Children working it out together:

A comparison of younger and older learners collaborating in task based interaction.

Rhonda Oliver **Jenefer Philp** **Susan Duchesne**

Curtin University Lancaster University University of Wollongong

Author manuscript, Language Teaching Research 2017

Abstract

This paper describes peer interaction among children with English as an Additional Language (EAL) in primary schools. Through linguistic analysis it provides an exploratory examination of the nature of their collaborations, how they work together and the ways they interact as they complete classroom task pair work. 42 children from two junior and two senior classes of intermediate level English from four EAL reception classrooms participated. Data comprised recordings and transcriptions of the interactions of 11 pairs of younger (5 - 8 years) and 10 pairs of older (9 – 12 years) children as they completed five tasks over two weeks.

An analysis of the language used demonstrated variation in: (a) the way the children worked socially, enjoyment during task work, cooperating and achieving reciprocity, and how they resolved conflict when it occurred; (b) their task management and on- and off-task talk; (c) the language they used for learning, demonstrating their cognitive involvement, and; (d) their attention to content and linguistic aspects of the task. Differences were also observed to occur according to the age of the learners. Together the results from this study suggest the need to consider task based interaction beyond simply the linguistic and operational levels alone.

Key Words: Child peer interaction, task-based interaction, second language acquisition

Introduction

Benefits of communicative peer interaction

Recent research on peer interaction and second language (L2) acquisition has had as its focus how learners use and work with the target language. This body of research, most of which has been conducted with adult L2 learners, explores interaction based on the premise that it facilitates acquisition because it both promotes comprehension and draws learners' attention to connections between language form and meaning. It has been found that having to communicate clearly with one another can push learners to produce more complex, appropriate and accurate language forms and in this way promotes language learning (Gass 1997; Long 1996; Mackey 2007). On this basis linguistic analyses that document interactional modifications, peer feedback and language related episodes (LREs)(Swain & Lapkin, 2002) in learner language production have all been effectively used to explore the production and language acquisition that occur when learners work together (Storch, 2002; for review, see Oliver & Philp, 2014; Philp, Adams & Iwashita, 2013).

Further, the findings of research conducted over the past two decades in this field suggest that the benefits of interaction also hold true for children just as they do for adults (although age differences have been noted – see Oliver, 2000, 2009; Mackey, Oliver & Leeman, 2003). Specifically, the series of studies conducted by Oliver show that children use similar interactive strategies as adults do, though proportional differences are noted with regard to use (Oliver, 1998, 2000, 2002) and according to the quality of what they say (e.g., truth and politeness can vary with age) (Oliver, 2000, 2009). Even so, previous findings suggest that interacting with peers can be a particularly motivating context for practice and meaningful second language (L2) use for child learners (Bigelow & King, 2016; Butler & Zheng, 2014, 2015; Mackey, Kanganas & Oliver, 2007; Mackey et al, 2003; Mackey, Oliver & Philp, 2006; Oliver, 1995, 2000; Pinter, 2007). This is also the linguistic space where child peers can provide each other with the type of input and feedback that is purported to be facilitative of L2 learning (Oliver, 2002, 2009; Philp & Duchesne, 2008; Wong-Fillmore, 1976).

Social interaction

Despite the apparent utility of child peer interaction, these are by no means blanket effects and other aspects of interaction, including affiliation and social goals, may mediate its potential for learning (Philp, 2016; Philp & Duchesne, 2008; Tognini, Oliver & Philp, 2010).

For example, Hay, Payne and Chadwick (2004) suggest that the degree of emotional regulation, social understanding, and executive function all influence children's dyadic interactions. Other work on cooperative learning in the first language (L1) context suggests that the group dynamics also influence the effectiveness of interaction (Gillies, 2007). However, such studies tend to examine cognitive learning outcomes rather than language-related ones. Even so the results are consistent with the small amount of L2 research undertaken in this area where it has been found for children that the social and linguistic benefits of interaction appear to be interdependent (Bigelow & King, 2016; Toohey, 2000; Wray, 1999). That is, the potential of children's L2 peer interaction for language development is contingent on underlying social goals and on the relationships between the children, which in turn is situated in their language. Some even suggest that for younger children social goals can be more important than academic goals (Philp & Duchesne, 2008). Therefore, it is possible that it is not only the language the child L2 learners use in their task-based interactions, but the way that they relate to each other that may promote or hinder language learning. The role of peers has been widely investigated from the point of view of cognitive, social and language learning benefits in the L1 context. For example, Forman and Cazden (1985) found a positive correlation between learning and the level of social engagement with a partner.

In the L1 context it has been found that a multitude of features contribute to the success of interaction, although it is also noted that effectiveness varies greatly (Hogan & Tudge, 1999). For example, two social features found to influence successful L1 interaction are mutuality and equality (Damon & Phelps, 1989; see also Storch, 2002 for similar findings for adult L2 interaction). Mutuality of peers is described as having discourse that is "extensive, intimate and 'connected' " (Damon & Phelps, 1989:10). Equality refers to the equal-ness (or not) of the relationship, including the distribution of power. It is reflected in the ways children take direction from one another, while mutuality is reflected in how they work together in ways that allow them to try out or explore new ideas. The two aspects are also represented by how peers contest, resist or accept one another's solutions or corrections, and perhaps even how new conceptions of language form, meaning and use are fostered in their interactions. These two features encompass the power of the social context of the interaction and are demonstrated in the way children, through their language, can regulate their social interaction. The peer collaboration that ensues is even seen in very young children's play,

well before it appears in more formal ways (Forman, 1992). There is, however, a dearth of research on how these features manifest in the interactions of child L2 learners.

Not all peer interaction in the L1 context is positive and children working together can also have a negative influence on one another's learning. Kutnick and Kington (2005), for instance, found that when children work together social and task goals may not always align and this can have a negative effect on outcomes. They also found gender differences in this regard with female friendship pairings leading to higher performance and male pairings achieving lower performance on a reasoning task. From the current available literature it is unclear whether the degree of social engagement with one's partner may affect, not only learning in a general sense, but also language learning for children working in an L2 context.

