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Any questions? Young children questioning in their early childhood education settings

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ABSTRACT

Young children's questions may offer powerful leverage for knowledge acquisition and deep level learning, yet often go unrecognised and undervalued in early childhood education (ECE) settings. When young children's questions are not heard or respected, they are denied their UNCRC Article 12 right to express their views freely and have 'due weight' accorded to them. A pilot case study framed by critical pedagogy and young children's rights perspectives was conducted in the Midlands region of England to investigate the nature and extent of young children's questioning in ECE settings and its relationship with knowledge acquisition and learning. Early childhood students recorded questions young children ($n = 9$) (2.2–4.5 years) asked in ECE settings. Four categories of young children's questions emerged, two oriented to knowledge acquisition and learning. Evidence also revealed effects of performativity impeding knowledge acquisition and learning by both adults and young children in ECE settings. Further study is indicated.

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Early childhood education; young children are researchers; young children's questions; young children's rights; children's agency

Introduction

This article explores young children's questions in their early childhood education (ECE) settings as leverage to express their views on matters affecting them. Findings are presented from a pilot case study conducted in the Midlands region of England for *Young Children's Questions* (YCQ), a new phase for the *Young Children Are Researchers* (YCAR) project (Murray 2017a; 2020). The YCQ pilot study investigated the nature and extent of young children's questioning in ECE settings, how it may lead to knowledge acquisition and learning, and how learning from the pilot might inform development of a larger study focused on young children questioning.

Associations between research, learning, and the democratic production of knowledge are central tenets of YCAR (Murray 2017a) and its new YCQ phase. Early in YCAR, participant educational researchers ($n = 29$) identified 39 research behaviours then ranked them in order of importance for high quality research (Delbecq and VandeVen 1971). To date, YCAR outputs have addressed the 10 highest ranking research behaviours:

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finding solutions, conceptualisation, basing decisions on evidence and seven categories of exploration (Murray 2012; 2013; 2016; 2017a; 2017b). ‘Questioning’ was ranked next in importance for high-quality research, providing the rationale for the YCQ study.

The central argument of this article draws from the pilot findings, and is framed by critical pedagogy (Freire 1972; Giroux 2020) and the children’s rights agenda (Office for the High Commissioner of Human Rights (OHCHR) 1989). When adults recognise and respond to young children’s questions, they afford their right to Part 1 of Article 12, from the United Nations Convention on the Rights of the Child (UNCRC):

State Parties shall assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child, the voice of the child being given due weight in accordance with the age and maturity of the child. (OHCHR 1989)

Conversely, aligning early education with externally imposed imperatives may limit opportunities for children to use questioning to pursue their curiosity to learn and realise their ‘right to express ... views freely in all matters affecting’ them (OHCHR 1989).

The article opens by reviewing extant literature concerning questioning *per se*, children’s questioning and adults’ responses to it, and children’s right to express their views through questioning. The study design is then introduced, findings are presented and critiqued, then the final section evaluates how findings respond to the research questions.

What is questioning?

Questioning is used when seeking information and is defined as an ‘expression of a problematic situation existing in the mind of the questioner’ (Tomasello 2003; Fahey 1942, 339). Children start using oral questioning as part of expressing their views at around two years, though young children’s formulation of verbal questions depends on their environments and trialling different question structures (Tomasello 2003; Legare et al. 2013).

Questioning has long been regarded a ‘fundamental human disposition’ and an important educational device (Bruner 1966; Gordon 2012, 53). Alongside ‘perception, memory and the testimony of others’ it is an aspect of inquiry that contributes to knowledge acquisition (Sato 2016, 329). Different question types have different purposes (Dillon 1982). Closed questions predominate in classrooms (Alexander 2020; Kohn 1999; Siraj-Blatchford and Manni 2008). They may assess learners’ knowledge or narrow learning to a single focus (Eason et al. 2012). Less common in educational settings are teachers’ open questions, yet these are more likely than closed questions to encourage learners’ higher order mental activity in contexts such as ‘authentic’ learning and ‘possibility thinking’ (Alexander 2020; Bruner 1966; Craft 2000, 5). Learners’ questions may be driven by ‘epistemic curiosity’: the ‘motive to seek, obtain and make use of new knowledge’ (Lauriola et al. 2015, 202).

In education literature, the topic of questioning as a pedagogic tool has been concerned principally with adults posing questions to children, not children questioning (Dillon 1983; Morgan and Saxton 1994; Wragg and Brown 2001). De Jesus et al. (2007) note that in school, children have few opportunities to ask questions and actively avoid asking questions. Teachers tend to adopt oral or written modes to frame their own

questions in classrooms (Whitton 2015; Wing 1991). Even in pedagogic spaces where more equal relationships are promoted, questioning tends to rely on words (Alexander 2020; Siraj-Blatchford et al. 2002). However, questioning is a ‘fundamental act of human agency’ (Causey 2015, 24) and young children use multiple diverse communication modes, many of which are non-verbal (Malaguzzi 1998; Gallas 1994; Bae 2010). If adults do not recognise and value the many questioning modes young children may adopt, young children are denied agency and their right to question as an expression of their views (OHCHR 1989, 12/1). Hardman (1973, 95) observes that adults cannot understand children’s thoughts and actions if they interpret them ‘in adult terms’.

Children’s questioning

Much literature concerning children’s questions comes from the field of psychology. Davis (1932) draws on several early psychological studies to establish that questions account for 11–22% of oral language among children aged 2–8 years. Sully (1896) recognised that young children’s ‘thirst for fact’ presents in their questions, and interest in children’s questioning for epistemic purposes has endured (Cifone 2013; Engel 2011; Isaacs 1944). Young children’s questioning is driven by natural curiosity: the innate need to ‘explain the unexpected ... resolve uncertainty and understand the unknown’, which inspires exploration (Berlyne 1966; Bruner 1966; Engel 2011, 626–627).

