & Ross-Feldam, 2008; Azkarai & Kopinska, 2020; García Mayo & Azkarai, 2016; García Mayo & Imaz Agirre, 2019; Payant & Kim, 2017). Our data also showed that the percentage of LREs was significantly affected by age (and therefore proficiency), as results at time 2 indicate and as seen in previous research on adult learners with different proficiency levels and

pairings (Leeser, 2004; Storch & Aldosari, 2013). Also in line with previous research on children and adults, the overwhelming majority of LREs were meaning-based, accounting for lexical problems encountered during the task. The limited proficiency of the children in our study and again the nature of the task, which did not have a written component, might account for the learners' focus on lexical aspects (García Mayo & Imaz Agirre, 2019; Kim & McDonough, 2008; Leeser, 2004; Payant & Kim, 2017). The percentage of solved LREs was lower than that of non-solved LREs at time 1 but slightly higher at time 2, which together with the increase of auto-solved LREs at time 2, show that increased proficiency (and probably age in the case of children) result in increased rates of resolved episodes, as also seen in Storch and Aldosari (2013) and Basterrechea and Leeser (2019) in the case of adult learners.

Based on previous research on adult populations, LREs were predicted to be influenced by pair dynamics, whereby collaborative patterns of interaction were expected to encourage higher numbers of learning opportunities and hence higher percentages of LREs (Azkarai & Kopinska, 2020; García Mayo & Azkarai, 2016; Kim & McDonough, 2008; Moranski & Toth, 2016; Storch & Aldosari, 2013; Tan et al., 2010; Watanabe & Swain, 2007). Yet our data only provided partial evidence for such an effect. The number and percentage of LREs were fairly similar in the three types of dyads, although descriptively, the expert/novice and the collaborative dyads together produced many more LREs than the dominant/passive ones. The only pair dynamics effect observed was in the percentage of solved LREs, where the expert/novice dyads produced significantly higher percentages of solved LREs than collaborative dyads. In novice/expert dyads, LREs resolutions were carried out by the expert member of these dyads, whereas in collaborative pairs, the learners raised language issues that could sometimes not be resolved. This difference might also be explained by the significant increase in auto-solved LREs in the collaborative dyads at time 2, which might in turn be due to the potential greater increase of proficiency of some learners at time 2. These learners preferred to provide the answer themselves instead of waiting for their interlocutor to resolve their doubts. However, these pairs were still classified as collaborative as these same learners provided feedback to their partners, incorporated their feedback and responded coherently during interaction.

6. Conclusions

The present study has attempted to contribute new data to the field of child task-based peer interaction in EFL contexts by exploring pair dynamics and LREs and further analyse how age and the patterns of interaction affect the LREs produced. Our data has provided further evidence that low proficiency children interact mainly using collaborative patterns and can actually attend to language issues while performing an oral task. This attention to language is especially lexical-oriented and can be sorted out particularly in expert/novice dyads. Age has been found to significantly affect the production of LREs, as with age and a proficiency increase comes the ability to notice language form, reflect on it and learn through interaction. Pair dynamics has only been found to affect solved LREs. In line with previous research, our study suggests that language learning opportunities are necessarily linked to developmental readiness (Leeser, 2004) which

might be linguistic but also cognitive (Basterrecha & Leaser, 2019), and pair dynamics in child learners seems to reflect a complex interplay of factors (Oliver & Azkarai, 2019). Our research therefore corroborates the need to incorporate a variety of peer interaction tasks in the young learner class, while exploring different pairings and training learners on different patterns of interaction so that they can make the most of collaborative strategies to maximise learning opportunities.

A series of limitations need to be acknowledged, such as the number of participants and most importantly, the fact that an objective proficiency measure could not be established as permission was not granted by the school. Further research should incorporate the variable of language proficiency to shed more light into the relationship between pair dynamics and language learning opportunities and could use a task which prompts more language reflection and attention to form (i.e. a task with a written component).

Acknowledgements

The author wishes to acknowledge the research group EFLIC (English as a Foreign Language in Instructed Contexts) (2017SGR752) at *Universitat Autònoma de Barcelona*, Spain and the research project PID2019-107328GB-I00 funded by the Spanish Ministry of Science and Innovation.

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