Related to social interaction are the level of active participation and the enjoyment of the learners when they do interact. Tognini (2008), for example, in a study of foreign language (i.e., L2) primary and high school classrooms in Australia, found many students saw peer interaction as a fun stress-free context in which to try things, make mistakes and work things out together, as seen in this primary school student's account of how she and her partner sort out difficulties in communication:

> When I'm with A and I just look at her funny, I just go *(she makes a faces to signal incomprehension and everyone laughs)* and she goes, like she doesn't see and she says it really slowly and does that hand action, *non lo so. (p.282)*

Clearly, the degree of mutuality and common purpose can impact on this participation and enjoyment. These social dimensions of L2 interaction amongst young learners are examined in the current study.

Task management

Another key aspect of the social component of task-based interaction among peers involves their ability to work towards task completion, talking about the task rather than matters that are 'off task' and doing this in a collaborative fashion. Many pedagogical tasks, and for that matter less formal (play) tasks, require peers to cooperate and work with one another, rather than individually, to achieve completion. This can include negotiating who will do what, what the task involves, how it will get done, and, how those involved will work to stay on task. Whilst management of the task itself seemingly has an important role in the success

of task outcomes, O'Donnell (2006) cautions that some groups can become so focussed on procedural aspects of a task, they don't accomplish the task itself. In fact, in the L1 context, Forman (1992) found that pre-adolescents had difficulty differentiating and coordinating the rules of cooperative and academic discourse so that disagreements were more often resolved around personal authority rather than consensus, logic and evidence. There is very little research about the way that child L2 peers manage tasks, especially beyond the linguistic level. This is examined in the current study.

Cognitive involvement

In the L1 context, although it has been found that interaction does not automatically influence learning, the quality of the discourse does mediate learning outcomes (Webb & Farivar, 1999). King (1999) found that the level of discourse correlates with level of achievement and productivity in cognitive tasks. When children interact, shared social goals may also influence their cognitive learning from a task, as will the nature of the task or activity, and the role the teacher takes when the task is performed (Cohen, 1994; O'Donnell, 1999). Others have shown that exploratory talk (Mercer, 1996) elaborations, explanations and requests for clarifications are linked to cognitive learning (Chinn, O'Donnell & Jinks, 2000). However, within the L2 context, peer interaction has mostly been investigated from the perspective of language learning, rather than cognitive learning. In these studies interactional modifications are often linked to learning where they suggest attention to language form and meaning (e.g., Mackey et al, 2007; Mackey et al, 2003; Mackey et al, 2006; Oliver, 1995, 2002;). Svalberg (2012) makes the case for engagement with language as involving cognitive, social and affective dimensions, as seen in L2 learners' language related episodes (see also Baralt, Gurzynski-Weiss & Kim, 2016; Philp & Duchesne, 2016). The ways that this may occur in young L2 learners is also explored in the current study.

A focus on language

Useful L2 interaction is typically identified as that which includes opportunities for focusing on language, whether incidentally or explicitly, for example, through negotiation of meaning and form, that is, opportunities for learners to respond to perceived communication difficulties by segmenting, simplifying, repeating and reformulating language in an effort to understand and communicate with one another (Oliver, 1998, 2002), as well as through language-related episodes (Kowal & Swain, 1994). For example, Lyster and colleagues (e.g.,

Lyster, 2002; Lyster & Ranta, 1997) based on research among early adolescents, suggest that it is through attention to the structure of language that L2 learning occurs. How this might manifest in younger learners has received less attention in L2 research (although see work by Oliver and also Butler & Zheng, 2014, 2015) and so is another focus of the current study.

Age and peer collaboration

Finally, it is clear from L1 interactional research that age is a key factor, with older children better able to negotiate with each other, and also having improved emotional regulation and social competence (Fabes, Carlo, Kupanoff & Laible, 1999). We also know that developmental factors related to age (Vygotsky, 1978) including skill level, competency, attitudes and relationships will impact on the nature and outcomes of the interaction (e.g., Hogan & Tudge, 1999). Forman (1992), for example, reported that the form of peer collaboration changes from early to middle childhood, with children in early childhood focussing on collaborative play, while in middle childhood they are increasingly focussed on collaborative problem solving. She found that in early childhood children were more likely to use 'yes, no, yes, no' arguments, and decisions about *who* was right, whereas older children gave reasons to convince the other, and focused on *what* was right. Rubin, Bukowski and Parker (2006) reported that children's abilities to agree about roles, rules and themes of play also improve with age. They found that the proportion of cooperative activities, which require shared meaning, and the degree of conflict based around differences of opinion and ability to focus on others' ideas, change with age. Although the body of L2 research concerning children is slowly growing, there remains much less task-based research about children learning a second language. This is despite acknowledgement that developmental differences affect L2 interaction (see for example Oliver, 2000; 2009).

Summary and research questions

In summary, there is little research that has considered the extent to which the social and cognitive aspects of task interaction may mediate the potential benefits for L2 learners, particularly children. The goal of this exploratory study is to describe the nature of peer task-based interaction in language classrooms among primary school English as an Additional Language (EAL) learners beyond a focus on interactional features - those

purported to facilitate L2 learning (e.g., input, output, negotiation and other types of feedback). Specifically, we explore the responsiveness of younger EAL learners as demonstrated in the talk they use. We examine how they use their language to work together to complete and stay on task, not just for linguistic purposes, but also to achieve social and cognitive goals. Additionally, given the indications that many facets of interaction are developmentally determined, and hence related to age, the second goal is to explore differences between older and younger learners.

Therefore our research questions are:

1. During child L2 learners' task based interaction what evidence do we see of:
    a. social interaction that demonstrates co-operation, reciprocity and resolution of conflict?
    b. task management?
    c. cognitive involvement?
    d. a focus on language?
2. (How) do these features differ according to age?

Methodology

Participants

42 children from four EAL reception classrooms participated in this research, spanning the lower and upper developmental levels of middle childhood: Two were intact junior primary classes, with 11 pairs of children from ages 5-7, and two were intact senior primary classes, with 10 dyads from ages 11-12. All children were identified by the school (based on classroom assessment) as "early intermediate" speakers of English and had been in Australia less than a year. First languages represented across all classes were: African (unspecified) (15); Arabic (1); Chinese (1); French (1); Indian (unspecified) (1); Russian (3); Serbo-Croatian (11); Vietnamese (8).

Materials

To maintain ecological validity, materials were developed in consultation with the classroom teachers prior to and after design of the tasks. That is, all the materials were developed with the teachers from the four classes. Task content was based on classroom

activities and curriculum themes at the time of the study. Next, the tasks were piloted to ensure comparability of output across age groups. All five tasks were two-way information gap tasks – a type familiar to the children. The amount of time taken on each task varied from five to twenty four minutes. However, post hoc analysis (Friedman non-parametric test) of amount (based on turns) and type of speech show no significant differences according to task type (See Mackey et. al, 2006).