Psychologists have established that children’s questioning promotes cognitive development (Chouinard, Harris, and Maratsos 2007; Frazier, Gelman, and Wellman 2009). Frazier, Gelman, and Wellman (2009) found that children aged 2–5 years develop cognitively by using explanatory questions to seek causal information. Berlyne and Frommer (1966, 5) categorise children’s questions as factual, explanatory, dichotomous and interrogative, while Chouinard, Harris, and Maratsos (2007, 17) identify two types: information seeking (for fact and explanation) and non-information seeking (for attention, clarification, requests for action, permission, and play). Ronfard et al. (2018, 101) propose four stages in children’s questioning: ‘initiation, formulation, expression, and response evaluation and follow-up’.

Relatively ‘little is known about encouraging students to ask questions’ (Komatsubara et al. 2018). However, the role of social contexts for children’s questioning seems important (Piaget 1926, 30; Engel 2011; Wells 1999), with comments, reactions and responses from others promoting children’s questioning (Nelson and O’Neil 2005; Stivers, Sidnell, and Bergen 2018). Culture also appears to affect children’s questioning. Gauvain, Munroe and Beebe (2013) found that children aged 3–5 years in non-Western cultures were less likely than their Western peers to ask explanation-seeking questions that promote cognitive development. Similarly, Tizard and Hughes (1984) found that girls aged 5 years were less likely to ask adults questions in school than at home.

Furthermore, there is some consensus that educational cultures characterised by authenticity promote children’s questioning in ways that reify their learning (Alexander 2020; Wells 1999). Hedges and Cooper (2016) have built on Wells’ work (1999) to posit that ECE contexts that accommodate young children’s interests encourage them to ask ‘real questions’ that facilitate meaningful ways to learn. Equally, Flear (2020, 9) notes that young children aged 4–6 years ask ‘philosophical questions of fairness’ in contexts where they are engaged and interested. Moreover, young children use questioning to

establish how they are positioned in relation to others and their environment (Komatsu 2010). When compared with other subjects, presentations of children's questions are reported relatively widely in science education (Baram-Tsabari et al. 2006; Garlick and Laugksch 2008; Ireland 2017; Jirout 2020). Indeed, Sak (2020, 59) identified 'science and nature' as a principle theme in pre-school children's questions, though he found that only a quarter of teachers' answers to those questions were likely to support children's learning. In the field of education there are publications that advocate for teachers building curriculum from children's questions, but they do not form the dominant discourse (Gallas 1995; Helm and Katz 2016; Nicholson 1971).

Komatsubara et al. (2018) suggest that 'asking questions is fundamental for self-motivated learning', which is considered more effective than extrinsically motivated learning (Ryan and Deci 2000). However, in England, all registered early childhood settings for children aged 0–5 years in England must work to the *Statutory Framework for the Early Years Foundation Stage* (EYFS) (Department for Education 2020). Whilst the EYFS requires settings to provide opportunities for children to explore, it also includes the expectation that all children attain a prescribed and homogeneous set of early learning goals. Children's achievement of the goals by the end of EYFS forms part of the national regulator's judgement of individual settings' quality (Ofsted 2019b). Equally, whereas the goals include the statutory requirement that children must 'answer "how" and "why" questions about their experiences' they do not feature children asking questions.

Those working with children aged 0–8 years in England are expected to 'advocate for young children's rights and participation' and 'critically apply high-level academic knowledge of pedagogy and research evidence' (Early Childhood Studies Degree Network 2018, 13). They are also required to co-construct learning with young children (Department for Education 2013) and 'promote equality of opportunity ... democracy ... and mutual respect' (National College for Teaching and Learning 2013, 5). Yet more than half a century after Bruner (1966) observed that children's curiosity is often suppressed in formal education settings, recognising and responding to children's questioning is still absent from policy requirements for early childhood teachers in England.

Children's right to question as critical pedagogy

Although young children may not verbalise their questions (Tomasello 2003; Komatsubara et al. 2018), 'even babies ... are capable of expressing views' and do so using many different modalities (Lansdown 2005, 4). Since curiosity is a basic human desire (Bruner 1966; Engel 2015), their views may include questioning in various forms, including '... play, body language, facial expressions, and drawing and painting' (UN CRC/C/GC/12 2009; Chouinard, Harris, and Maratsos 2007).

Compared with psychological studies about children's questions in educational settings (e.g. Frazier, Gelman, and Wellman 2009; Engel 2011) there is a paucity of educational research in this area. This suggests that children's questions are not a priority for education (OHCHR 1989; Olsson 2013). Indeed, within the formal education system, children's interests, open-ended thinking and opportunities to express their views in matters affecting them tend to be subordinated to dominant adult narratives of control, performativity and 'testology' (Ball 2003; Malaguzzi et al. 2016, 331; Moss 2016). Data-led imperatives imposed on education cleave to the global economic

agenda, affecting even the youngest children, for example in respect of their readiness for school (OECD 2020; United Nations 2015, 4.2).

In England, features of the ‘banking’ model dominate education (Freire 1972). The focus on data charged performativity has resulted in a formal education system characterised by limiting academic standards, narrow curriculum and teaching to tests that measure and compare ‘progress’ of even the youngest children (Bradbury 2019; Ofsted 2019a). Biesta (2009, 36) observes that ‘we seem to have lost sight of questions about values, purpose and the goodness of education’. Reliance on big data in education accords the data ‘knowledge (and) power, shaping what and how questions can be asked and answered, how answers are deployed, and who can ask them’ (Kitchin and Lauriault 2014, 4–5).

Pressured by the drive for, and by, data-oriented to extrinsically fixed imperatives (Bradbury 2019), teachers are denied opportunities to engage with children’s questions that emerge from their intrinsic, authentic interests. Children’s questions in education tend to present in rather niche democratic spaces, including pedagogy of listening (Malguzzi et al. 2016), the project approach (Helm and Katz 2016; Kilpatrick 1918), ‘planning in the moment’ (Ephgrave 2018), or theory of loose parts (Nicholson 1971). Such spaces are accessed by relatively few children.

Such democratic spaces embody critical pedagogy, a theoretical perspective that gives:

... attention to the ways in which knowledge, power, desire and experience are produced under specific basic conditions of learning and illuminates the role that pedagogy plays as part of a struggle over assigned meanings, modes of expression, and directions of desire. (Giroux 2020, 4)

Giroux (2020, 3) highlights the attention critical pedagogy gives to democracy, social agency and situated contexts, and its rejection of techno-rational pedagogy ‘as merely a skill, technique or disinterested method’. These concerns are foundational to YCQ. Questioning is a form of expression and children’s voices include questioning in various modes from birth (UN CRC/C/GC/12 2009; Engel 2015; Lansdown 2005). Therefore, aligning ECE policy and provision with extrinsically imposed big data imperatives is likely to deny children ‘... the right to express (their) views freely in all matters affecting’ them (OHCHR 1989). Freire (1972, 69), attributed as the founder of critical pedagogy, asserts that dialogue is not possible when actors ‘... deny others the right to speak their word’ (69). Critical pedagogues reject the model requiring the omniscient teacher to transmit knowledge to the student who knows nothing (Freire 1972) and position children as ‘passive receivers and reproducers ... awaiting receipt of adult knowledge and enrichment’ (Dahlberg, Moss, and Pence 1999, 50). Instead, they theorise an alternative model that affords teachers and students opportunities to assert ‘a sense of their rights and responsibilities’ in situated contexts (Giroux 2020, 176). Critical pedagogy assumes children to be agentic, competent participants ‘in the creation of themselves’ (Dahlberg and Lenz Taguchi 1994, 2; McNair and Powell 2020). YCQ is a practical *and* philosophical endeavour that adheres to the principles of critical pedagogy (Freire 1972).

The YCQ pilot study research design

The YCQ pilot study was conducted in summer 2018 over four weeks of a student placement in early childhood settings. The placements give early childhood students

opportunities to complement their academic degree studies with experiential learning, gain work experience and build evidence towards Early Childhood Graduate Practitioner Competencies (ECSDN 2018) and Teachers' Standards (DfE 2013). The study design is outlined below.

Aim and research questions

The study's aim was to investigate the nature and extent of young children's questioning in ECE settings, how that may lead to knowledge acquisition and learning, and how this study might inform the development of a larger study about young children questioning. Four research questions guided the pilot study.

RQ1/ Do young children ask questions in their settings to acquire knowledge and learn?

RQ2/ What questions do young children ask in their settings to acquire knowledge and learn?

RQ3/ What are different ways that young children ask questions in early childhood settings?

RQ4/ How can the YCQ pilot inform a larger YCQ study?

Selected methodology and methods

Instrumental case study (ICS) was selected as a qualitative methodology that affords exploration and understanding of a specific issue through engagement in 'detailed in-depth data collection' (Creswell 2013, 97–98). In this context, ICS facilitated insights into the issue of young children's questioning as an expression of their views in ECE settings.

42 early childhood students were invited to collect data to inform these insights in the form of (i) observations of children questioning (ii) collection of children's artefacts as tools for their questions, and (iii) brief, explanatory interview conversations with children. The planned observations were narrative and snapshot. Narrative observations are detailed reports of events, while snapshot observations are brief, often spontaneous notes of what is witnessed (Murray 2019). All data collection were planned to occur naturalistically during everyday activities in settings, recorded using writing, photographs, audio or video footage as appropriate to each situation, then uploaded to a secure online space for analysis.

Co-researchers, participants and ethics

Emphasis on situated contexts that critical pedagogy affords influenced an early decision to recruit early childhood students as Co-Researchers (Co-Rs) during assessed placements in ECE settings for children aged 0–7 years. The selected university cohort of level 4 students ($n = 42$) had previously studied an assessed level 4 child observation module and had observed young children during at least one assessed placement. Many also had level 3 child observation qualifications, and several were early childhood practitioners alongside studying, so observed children daily in settings. The levels

referred to here form part of the European Qualification Framework (Official Journal of the European Union 2017).

All 42 students were invited to collect data with six children in each placement setting, yielding a sampling frame of 252 child participants aged 0–7 years. The study was guided by institutional and national ethics codes and procedures (British Educational Research Association 2018; University of Northampton 2014). In line with these requirements, child participants were recruited as follows: students received information and agreed to act as Co-Rs, setting leaders' and primary carers received information and consented to children's participation, then children received information and assented to participate (Appendix 1).

Ahead of their invitation to join the pilot study, all students in the cohort attended a face-to-face information session, supported by additional materials posted on the University's virtual learning environment (VLE). The session included an introduction to the study, step-by-step guidance and ethical considerations. VLE materials included the session PowerPoint presentation, children's interview conversation schedule, a data record sheet to contextualise uploaded data (Figure 1), plus information letters and consent forms. Co-Rs were also provided with a script featuring a bank of statements and questions to support them to secure children's assent ethically (Appendix 1).

The questioning modes (Figure 1) are synthesised from literature signifying young children's preverbal communication and gestures in questioning, (Chouinard, Harris, and Maratsos 2007), gaze in interactions (Filipi 2009), touch as an exploratory device (Arterberry and Bornstein 2015), and verbal questioning (Sak 2020).