The tasks were presented in one of five different ways, each representative of a teaching behaviour that the teachers perceived to be routinely used in their instruction. The task topics and conditions are described in Table 1 below. All the tasks were designed for pair work. (For further information, and comparison of performance according to task conditions, again see Mackey et al, 2006).

Table 1 ABOUT HERE

Data collection occurred in the four classrooms, with the class teacher and research assistant both present. Five sessions of peer task-based interaction occurred as part of regular classroom instruction over two weeks. Each pair of children carried out the five tasks, working with the same partner each time, (with some exceptions due to absenteeism). The pairs were randomly assigned, though gender-matched to control for that potential effect. All data was audio recorded, transcribed and coded.

Analysis

Following Ellis and Barkhuizen (2005), a preliminary inductive analysis was first carried out (see Thomas, 2006). That is, through an iterative process of repeated reading of the data by all three authors, we derived the key categories that emerged from the data. These were matched against existing literature to label and operationalize the categories for coding, as outlined in Table 2.

TABLE 2 about here

To determine the nature of the task-based interaction (research question one), we then coded all the transcripts according to the categories as described above. All three authors carried out independent coding of the data. The results were compared for consistency and

where discrepancies existed, these were discussed and where necessary, definitions of categories clarified and refined until full consensus and consistency was reached. Following this process of coding socialization, the first two authors completed a final round of coding of all categories for all transcripts. Next, the frequency of the turn counts within each category for each pair on each task was calculated. To answer research question two we made a comparison of the frequency counts of the different results for each category of coding for the older and younger learners. Where the results were normally distributed, namely for the categories of 'on/off task talk' and 'resolution of conflict', a parametric: Multivariate Analysis of Variance was undertaken. For all other categories, the results were not normally distributed and so a non-parametric Mann-Whittney U test was used.

Findings

Nature of the task based interaction

In answer to research question 1, and as indicated by our preliminary inductive analysis, and confirmed though a more formal analysis under the categories described above, the child L2 learners in this study demonstrated ability to work together to complete the tasks. Not only did their language production confirm previous studies indicating that their interaction included features purported to support second language learning, their talk also showed that they worked together socially to achieve task completion and that they were involved cognitively and linguistically with the various tasks.

Table 2 ABOUT HERE

The specific and qualitative character of their interactions is discussed in turn:

1. Social aspects of doing the task

An analysis of the transcripts provides evidence that the children related to one another in socially appropriate ways that demonstrated their willingness and the ability to work in cooperative and reciprocal ways on the tasks. At times such *cooperation* was shown explicitly, as seen in Example 1. Initial disagreement is resolved, and the student compliments his partner on his correct answer, in their task to identify characteristics of different animals:

(1) *Younger children*

T: Legs, how many?

O: Six.

T: No!

O: Yes!

T: Yes is.

O: It's uh, two.

T: Excellent

At other times willingness was implied through the strategies employed by the children. In Example 2 the children listen to one another and adjust their word choice, demonstrating *reciprocity*. Here, Learner B provides the colour word "yellow", adopted with uncertainty by Learner A and modified after reflection.

(2) *Older children*

B: Um where is the= what colour is the camel… what colour is the camel

A: Ah what's this… black… [this no] black

B: Yellow

A: What is it… that might be yellow

B: Hmm

A: Just put yellow dark… dark yellow

Reciprocity is also illustrated in Example 3, where a dyad of younger children work with unfamiliar lexis, and help one another to determine that a snake does not have wool, but that a sheep does. Although they initially disagree, 'C' clarifies that a jumper is made of wool and with this information agreement is reached.

(3) *Younger children*

M: Does the snake have wool?

C: No

M: Yeah

C: Sna= wool what you do jumper like that?
It don't have that. Wo:ol.

M: The sheep the the sheep have yeah

C: And that one and that one

M: Yeah that.

In Example 4, two older children demonstrate reciprocity as they seek to determine the correct number of circles. Although 'B' is doing the counting, 'J' is assisting making sure that all items are included and finally she echoes 'B' with the total count.

(4) *Older children*

B: 27, 28, 29

J: Did you count helmet?

B: Yeah 29

J: About this?

B: 30

J: 30

Similarly in Example 5 the two learners arrive at a description of the picture with each contributing to the final result.

(5) *Older children*

J: What's rabbit do?

M: He's ummh

J: Climbing?

M: Sit sit on the carring

J: Carrot.

M: Carrot

Although the children generally worked in a cooperative and reciprocal manner as described above, conflict did arise. What was interesting to observe in these situations was the way the children worked to *resolve conflict*. For instance, in Example 6, although the pair of young learners clearly did not agree on the size of the cross that was to be drawn, in the end they work together to move the conversation on, alleviating any further problems:

(6) *Younger children*

C: Put no, put a big cross

M: Hey you cross too big xxx

C: No that to do like that before

M: No

C: Come on

M: Does the el= giraffe have wool, no tail?

However, this was not always the case and there were instances of unresolved and less than than functional peer interaction, sometimes requiring intervention by the teacher:

(7) *Younger children*

M: Excuse me he shout at me [to adult]

O : No you shout at me

M: No I didn't [angry frustrated]

Assistant: C'mon boys be nice

From the transcripts it was also apparent that quite frequently the children gained *enjoyment* from the experience of doing the tasks, for example, in the first instance making a statement to this effect, and in the second showing their *enjoyment* with appropriate laughter.

(8) *Younger children*

M: I like to play game

(9) *Older children*

J: Does bear

P: No.

J: Maybe, a little bit

P: I dunno, maybe.

J: [giggle], maybe…

2. Task management

As demonstrated in Table 2, the children not only organised themselves allocating turns and working out what to do, in the main, the children were generally always *on task* (over 95% of all turns), working together socially and engaging cognitively. However, there were also examples when they were not (i.e., they were *off task)*:

(10) *Younger children*

I: the balloon, bye bye my balloon. So this, car car car [giggling]

(11) *Older children*

B: I'm hungry.

K: Me too. Hey, look the picture.

B: I like it.

Whether this *off task* talk occurred because the learners were bored and disinterested in the tasks or simply distracted by other things is unclear. The use of introspective data, such as L1 interviews, were not possible in this study, but would be a recommended tool in future research regarding how tasks might engage and challenge child L2 learners.