Distinctions between students' professional and Co-R roles were discussed explicitly; engagement in YCQ offered students opportunities to build new research skills and enhance their curricula vitae. At the start of placements, time was allocated for students to become habituated and achieve insider status in settings before beginning research data collection (Griffiths 1998).

Analysis strategy

Co-Rs conducted deductive analysis *in vivo* by categorising the mode of questioning each child adopted (Figure 1), according to the framework based on extant literature (Arterberry and Bornstein 2015; Chouinard, Harris, and Maratsos 2007; Filipi 2009; Sak 2020). I then applied inductive thematic analysis to other aspects to allow codes and themes to emerge by clustering data based on related characteristics, then interpreting these to elicit meanings (Boyatzis 1998). Extracts from the analysis process are provided in Figures 2–6. I am an experienced researcher who worked as a teacher and teacher educator in early childhood for many years. I also shared and discussed the data with an early childhood practitioner experienced in research to secure trustworthiness of analysis and interpretation. Finally, I compared findings from the present study with extant research.

YCQ pilot study findings

2/42 Co-Rs collected research data, by conducting 19 observations of 9 participant children (75%) aged 2.2–4.5 years in 2/42 (5%) settings, amounting to 9/252 (4%) of the

Young Children’s Questions

Researcher’s Form for Uploading Data

Researcher’s name:					
Type of setting (tick one):	Primary School	Private Nursery	Maintained Nursery	Other	
Child’s pseudonym:					
Child’s age:years	months		
Child’s gender (tick one):	Girl	Boy		Not appropriate to say	
Where did the observation take place? (tick one):	Indoors		Outdoors		
What happened just before the observation? (one sentence)					
What question/s was asked?					
How was the question asked? (Tick one):	Verbal	Action	Touch	Gaze	Other
Describe how the question was asked (one sentence)					

Any other information?

Figure 1. Data record sheet.

KEY THEMES (INDUCTIVE)	
Excerpts from Co-R’s record sheets	Key themes
A1i: Indoors. Before the question, the child was clearing up and helping to put the chairs away. <u>‘Is it just there?’</u>	Checking, to conform
A2i: Indoors. Child was playing with his toys. <u>‘Miss Allie, what is it you have there?’</u> Co-R’s reflection: He was intrigued with what I was holding – medicine syrup in a plastic bag. He asked the question while trying to grab the plastic bag.	Curiosity/ information seeking
A1ii: Indoors. Child was standing on the chair looking out of the window. <u>‘Bye bye, are you going on the slide?’</u>	Positioning self in relation to World and others
3i: Outdoors. Going inside getting ready for lunch. <u>‘I want coat off please.’</u> Co-R’s reflection: Child was trying to ask me to take her coat off.	Seeking help

Figure 2. Extract from inductive data analysis 1 – Drawing themes from the data.

sampling frame. Six girls and three boys participated. The settings were a small, private village day nursery and a large maintained town day nursery. Practitioners’, children’s and Co-Rs’ ethnicities were not recorded; nor were children’s home languages.

KEY THEMES (INDUCTIVE)			
Checking, to conform	Curiosity/information seeking	Positioning self in relation to World and others	Seeking help
A1i: Indoors. Before the question, the child was clearing up and helping to put the chairs away. <u>'Is it just there?'</u>	A2i: Indoors. Child was playing with his toys. <u>'Miss Allie, what is it you have there?'</u> Co-R's reflection: He was intrigued with what I was holding – medicine syrup in a plastic bag. He asked the question while trying to grab the plastic bag.	A1ii: Indoors. Child was standing on the chair looking out of the window. <u>'Bye bye, are you going on the slide?'</u>	A3i: Outdoors. Going inside getting ready for lunch. <u>'I want coat off please.'</u> Co-R's reflection: Child was trying to ask me to take her coat off
Etc...			

Figure 3. Extract from inductive data analysis 2 – Tabulating data in themes.

KEY THEMES (INDUCTIVE), CROSS REFERENCED TO AGE			
Checking, to conform	Curiosity/information seeking	Positioning self in relation to World and others	Seeking help
A5i: Indoors. Child was having lunch. <u>'Can I go and play now?'</u> Co-R's reflection: Child had a worried face when asking the question because she was so eager to go and play. 2.10 yrs	A2ii: Indoors. Having lunch and having a discussion about nappies. <u>'Why does Annie poo in the toilet?'</u> Co-R's reflection: Child was shocked that Annie uses the toilet because he still uses nappies. He asked it in a shocked and upsetting way. 2.10 yrs	A6i: Indoors. Child was in the role play corner and asked her peer: <u>'Can you put some salt in my dinner?'</u> 2.6 yrs	A3ii: Outdoors. Child was playing outside. <u>'Up, up please.'</u> Co-R's reflection: Child was trying to ask me to get her up the climbing frame. 2.2 yrs
Etc...			
Mean age: 2.11 years	Mean age: 3.3 years	Mean age: 3.8 years	Mean age: 3.1 years

Figure 4. Extract from inductive data analysis 3 – Cross referencing themed data to age.

KEY THEMES (INDUCTIVE), CROSS REFERENCED TO GENDER			
Checking, to conform	Curiosity/information seeking	Positioning self in relation to World and others	Seeking help
A1i: Indoors. Before the question, the child was clearing up and helping to put the chairs away. <u>'Is it just there?'</u> (Girl)	A5ii: Indoors. Child was playing on the climbing frame <u>'Miss Allie, Miss Allie, why you not got coat on?'</u> (Girl)	B1i: I had cake at Mummy's party. <u>'Do you like cake?'</u> (Boy)	B1iii: <u>'I am Batman and Batman needs his coat zipped up.'</u> (Boy)
Etc...			
Gender: Girl 100%	Gender: Girl 57% / Boy 43%	Gender: Girl: 67% / Boy 33%	Gender: Girl 50% / Boy 50%

Figure 5. Extract from inductive data analysis 4 – Cross referencing themed data to gender.

QUESTION PRESENTATION TYPES			
Verbal (n=19)	Action (n=4)	Touch (n=1)	Gaze (n=2)
B1ii: <u>'Do you like cake?'</u>	A3i: <u>'I want coat please.'</u>	A3ii: <u>'Up, up please.'</u>	A1ii: <u>'Bye, bye, are you going on the slide?'</u>
Etc...			

Figure 6. Extract from inductive data analysis 5 – Data sorted into questioning modes.

Despite the small number of child participants in the pilot study, some indications emerged, both in respect of this early study *per se*, and what may be carried forward to inform a future study about young children's questions. Indications include key themes, modes of questioning, and specific variables concerning children's ages and gender.

Only some of the designated data collection methods were used by Co-Rs. All observations submitted were snapshot, none narrative; a few artefacts children used in their questioning were indicated in the data but no interview conversations with children were included. Co-Rs included brief critical reflections with 9/19 (47%) of their observations; these reflections supported the thematic inductive analysis process which elicited four key themes.

- Curiosity/information seeking (Figure 7)
- Positioning self in relation to world and others (Figure 8)
- Checking to confirm and/or conform (Figure 9)
- Seeking help (Figure 10)

Findings focused on children's curiosity and information-seeking questions

Findings presented in Figure 7 indicate that children asked questions when seeking information to satisfy their curiosity, including epistemic curiosity (Lauriola et al. 2015, 202).

Findings focused on children positioning self in relation to environment

Several participating children used questioning to establish how they were positioned in relation to others and their environment (Figure 8).

Findings focused on children checking to confirm and/or conform

Young children asked questions to check and confirm they were conforming to what they thought adults expected of them (Figure 9).

Findings focused on children seeking help

Young children used questioning in the study to ask for help, rather than seeking information (Figure 10).

Discussion

This section discusses critically how the findings from this pilot study address the nature, extent and features of young children's questioning in two ECE settings in the English Midlands. It also considers how their questioning may lead to knowledge acquisition and learning, and how this pilot study might inform the development of a larger study about young children questioning.

Theme	Child	Age: Y.M	Gender	Inside	Outside	CONTEXT / Question / Co-Researcher's Brief Critical Reflection (BCR)	Verbal	Action	Touch	Gaze
Curiosity / Information seeking	BILLY	2.10	Boy	√		BILLY WAS PLAYING WITH HIS TOYS. 'Miss Emily, what is it you have there?' BCR: He was intrigued with what I was holding: medicine syrup in a plastic bag. He asked the question while trying to grab the plastic bag.	√	√		√
	BILLY	2.10	Boy	√		BILLY WAS HAVING LUNCH AND HAVING A DISCUSSION ABOUT NAPPIES. 'Why does Annie poo in the toilet?' BCR: Billy was shocked that Annie uses the toilet because he still uses nappies. He asked it in a shocked and upsetting way.	√			
	DELLA	3.9	Girl	√		DELLA WAS PLAYING IN THE SANDPIT. 'What's your name?' BCR: She asked in a happy mood. She forgot my name as I do not usually work with her age group. She wasn't too confident in remembering my name so she asked for reassurance.	√			
	ELSPETH	2.10	Girl		√	ELSPETH WAS PLAYING ON THE CLIMBING FRAME. 'Miss Allie, Miss Allie, why you not got coat on?' BCR: Elspeth asked as if she was surprised I didn't have my coat. She had a shocked look on her face. I replied that I wasn't cold.	√		√	
	BRUCE	3.2	Boy		No information	BRUCE: 'What you doing?'	√			
	CHERIE	3.9	Girl		No information	CHERIE: 'Do you have a Mummy?'	√			
	CHERIE	3.9	Girl		No information	CHERIE: 'Do you have a Daddy?'	√			

Figure 7. Children's questions – Curiosity/Information seeking.

Did young children ask questions to acquire knowledge and learn?

The pilot study findings evidence that children aged 2.2–4.5 years asked questions for different reasons in different ways in their early childhood settings. Some of their questions appeared oriented to learning as they attempted to transform their experiences to help them understand their environment (Kolb 1984, 41) in ways indicated in (i) and (ii) below.

What types of questions did young children ask to acquire knowledge and learn?

Children in the pilot study asked four types of questions. Two categories were oriented to knowledge acquisition and learning: (i) information-seeking questions motivated by curiosity and (ii) questions about positioning themselves in relation to their environment. Two further categories are congruent with non-information seeking question types identified by Chouinard et al. (2007, 17): (iii) checking questions asked by children

Theme	Child	Age: Y.M	Gender	Inside	Outside	CONTEXT / Question / Co-Researcher's Brief Critical Reflection (BCR)	Verbal	Action	Touch	Gaze
Positioning Self in relation to the World and others	AMELIE	3.0	Girl	✓		AMELIE WAS STANDING ON A CHAIR LOOKING OUT OF THE WINDOW. 'Bye bye, are you going on the slide?'	✓			✓
	FIONA	2.6	Girl	✓		FIONA WAS IN THE ROLE PLAY AREA AND ASKED HER FRIEND: 'Can you put some salt in my dinner?'	✓			
	ARON	4.5	Boy	No information		ARON: 'I want to be your friend'	✓			
	ARON	4.5	Boy	No information		ARON: 'I had cake at Mummy's party. Do you like cake?'	✓			
	CHERIE	3.9	Girl	No information		CHERIE: 'Do you have a Mummy?'	✓			
	CHERIE	3.9	Girl	No information		CHERIE: 'Do you have a Daddy?'	✓			

Figure 8. Children’s questions: Positioning Self in relation to the World and others.