3. Cognitive involvement

It was apparent from an analysis of the transcripts that generally the children were involved with the learning central to the tasks. Their language, through the use of *cognitive talk,* reflected debate and argument about the different concepts that they encountered as they worked to complete the tasks. For example, in the following exchange two younger learners debate whether or not snakes have ears and their cognitive involvement is explicitly demonstrated by 'M' with his repetition of the phrase 'I think':

(12) *Younger children*

M: Does the snake have ear?

C: No

M: Yeah they are little…I think no be...
I think I think I thinks they no they smell something OK let=
C: Yeah them smell with them tongue

In other tasks it was clear that the children were grappling with ideas. Uncertain as to the correct response, they relied on one another to work it out together:

(13) Older children

J: Does elephant live in jungle?
P: No
J: No I don't know
P: I don't know
J: Oh ah…
P: I'm sure its he live not in a farm
J: Yeah I know
P: Maybe in=
J: Maybe in a desert

However, at other times it was apparent that the tasks posed no intellectual challenge for the children, and they appeared rather disinterested. This was particularly the case for the older children on Tasks A and D, suggesting a mismatch in the cognitive and/or linguistic difficulty level of these tasks. At these times they simply *repeated patterns* of the same structures over and over again in a formulaic manner, and often very quickly, suggesting that they simply wanted to get the task done, as seen in task D, below where students identify numbers involved in different athletic events.

(14) Older children

Y: How many girls do you see are sitting?
P: One girls.
Y: How many boys do you see are sitting?
P: Five boys.
Y: How many girls do you see are swimming?

P: One girls.

Thus, although the tasks were carefully designed in collaboration with the class teachers for use across ages, it is evident that some tasks were not sufficiently interesting or demanding, particularly for the older students. On this basis we suggest that language teachers, especially those working with students of limited proficiency, consider not only relevance of the task to the linguistic needs of the child, but also the extent it may be cognitively and emotionally engaging (See Philp, 2016).

4. A focus on language

Both the younger and older EAL learners demonstrated the ability to attend to the linguistic form integral to the task, provide feedback and to *support* one another's *language production*. As such the data from this study confirms previous research (e.g., Mackey et al, 2003; Mackey et al., 2006; Oliver, 1995, 1998, 2002) suggesting child L2 peer interaction is a fruitful site for second language learning. As seen in Example 15, the younger children co-construct their talk, linguistically supporting each other through their questions and answers in doing so Learner M modifies and steadily builds his question, incorporating with correction, some of Learner C's suggestions.

(15) *Younger children*

M: Do=
C: Giraffe
M: Does the
C: Giraffe has legs
M: Does the giraffe have leg?

As shown in a growing body of research, the children in this study were also able to engage with language in ways that enabled there to be *an incidental focus on form*. Not surprisingly given the context of the data collection, namely intensive English language classes for newly arrived migrants, the children in this study struggled with language and there were

instances of negotiation of form, but more often of meaning. However, it should be noted that this did vary to some degree according to the type of tasks and tasks conditions employed as expected from current TBLT research (e.g., Ellis, 2009). Negotiation of meaning (one type of focus on form) is illustrated in Example 16 where Learner A uses a confirmation check in the third turn in response to communication breakdown.

(16) *Older children*

A: No you can xx… monkey what colour
B: Is gay (means grey)
A: Colour grey?
B: yeah… grey is… grey is… grey is xx the tree
A: So is different colour… my colour's brown

In another example (17) the children both negotiate and then M provides a recast for the erroneous production of 'bay' for 'bear'.

(17) *Younger children*

M: How many bay legs?
S: How many … legs?
M: Bay - How many BEAR legs?
S: Is four.

In Example 18, two older children carry out a similar task to that shown in these previous examples. Although they have no difficulty formulating a question neither recognize the word "wool", written on their picture grid, and despite their best effort eventually they seek the help of the teacher to receive the type of linguistic support they need to complete the task.

(18) *Older children*

R: Quiet. (..) Do horse have a have woo:l
H: What?
R: What's that word? Wool. What that mean? (whispering) (….)
H: We don't understand this word=

R: Woo

H: This word wool

R: wool wool… What this mean?

A: What should you do if you don't know?

H: Oh. I dunno

A: Well wool is what a sheep

H: Oh yeh I know

R: Yeh I know

Another way in which the learners appeared to focus on language form was through their *language play*. Previous research demonstrates that adult language learners do this (Cook, 1997) and it appears from the current data, that this is also the case with L2 children. However, the quality of their language play reflects their spontaneity and level of maturity. For example, a great deal of the language play in the current data centered around the production of funny sounds (19), sometimes unrelated to the discussion, and at other times part of the discourse (20):

(19) *Younger children*

I: Does a horse have a tail?

P: Yes

I: Yes>

P: What?

I: Do:ng do:ng

(20) *Older children*

R: Let's see oh here's car's wheels, tree (sing song voice)

Therefore, in answer to Research Question 1., based on both the quantitative and qualitative evidence in this study and regardless of age, the children were able to co-operate in pair work, listen and to talk to each other in reciprocal ways; to use talk to organise themselves to complete the task and whilst mostly using 'on task' talk, there was also evidence of 'off task' language; to engage cognitively with the tasks; and, focus on the form of language and

in doing so provide support for each other's language production, giving feedback and engaging in language play. Although these aspects were demonstrated in the language of both the younger and older learners, in relation to Research Question 2, there did appear to be differences according to the age of the learners and this is explored both quantitatively and qualitatively below.

Age Differences

In response to Research Question 2, we found differences between younger and older children in their interactions across tasks, but not for every individual task – thus there is also an effect for task. These differences according to age related to all the subcategories of the social interactional aspects of tasks, namely *co-operation, reciprocity, conflict resolution and non-resolution*; 'on-task' behaviour; cognitive involvement with the tasks, but only in terms of *repetitive patterns*; and aspects of language awareness, but only for *language play*. For the age difference according to the sub-categories of conflict resolution and on/off task behavior the effect sizes are small (Cohen, 1988). However, for all the other sub-categories' effect sizes, where the tasks were considered collectively as a whole, the effect size was medium and for individual tasks it was medium to large. A summary of this information is provided in Table 3 below:

Table 3 ABOUT HERE

For the other sub-categories: *enjoyment; cognitive talk; off task interaction; supporting language production;* and, *language awareness*, no age differences were observed, at least in terms of the frequency of language use.