Theme	Child	Age: Y.M	Gender	Inside	Outside	CONTEXT / Question / Co-Researcher's Brief Critical Reflection (BCR)	Verbal	Action	Touch	Gaze
Checking to confirm and conform	AMELIE	3.0	Girl	✓		AMELIE WAS CLEARING UP AND HELPING TO PUT THE CHAIRS AWAY. 'Is it just there?' BCR: Amelie asked the question for reassurance. She held the chair while making eye contact to me (Co-R) asking if the chair belongs over there (table)	✓	✓		
	ELSPETH	2.10	Girl	✓		ELSPETH WAS HAVING LUNCH 'Can I go and play now?' BCR: Elspeth had a worried face when asking the question because she was so eager to go and play.	✓			

Figure 9. Children’s questions: checking to confirm and conform.

to confirm and/or conform to their perceived expectations, and (iv) children’s questions seeking help.

(i) *Children’s information seeking questions motivated by curiosity*

Figure 7 evidences that children’s questioning was motivated by curiosity to ‘seek, obtain and make use of new knowledge’: they asked questions in order to acquire knowledge and learn (Chouinard, Harris, and Maratsos 2007; Lauriola et al. 2015). The pilot study offers new data from the field of education that adds to an area of study previously

Theme	Child	Age: Y:M	Gender	Inside	Outside	CONTEXT / Question / Co-Researcher's Brief Critical Reflection (BCR)	Verbal	Action	Touch	Gaze
Seeking help	CHARLOTTE	2.2	Girl		√	CHARLOTTE WAS GOING INSIDE GETTING READY FOR LUNCH. 'I want coat off please.'	√	√		
	CHARLOTTE	2.2	Girl		√	CHARLOTTE WAS PLAYING OUTSIDE. 'Up, up please.'	√	√	√	
	ARON	4.5	Boy	No information		ARON: 'I am Batman and Batman needs his coat zipped up'	√			
	BRUCE	3.2	Boy	No information		BRUCE: 'You do it.'	√			
	BRUCE	3.2	Boy	No information		BRUCE: 'You play with me.'	√			
	CHERIE	3.9	Girl	No information		CHERIE: 'I don't know how to play this game.'	√			

Figure 10. Children's questions: Seeking Help.

dominated by psychologists (e.g. Berlyne 1966; Chouinard, Harris, and Maratsos 2007; Cifone 2013; Engel 2011; Isaacs 1944; Lauriola et al. 2015, 202). Findings in Figure 7 indicate that children asked questions to 'explain the unexpected ... resolve uncertainty ... and understand the unknown' (Engel 2011, 626–627) when seeking information to satisfy their curiosity, including epistemic curiosity: the exploratory 'motive to seek, obtain and make use of new knowledge' (Lauriola et al. 2015, 202). Initially, Billy (2.10 years) was more interested in exploring Miss Emily's bag of medicine than playing with his toys. Then, still in nappies himself, he wanted to understand why another child would use the toilet, so formulated and asked questions to find out. Elspeth (2.10 years) diverted her attention from the climbing frame to ask why the Co-R was not wearing a coat outdoors, while Della (3.9 years) wanted to be sure she knew the Co-R's name, so sought that information by questioning. Equally, Bruce (3.2 years) and Cherie (3.9 years) used questioning to seek and obtain information (Chouinard, Harris, and Maratsos 2007; Lauriola et al. 2015).

(ii) Children's questions for positioning self in relation to world and others

Some questions children asked seemed oriented to helping them understand their own position in relation to others and their environment (Figure 8). This category of questions resonates with Komatsu's finding (2010) that a girl asked her mother questions to ascertain aged 4.4-5.8 months to understand herself in relation to her peers at her Japanese *hoikuen* (daycare centre). These types of questions reveal self-awareness, considered a domain of emotional intelligence (Goleman 1995). Questions asked by Fiona (2.6 years) and Amelie (3.0 years) emerged during play. Aron (4.5 years) invites friendship, reiterating Corsaro's (2003) recognition that young children value peer relationships. In another question, Aron draws on a memory as the basis for exploring another person's preference, and whilst Cherie (3.9 years) asks questions to seek information, these are also oriented to helping her understand how others' experiences relate to her own relationships.

(iii) Children's checking questions

Children in the study used checking questions to confirm or conform to what they seemed to think was required of them (Figure 9). Amelie (aged 3.0) verbalised her question while beginning to enact a response she anticipated: holding the chair, ready to position it in the place confirmed by the adult; Elspeth (2.10 years) requested permission to leave the lunch table to play. This finding reinforces research undertaken by Chouinard, Harris, and Maratsos (2007, 17) who suggest that children ask non-information seeking questions to clarify and request permission. Equally, Amelie's question 'Is it just there?'- and Elspeth's 'Can I go and play now' are both 'yes/no ... questions asking whether a particular proposition is true or false' (Berlyne and Frommer 1966, 183).

(iv) Children's questions for seeking help

Some of the questions young children asked were for seeking help (Figure 10): 'requests for action', established by Chouinard, Harris, and Maratsos (2007, 17) as 'non-information seeking' questions, rather than questions intended to transform experiences into knowledge or learning (Kolb 1984). There were some requests for personal care: Charlotte (2.2 years) and Aron (4.5 years) asked for help with their coats, while Bruce (3.2 years) and Cherie (3.9 years) requested help to play. Other questions asked by Charlotte (2.2 years) and Bruce (3.2 years) are purely requests for help.