The similarities and specific differences between the older and younger learners are described below:

1. Social Aspects of doing the task

Cooperation: Learners of all ages appeared capable of being cooperative, but the result did show there was a greater frequency of language reflecting this with older rather than younger learners, and there was an effect for task. At a qualitative level there also seemed to be differences according to age, with younger learners more likely to use explicit affiliative language such as in the following example where one younger student indicates his pleasure at the working relationship he has developed with his friend Charles:

(21) *Younger children*

M: I like to be in Charles group. This good friend

Reciprocity: Both age groups worked in reciprocal ways with their partners. However, on Task A alone, there was an age difference: older learners produced more indications of reciprocity than younger learners ($p<.05$, $r=.538$) and there was a large effect size for this. This task involved categorisation of animal characteristics and could be achieved in a quite repetitive way. This occurred more often for the older than younger learners (see repetitive patterns below). It is possible the use of repetitive patterns in a volley of question and answer also led to the older learners working in mutually responsive ways. Reciprocity is certainly an area worthy of future task-based research. Even so, a qualitative analysis indicated that regardless of age, all the learners are capable of "working well" together and in this way the current research provides further support for the use of tasks in child L2 classrooms.

Resolution of conflict: Similarly, learners of all ages demonstrated ability to work to overcome disagreements and conflicts, although subtle differences (e.g., use of a greater degree of politeness with older learners) were apparent. It should also be noted that resolution was not always achieved, both for older and younger learners. Interestingly, there were some age differences according to task, as illustrated below, both for resolution and non-resolution.

Resolution: Younger > Older $p<.05$, $r= .241$ Task A $p<.05$

Non resolution: Younger > Older ($F(1, 59)=7.226$, $p<.05$) Task A $p<.05$ Task B $p<.01$

The higher level of resolution and non-resolution for younger children reflects the greater degree of conflict that emerged for this cohort. This seems a reflection of their level of social maturity and exemplifies the need to look at interaction beyond just the linguistic level.

A qualitative analysis also highlighted the fact that not all dyads experienced disagreements. Thus variation occurred in how the pairs worked together, just as has been found with adult learners (e.g., Baralt, et al., 2016; Storch 2002). Among both the younger and the older learners, there were those who demonstrated a higher degree of willingness to work for the 'common good', and, those who were more competitive or combative in their interactions. As task-based learning gathers momentum in primary schools, much more research is

needed about mutuality and equality in peer interaction, and children's ability to negotiate disagreement (e.g., Dawes, 2010).

Enjoyment: There were no significant differences between older and younger children in terms of enjoyment. However, perhaps reflecting their stage of development, there appeared to be qualitative differences in what they enjoyed, as seen below. In the athletics task, the younger children simply enjoyed the absurdity of the athletics they construed from the picture.

(22) *Older children*

K: Finish. I like this game.
C: I like this game. Because this is good game.

(23) *Younger children*

A: no boys dancing

B: flying oh flying [laughs]

A: how many girls there are who's flying [laughs]

2. Task management

Although the students generally managed the task and were on task throughout their interactions, as previously indicated, off task behavior also occurred, with an age difference observed: older children were more on task than their younger counterparts. However, after Bonferroni correction, there was no significant difference in the total scores of the five tasks and a small effect size (4.8%). There was a small effect size for the finding that older children were more on task than younger children and this increased to a large effect size (.417 Task C and .410 Task D) for individual tasks. It is important to note that tasks B, C and D were tasks in which the children were just given instructions, no guidance or modelling from the teacher. This underlines the importance of teacher scaffolding especially for younger learners during task based interaction.

3. Cognitive Involvement

Cognitive talk: There were no significant differences between older and younger children in this category. However, it does seem that there is a need to explore different kinds of tasks, and especially those that are more complex. The tasks in this research were designed for language production across both age groups, and were generally not as cognitively challenging for the older as they were for the younger children. Further, the use of information gap tasks meant that the children often relied on visual information, and simple registration of information. In the main the tasks did not encourage higher level thinking requiring exploratory talk, and therefore any potential age differences in this regard did not emerge. Research with more challenging tasks is warranted (Philp, 2016). Even so the findings highlight the need for language teachers to consider task selection beyond just linguistic demands.

Repetitive patterns: Not surprisingly, as the tasks elicited particular forms, both age groups used repeated language patterns. However, for the older learners their use of the same pattern often reflected a lack of cognitive involvement in the task (i.e., repetition was an expedient way to achieve task completion) and this was reflected in a statistically significant difference between older and younger learners, with a medium effect size for all tasks, and high effect size for tasks A and D (where seemingly, these were tasks that could be done in a repetitive way, especially by the older students).

4. A focus on language

Regardless of age, the data suggests learners are capable of focussing on language form. The children in this study provided recasts to each other, they also negotiated with each other and on occasion they provided explicit feedback. In addition, not only did the children provide feedback (mean= 3.65 and 5.20 for younger and older children respectively), but they used this in their subsequent productions (although see age differences as outlined below) – as such providing further support for previous research that children can and indeed do benefit from tasks that promote a focus on form.

Language awareness: There were very few instances of older learners paying attention to language through negotiation or recasts, or using co-construction to support their partners'

language production. Where this did occur, it was often only for spelling purposes. For the younger children, those in one class used it considerably more than the other class, suggesting a possible teacher effect. Example 24 provides an illustration of one younger learner (M) assisting his partner (C) through explicit correction and recasting while completing Task C (Animal grid), and (C) using this feedback in his subsequent production.

(23) *Younger children*

M: Yeah on the right now you ask me
C: Where's put the elephant
M: No you say put elephant in
C: Put the elephant in the left color brown no no elephant wait wait what the what this animal called
M: Which one
C: That one c-c-a-m-e
M: Camel
C: Camel yeah where the put the camel ummh put the camels in the blacks
M: Put the snake in
C: Where's it where's it

Language Play: Age differences did exist with younger learners engaging in play more frequently than older learners. However, once again task is likely to be a contributing factor (as seen by Task A result, $p < .01$).

Conclusion

This study represents a first step at examining how primary school aged EAL children work with one another, beyond just the linguistic level, during paired task based interaction. Differences between the older and younger children tended to relate to the relative cognitive challenges of specific tasks. This was partly due to identical tasks being used for comparative purposes, and it is a limitation of the study. Additionally, as a whole, the participants in this study spanned middle childhood at its upper and lower levels. Greater age related distinctions may be found in a comparison of early childhood and middle childhood learners in future research. Further, larger numbers are needed to verify the findings here, which can only be seen as indicative.