Children's modes of questioning

For each child's question, Co-Rs were asked to identify communication modes that children adopted, including verbal, touch, action, gaze or 'other'. This was included because young children communicate in many diverse ways (Malaguzzi 1998; Gallas 1994; Bae 2010). Yet every question recorded by Co-Rs for the pilot study included a verbal element, while only 4/19 (21%) featured a child's action and 4/19 (21%) featured a child's gaze. In the present study, touch was only reported once as a questioning mode for any children's questions and no additional modes of questioning by children were reported. Similarly, Sak's (2020) data that was also gathered in an educational context emphasises young children's verbal questioning. Co-Rs in the present study reported that children used more than one mode of questioning for 6/19 (32%) of questions, and two modes for 3/19 (16%) of questions, including verbal and action modes ($n = 2$) and verbal and touch modes ($n = 1$). They adopted three modes of questioning for 2/19 (11%) of their questions (verbal, action and gaze/verbal, action and touch). Chouinard, Harris, and Maratsos (2007) recognises that questioning oriented to knowledge acquisition is enacted in various forms including verbalising, gestures and facial expressions, and that young children's questions are likely to be embodied. However, young children's verbal questions dominated the data that were collected for the present study.

Children's artifacts

It is a common human trait to imbue objects with emotional meaning and symbolism derived from experiences (Csikszentmihalyi and Rochberg-Halton 1981; Winnicott 1953). In this study, children used artefacts as tools for their questioning in their early childhood settings. These artefacts included a chair, medicine syrup in a plastic bag, coats, a slide, salt, dinner, cake, Mummy and Daddy. Objects can act as a conceptual

resources that support young children's questioning. Other studies have highlighted simple everyday artefacts that young children choose to interact with, for example, sticks (Waller, 2010), dirt (Clark 2010), wooden blocks (Gura 1992), pebbles, (fir) cones, and shells (Gandini 1998).

Garvey (1991, 51) notes that '... objects are the prime source of social exchange for the toddler'. Chouinard's study (2017) conducted in the field of developmental psychology revealed young children using objects for both information-seeking and non-information seeking questioning.

Children's ages and their questions

Among participating children aged 2.2–4.5 years, the mean age of children checking to confirm or conform was lowest (2.6 years). The mean age of children asking curiosity/information-seeking questions was 3.0 years, for children asking questions to seek help 3.2 years and for children asking questions to position themselves in relation to the World and others 3.7 years. Whereas younger children's questioning tended to focus on non-information seeking questions (Chouinard, Harris, and Maratsos 2007), including prosaic requests for personal care, clarification and permission, the oldest children's questioning in ECE settings were most likely to feature self-awareness (Goleman 1995). Nevertheless, children's curiosity/information-seeking questions are likely to be optimal for promoting knowledge acquisition and learning, because epistemic curiosity is a powerful 'motive to seek, obtain and make use of new knowledge (to) understand the unknown' (Lauriola et al. 2015, 202).

Children's gender and their questions

The distribution of question types asked by girls (G) when compared with boys (B) varied. Only girls asked checking for confirming/conforming questions, and more questions were asked by girls than boys about positioning themselves in relation to the World and others (G: 4/6, B:2/6). Questions asked by children seeking information (G: 4/7, B: 3/7) and seeking help (G: 3/6, B: 3/6) were more evenly distributed according to gender. However, twice as many girls ($n = 6$) as boys ($n = 3$) participated in the study. When this was accounted for, boys were twice as likely to ask questions to seek help than girls, and 1.5 times more likely to ask questions to seek information than girls. Pilot study findings, then, indicate some gender disparity regarding types of questions young children ask in their settings.

Children's agency and their questioning

The nature and extent of children's questioning in this pilot study are limited. On the one hand, children's information-seeking questions, motivated by their epistemic curiosity, demonstrated young children's capacity and agency in use questioning to form and express their views about matters they considered important in their ECE settings (Chouinard, Harris, and Maratsos 2007; Lauriola et al. 2015; OHCHR 1989/12/1). The eclectic nature of the questions children formulated for positioning themselves in relation to the world and others (Figure 8) also reflected children's agency to formulate

and ask them (Komatsu 2010). Equally, Amelie and Elspeth appeared free to express their checking questions (Figure 9), and since the Co-Rs recorded and reported children's questions, it may be argued that these were given at least some 'weight' (OHCHR 1989/12/1).

On the other hand, there were indications that the children's views expressed through questioning may not have been 'given due weight' commensurate with agency (OHCHR 1989/12/1). Data recorded by Co-Rs focused predominantly on verbal, not non-verbal questioning, suggesting that the Co-Rs tended to interpret young children's questions 'in adult terms' (Hardman 1973, 95). Equally, Co-Rs provided no data regarding adults' responses to children's information-seeking or positioning questions. Moreover, the purpose behind children's checking questions was deferential: Amelie and Elspeth asked adults for permission to act, indicating that neither child believed she had agency to form her own view (OHCHR 1989/12/1). Therefore, participating children could not fully realise either 'a sense of their rights and responsibilities' (Giroux 2020, 176), or their positions as agentic, competent participants 'in the creation of themselves' through questioning (Dahlberg and Lenz Taguchi 1994, 2; McNair and Powell 2020).

Conclusions, reflections and implications

This article has explored young children's questions in their ECE settings as free expressions of their views in matters that affect them, with reference to UNCRC Article 12, Part 1 (OHCHR 1989). The exploration centred on findings from the pilot stage of the *Young Children's Questions* study, guided by critical pedagogy (Giroux 2020). The aim of this initial YCQ stage was to investigate the nature and extent of young children's questioning in ECE settings, how it may lead to knowledge acquisition and learning, and how learning from this study might inform development of a larger study focused on young children questioning. Two Co-Rs, who were also early childhood students, gathered observation data concerning children's questions in two settings, to respond to four research questions, forming the pilot study's conceptual framework.

RQ1/ Do young children ask questions in their settings to acquire knowledge and learn?

Young children aged 2.2–4.5 years asked questions in their ECE settings that were oriented to acquiring knowledge and learning. However, not all questions they asked were oriented to knowledge acquisition and learning.

RQ2/ What questions do young children ask in their settings to acquire knowledge and learn?

Children asked four types of questions. Those focused on *Curiosity/ information seeking* and *Positioning self in relation to World and others* were oriented to knowledge acquisition and learning, particularly *Curiosity/ information seeking* which promotes epistemic curiosity (Lauriola et al. 2015). Conversely, children's questions concerning *Checking to confirm and conform*, and *Seeking help* focused on issues of personal care, clarification and asking permission and were not geared to knowledge acquisition and learning.

Young children's concerns evident in their questioning for *Checking* and *Seeking help* suggest that the children did not consider themselves agentic in their ECE settings.

RQ3/ What are different ways that young children ask questions in early childhood settings?

Children used some different questioning modes. Every child's question that Co-Rs recorded included a verbal element, but only some featured a child's action or gaze. Touch was only recorded once as a child's questioning mode and no other questioning modes were recorded. Co-Rs reported that children adopted more than one mode for 6/19 (32%) of their questions. Strong emphasis in the data on young children's verbal communication for questioning resonates with findings elsewhere (Sak 2020), and indicated that adults in settings may not readily recognise the many diverse modes young children adopt for questioning. These findings indicate that adults in ECE settings need high-level skills and sensitivity to recognise and respond to the diverse modes young children may use for questioning. Without these practitioner attributes, young children's right to be social agents using questioning to 'express their views freely in matters affecting them' in their ECE settings and for that expression to be 'given due weight' may not be realised (OHCHR 1989/12/1).

RQ4/ How can the YCQ pilot study inform a larger YCQ study?

Conducting the YCQ pilot study was helpful for highlighting several points that will be addressed when designing the main study.

- Participation in the study was limited: only 2 Co-Rs, 2 settings and 9 children participated.
- Recording practitioners', children's and researchers' ethnicities, and children's home languages would allow for consideration of possible effects of these variables on data.
- Each stage towards securing participant children's assent to participate presented a potential barrier to participation, so this model should be revisited.
- Co-Rs did not use all data collection methods available: no photographs, narrative observations or interview conversations with children were submitted, and few children's artefacts used in their questioning were recorded. Preparation for the main study should include enhanced data collection training.
- Only some observations included Co-Rs' reflective notes and contextual information; when they did, analysis was eased. Understanding the context of each question supported interpretation and understanding of the function and potential of each child's question for knowledge acquisition and learning.
- Low uptake by ECS students and ECE settings and incomplete data suggest weak motivation to learn about ...
 - Young children's questioning and its potential to realise their right to express their views and for those views to be respected
 - Young children's agency, knowledge acquisition and learning; these issues highlight pressures of an education system driven by performativity.
- Preparation for the main study should offer observers enhanced support for recognising young children's multiple communication modes.

This pilot study has highlighted issues concerning about young children's questioning as leverage for their knowledge acquisition and learning in their ECE settings. These issues are fundamental to young children's right to use questioning to express their views freely concerning their education, and for those views to be 'given due weight' (OHCHR 1989/12/1). They are also central to arguments that shape critical pedagogy (Giroux 2020). Low uptake, weak engagement and young children's anxiety to conform reveal effects of an extrinsically imposed performativity agenda on practitioners, students and young children in the ECE field. They 'illuminate the role that pedagogy plays as part of a struggle over assigned meanings, modes of expression, and directions of desire' (Giroux 2020, 4), and find that pedagogy wanting. Based on learning afforded by these findings, a larger study is indicated to explore in greater depth and breadth young children's right to express their views by questioning in their ECE settings, and for those views to be 'given due weight' (OHCHR 1989/12/1).

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Appendix

Appendix 1

Young Children's Questions Co-Researcher's Script Information for children and children's assent

Before you ask children to take part, ensure you have written consent from the setting leader and each child's parents.

From your knowledge of each child and the ethical requirements of the project, decide which questions and statements to share with the children before you collect data.

You can use a puppet or teddy to help with this activity, if you would like to.

Please ask the children and invite their responses:

- I want to do some finding out for a big project called Young Children's Questions. In the Young Children's Questions project, as well as being your teacher, I am being a researcher. Do you know what a researcher is? It is someone who finds things out.
- 'What is a question?'
- 'Can you think of some questions?'
- 'Is there something you don't know?'
- 'Can you think of a question to ask about it?'
- 'If you want to find things out, what do you do?'
- 'I want to find out about ways you find things out – can you think of some ways I can do that?'
- 'So... in the Young Children's Questions project you are being researchers – people who find things out.'
- 'For the Young Children's Questions project, some other teachers at nurseries are asking the children in their nurseries about the questions they ask.'
- 'We're going to collect together all the ways that children show and tell us they ask questions and we're going to write them all down.'
- 'Next we're going to tell lots of other people about the things children tell us about their questions – so that we can find out what questions children ask and how they ask them'
- 'Your mummies and/or daddies have told me you can be in the Young Children's Questions project. If you would like to be in the project, this is what we'll do. If you ask questions when you're busy playing, I will write them down. I'll take some photos of things you make that show you are asking questions and I will ask you about your questions.'
- 'Has anybody got any questions about the Young Children's Questions project now?'
- 'Would you like to be in the Young Children's Questions project?'
- 'If you would, show me your thumbs up! If you don't, show me your thumbs down. If you're not sure, do thumbs sideways.' (*You can take a photo of their thumbs up to demonstrate assent!*)

Please repeat the last two questions on each day you collect data