Implications for research

Much of the previous research on L2 learners' production in language classrooms during middle childhood (e.g., García Mayo & Alcón Soler, 2002; Gibbons, 2006; Lightbown & Spada, 1994; Lyster & Ranta, 1997) has predominantly been teacher-fronted, and many studies have focussed attention on language form, a key issue in language learning. The research discussed here complements this work by focusing on the social and cognitive aspects of learners' interactions with one another. These aspects of interaction are being increasingly recognised as underlying effective interaction (e.g., Philp, 2016; Sato & Ballinger, 2016). These findings also align with recent research on engagement and its role in classroom interaction and learning. The data in the current study point to the usefulness of engagement as a potential framework for understanding the elements seen to be interacting in and with students' learning; that is, the linguistic, social and cognitive aspects as found in this study. (See for example, Philp & 3, 2016; Shernoff, Ruzek & Sinha, 2017; Svalberg, 2012.)

Implications for educators

This study shows that peer interaction can be powerful for language learning – for both older and younger learners. Interestingly, both on- and off-task talk showed potential for the students' language learning, stretching their language resources. However, where there is careful selection of age appropriate tasks, benefits of interaction may be more evident. In this research tasks that were intellectually challenging, and interesting, produced more, and wider language than tasks that were intellectually straightforward. Therefore, task selection needs to take into account level of cognitive challenge (and interest) as well as linguistic demands.

Consideration also needs to be given to learner affiliation and social goals through careful peer matching. Furthermore ongoing teacher support for peer work can maximise the benefits for each child and pair or group. To achieve this teachers may need to provide scaffolding for the task, including ways to resolve disagreements, as well as scaffolding the language that L2 learners can use.

In spite of the limitations of this study, the research provides evidence that children acquiring L2 do engage with one another in ways that support one another's language production. Our finer-grained analysis was able to make transparent aspects of interaction

that have received scant attention in the L2 literature to date. What stands out is the dual importance of providing tasks that engage children both cognitively and affectively, and equipping children with the skills to collaborate effectively.

References

Baralt, M. Gurzynski-Weiss & Kim, Y. (2016). Engagement with language: How examining learners' affective and social engagement explains successful learner-generated attention to form. In M. Sato & S. Ballinger (eds.) *Understanding peer interaction. Research directions and pedagogical implications*. (pp. 209-240). Amsterdam: John Benjamins.

Bigelow, M., and King, K. (2016). Peer interaction while learning to read in a new language. In M. Sato & S. Ballinger (eds.) *Understanding peer interaction. Research directions and pedagogical implications*. (pp. 349-376). Amsterdam: John Benjamins.

Butler, Y. G., & Zeng, W. (2014). Young foreign language learners' interactions during task-based paired assessment. Language Assessment Quarterly,11, 45-75.

Butler, Y. G., & Zeng, W. (2015). Young learners' interactional development in task-based paired-assessment in their first and foreign languages: A case of English learners in China. Education 3-13, 43(3), 292-321

Chinn, C.A., O'Donnell, A.M., & Jinks, T.S. (2000).The Structure of Discourse in Collaborative Learning. *The Journal of Experimental Education*, *69* (1), 77-97.

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences.* (2nd edition). New York: Academic Press.

Cohen, E.G., (1994). Restructuring the classroom: Conditions of productive small groups. *Review of Educational Research, 64* (1), 1-35.

Cook, G. (1997). *Language play, language learning.* Oxford: Blackwell.

Damon, W., & Phelps, E. (1989). Strategic uses of peer learning in children's education. In T. Berndt. & G. Ladd (Eds.), *Peer relationships in child development* (pp. 135-157). New York: Wiley.

Dawes, L. (2010). Organising effective classroom talk. *Learning to Teach in the Primary School* 2nd edition, London: Routledge.

Ellis, R. (2009), Task-based language teaching: sorting out the misunderstandings. International Journal of Applied Linguistics, 19, 221–246.

Ellis, R. & Barkhuizen, G. (2005). *Analyzing learner language.* Oxford: Oxford University Press.

Fabes, A., Carlo, G., Kupaoff, K. , & Laible, D. (1999). Early Adolescence and Prosocial/Moral Behavior I:The Role of Individual Processes. *Journal of Early Adolescence, 19*, 1, 5-16.

Forman, E.A. (1992). Discourse, intersubjectivity and the development of peer collaboration: A Vygotskian approach. In L.T. Winegar, & J. Valsiner (eds.), *Children's development within social contexts: Meta-theoretical, theoretical and methodological issues* (Vol 1, pp 143-159). Hillsdale, NJ: Erlbaum.

Forman, E. & Cazden, C. (1985). Exploring Vygotskian perspectives in education: The cognitive value of peer interaction. In J. Wertsch (Ed.), *Culture, communication, and cognition: Vygotskian perspectives* (pp.323-347). New York: Cambridge University Press.

García Mayo, M.P. & Alcon Soler, E. (2002). The role of interaction in instructed language learning. *International Journal of Educational Research*, 37, 3-4.

Gass, S.M. (1997). *Input, interaction and the second language learner.* Mahwah, NJ: Lawrence Erlbaum Associates.

Gibbons, P. (2006). *Bridging discourses in the ESL classroom: Students, teachers and researchers*. London: Continuum.

Gillies, R.M. (2007). *Cooperative Learning: Integrating theory and Practice.* California, USA: Sage Publications.

Hay, D.F., Payne, A. J., & Chadwick, A. J. (2004). *Peer relations. Journal of Child Psychology and Psychiatry and Allied Disciplines, 45,* 84-108.

Hogan, D. & Tudge, R. (1999). Implications of Vygotsky's theory for peer learning. In A.M. O'Donnell & A. King, (eds.) (1999). *Cognitive perspectives on peer learning* (pp 39-66). Mahwah, NJ: Lawrence Erlbaum.

King, A. (1999). Discourse patterns mediating peer learning. In A.M. O'Donnell & A. King (Eds.), *Cognitive perspectives on peer learning* (pp 87-115). Mahwah, NJ: Lawrence Erlbaum Associates.

Kowal, M., & Swain, M. (1994). Using collaborative language production tasks to promote students' language awareness. *Language Awareness, 3*(2), 73–93.

Kutnick, P. & Kington, A. (2005). Children's friendships and learning in school: Cognitive enhancement through social interaction? *British Journal of Educational Psychology, 75* (4), 521-538.

Lightbown, P & Spada, N., (1994). An innovative program for primary ESL students in Quebec. *TESOL Quarterly, 28,* 3, 563-579.

Long, M. (1996). The role of the linguistic environment in second language acquisition. In W. C. Ritchie & T. K. Bhatia (Eds.), *Handbook of second language acquisition* (pp. 413-468). San Diego: Academic Press.

Lyster, R. (2002). 'The importance of differentiating negotiation of form and meaning in classroom interaction' in P. Burmeister, T. Piske, & A Rohde (eds.): *An integrated view of language development: Papers in honor of Henning Wode*. Trier: Wissenschaftlicher Verlag.

Lyster, R. & L. Ranta. (1997). 'Corrective feedback and learner uptake: negotiation of form in communicative classrooms'. *Studies in Second Language Acquisition 19*, 37-66.

Mackey, A. (Ed.). (2007). Conversational interaction in second language acquisition: A collection of empirical studies. Oxford: Oxford University Press.

Mackey, A., Kanganas, A., & Oliver, R. (2007). Task familiarity and interactional feedback in child ESL classrooms. *TESOL Quarterly, 41*(2), 285-312.

Mackey, A., Oliver, R., & Leeman, J. (2003). Interactional input and the incorporation of feedback: An exploration of NS-NNS and NNS-NNS adult and child dyads. *Language Learning,* 35(1), 35-66.

Mackey, A., Oliver, R. & Philp, J. (2006). The impact of planning time on children's task based interaction. *System, 34*(4), 547-565.

Mercer, N. (1996). The quality of talk in children's collaborative activity in the classroom. *Learning and Instruction, 6*(4), 359-377.

O'Donnell, A. (1999). Structuring dyadic interaction through scripted co-operation. In A. M. O'Donnell, A. & King. (1999). *Cognitive perspectives on peer learning*. Mahwah, NJ: Lawrence Erlbaum.

O'Donnell, A. M. (2006). The role of peers and group learning. In P. Alexander & P. Winne (Eds.), *Handbook of educational psychology* (pp. 781-802) (2nd ed). Mahwah, NJ: Lawrence Erlbaum Associates.

Oliver, R. (1995). Negative feedback in child NS/NNS conversation. *Studies in Second Language Acquisition, 18*(4), 459-481.

Oliver, R. (1998). Negotiation of meaning in Child interactions. The relationship between conversational interaction and second language acquisition. *Modern Language Journal 82,3,* 372-386.

Oliver, R. (2000). Age differences in negotiation and feedback in classroom and pair work. *Language Learning, 50*,1, 119-150.Oliver (2002).

Oliver, R. (2002). The patterns of negotiation for meaning in child interactions. *Modern Language Journal. 86*,1, 97-111.

Oliver, R. (2009). How young is too young? Investigating negotiation of meaning and corrective feedback in children aged five to seven years, pp.135-156. In Mackey, A. and Polio,C. (Eds.) *Multiple Perspectives on Interaction: Second Language Interaction Research in Honour of Sue M. Gass.* New York: Routledge.

Oliver, R. & Philp, J. (2014). *Focus on Oral Interaction*. Key Concept Series. Oxford University Press.

Philp, J.J. (2016). Epilogue: New pathways in researching interaction. In M. Sato, & S. Ballinger (Eds.), *Peer interaction and second language learning: pedagogical potential and research agenda.* (1 ed., Vol. 45, pp. 377-396). (Language Learning and Language Teaching; Vol. 45). Amsterdam: John Benjamins. DOI: 10.1075/lllt.45

Philp, J., Adams, R., & Iwashita, N. (2013). *Peer interaction and second language learning*. (Second Language Acquisition Research Series: Theoretical and Methodological Issues). New York: Taylor & Francis.

Philp, J. J. & Duchesne, S. A. (2008). When the gate opens: the interaction between social and linguistic goals in child second language development. In J. J. Philp, R. Oliver & A. Mackey (Eds.), *Second language acquisition and the younger learner: child's play? (pp. 83-103). Philadelphia: John Benjamins*

Philp, J. J., & Duchesne, S. (2016). *Exploring engagement in tasks in the language classroom*. *Annual Review of Applied Linguistics*, *36*, 50-72. DOI: 10.1017/S0267190515000094

Pinter, A. (2007). Some benefits of peer-peer interaction: 10-year-old children practicing a communicative task. *Language Teaching Research, 11* (2), 189-207.

Rubin, K.H., Bukowski, W., & Parker, J. (2006). Peer interactions, relationships, and groups. In N. Eisenberg (Ed), *Handbook of Child Psychology (6th edition): Social, emotional, and personality development*. (pp. 571-645) New York: Wiley.

Sato, M. & Ballinger, S. (2016). Understanding peer interaction: Research synthesis and directions. In M. Sato, & Ballinger, S. (Eds.) *Understanding peer interaction. Research directions and pedagogical implications*. (pp. 1-33). Amsterdam: John Benjamins.

Shernoff, D. J. Ruzek & Sinha, (2017) The influence of the high school environment on learning as mediated by student engagement. *School Psychology International, 38*, 2, 201-218.

Storch, N. (2002). Patterns of interaction in ESL pair work. *Language Learning, 52*(1), 119-158.

Svalberg, A. (2012). Thinking allowed: Language awareness in language learning and teaching: A research agenda. *Language Teaching, 45*(3), 376-388.

Swain, M., & Lapkin, S. (2002). Talking it through: Two French immersion learners' response to reformulation. *International Journal of Educational Research, 37*, 285-304.

Thomas, D. (2006*).* A general inductive approach for analysing qualitative evaluation data. *American Journal of Evaluation, 27, 2,* 237-246.

Tognini, R. (2008). *Interaction in languages other than English classes in Western Australian primary and secondary schools: Theory, practice and perceptions*. Unpublished, doctoral dissertation, Edith Cowan University, Perth, Australia.

Tognini, R., Oliver, R. & Philp, J. (2010). Rehearsing, conversing, working it out: Second language use in interaction with peers. *Australian Review of Applied Linguistics 33*(3), 28.1-28.25.

Toohey, K. (2000). *Learning English at School.* Clevedon: Multilingual Matters.

Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes.* Cambridge, MA: Harvard University Press.

Webb, N. M., & Farivar, S. (1999). Developing productive group interaction in middle school mathematics. In A. O'Donnell & A. King (Eds.), *Cognitive perspectives on peer learning*, pp. 117–149. Mahwah, NJ: Erlbaum.

Wray, A. (1999) . Formulaic language in learners and native speakers. *Language Teaching 32*, 213-21.

Wong-Fillmore, L. (1976). *The second time around: cognitive and social strategies in second language acquisition*. Unpublished PhD Dissertation, Stanford University.

Table 1 Summary of tasks

Task + Topic	Task Type	Sample language
A Animals, body parts, habitat	**Animal matrix** Matrix activity, match attributes/environment to different animals	YOUNGER D: did camel have wool? J: ca:mel I said do the camen have wool D: no camen camel
B Shapes, numbers	**City Scene** Find the shapes within a landscape, count and record totals for each shape	YOUNGER P: How many reptiles are there? [means rectangles] I: Rectangle… rectangle… 1,2,3,4,5,6,7,8,9,10…10…10 P: 10 only.
C Animals and colours	**Animal Grid** Identify the correct animal according to type and colour and place them in the right position on a grid	OLDER B: Ok put er put cow on the white spot J: cow on the white spot? B: here here left of bottom
D Athletics, numbers	**Athletics carnival** (e.g., running, jumping) Find and identify the different sports, count the number of people performing each	OLDER K: how many jumping you can see boys? B: ummh, I can see one two three I can see three jumping boys
E Animals	**Spot the difference activity** Find out the differences between similar pictures by asking questions	OLDER K: Do you have a cow eating grass? C: No

NOTES: Tasks A, B, D and E counterbalanced within age group. Task A - instruction +modelling by teacher + pair guidance; Task B - instruction + modelling by teacher; Task C - instruction only; Task D – instruction + 2 minute planning; Task E - instruction + 5 minute planning. (See Philp, Oliver et al, 2006).

Table 2 Coding categories

Construct	Operational definition	Example
Social Interaction:		
Cooperation	The pair work cooperatively towards task completion. Includes explicit or implied statements of willingness to collaborate	*Your turn;* *I like working with you*
Reciprocity	Participants listen to one another and take relevant turns. They maintain a shared understanding to enable task completion.	*M: Does the snake have wool?* *C: No* *M: Yeah* *C: Sna= wool what you do jumper like that? It don't have that. Wo:ol.* *M: The sheep the the sheep have yeah*
Resolution of conflict	Participants disagree with one another but are able to continue with the task.	*C: Put no, put a big cross* *M: Hey you cross too big* *C: No that to do like that before* *M: No* *C: Come on* *M: Does the el= giraffe have wool, no tail?*
Non-resolution	Participants disagree and are unable to resolve the problem. They appeal to an adult to resolve the dispute, or passively opt out of the task	*M: excuse me he shout at me* *O : no you shout at me* *M: no I didn't [angry frustrated]* *Assistant: c'mon boys be nice* *R: Hey wait we can't draw this one you gotta draw them* *H: How many oval in this photo?* *R: Hal you gotta draw them here.* *H: You draw them!*
Task management:		

Organising the task	Negotiation of turns, roles, how task is accomplished	D: OK then OK J: come on your turn
On task talk	Learners' talk is consistent with task requirements	B: don't do all the drawing and the truck?
Cognitive Involvement:		
Cognitive talk	Thinking aloud talk, may include elaboration, reflection and conceptual debate	*I think…* *No it cant because…* *Maybe…. but…*
Repetitive patterns	Turns reflect a lack of cognitive involvement, phrases are delivered quickly and formulaically	*how many x? how many y? how many z*?
Enjoyment	Turns reflect interest and pleasure in undertaking the task, including explicit statements of pleasure, appropriate giggling, and expression of delight	*I like doing this*
Focus on language:		
Supporting Language Production	Difficulties in communication cause participants to pay attention to language Additionally, peers co-construct meaningful utterances, supporting language production.	*R: Do horse have a have wool?* *H: What?* *R: What's that word? Wool. What that mean?* *M: Do=* *C: Giraffe* *M: Does the* *C: Giraffe has legs* *M: Does the giraffe have leg?*
Language Play	Includes instances of language play, where children express intrinsic enjoyment of the sound	Chn: Octogon Octogon Octogon *[accentuating vowel sounds with pleasure]*

Table 3 Age differences in children's engagement in task-based interaction

	Younger		Older	
Category	Mean	SD	Mean	SD
Social interaction:				
Co-operation	95.16	5.79	98.16	3.33
Reciprocity	98.94	4.51	98.99	2.37
Conflict resolution	3.40	4.88	1.45	2.67
Non-resolution	4.62	5.46	.80	1.46
Task management:				
Organising the task	9.24	7.18	6.40	5.74
On task talk	96.00	13.84[a]	99.38	1.60
Cognitive involvement:				
Cognitive talk	1.89	2.55	1.39	2.55
Repetitive patterns	3.80	7.09[b]	11.51	17.93
Enjoyment	1.34	2.62	.97	1.40
Focus on language:				
Focus on form	3.65	3.73	5.20	5.71
Supporting production	.39	1.07	.25	.56
Language play	.45	.99	.07	.39

Note: O = Older (9-12 yrs) Y = Younger (5-8yrs) [a.] sd Younger on task B = 31.05,

[b] Younger on Task A mean= 12.71, sd = 10.80, Older on Task A mean = 41.18, sd = 19.42

Table 4 Age differences in children's engagement in task-based interaction

Category	Result	P	r	Tasks
Social Interaction:				
Co-operation	O>Y	p<.01	0.303	D p <.01
Reciprocity	O>Y	p<.05	0.538	A p<.05
Conflict resolution	Y>O	p<.05	0.241	A p <.05
Non-conflict resolution	Y>O	p<.05	0.109	A p <.05 B p<.01
Cognitive Involvement:				
Repetitive pattern	O>Y	p<.05	0.272	A p <.01
Behavioural Management:				
On task	O>Y	p<.001	0.169	B, C, D p <.05
Linguistic aspects:				
Language play	Y>O	P<.05	0.244	A p <.01

Note: O = Older children (9-12 yrs) Y = Younger children (5-8yrs)

Task A (Animal matrix); Table B (City shapes); Table C (Animal grid); Task D (Athletics); Task E (Animal spot the difference)