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**Title: Are young children's utterances affected by characteristics of their learning environments?**

**A multiple case study.**

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**5992 words including title, tables and references, excluding abstract and key words**

### **Abstract**

*Within English early childhood education, there is emphasis on improving speech and language development as well as a drive for outdoor learning. This paper synthesises both aspects to consider whether or not links exist between the environment and the quality of young children's utterances as part of their speech and language development and if so, the nature of those links. In a small-scale case study, data were captured in a natural environment and in indoor and outdoor classrooms. The quality of utterances was analysed using Type/Token Ratios (TTR) analysis.*

*Findings indicate that participant's speech quality differed according to environment. Children's lexical diversity was richer in a natural environment than in indoor and outdoor classrooms, which produced mirrored outcomes. The findings suggest that within the natural environment, where learning is child-initiated, the quality of utterances manifest in ways not found in indoor or outdoor classrooms, where learning is adult led.*

### **Key words**

Learning environments, language development, outdoor play, forest schools, type/token ratio

### **Introduction**

Speech and language (SL) development is crucial to a child's lifetime outcomes (Schoon, Parsons, Rush and Law, 2010; Field, 2010), yet has been identified as problematic for many children in England (Freeman and Hartshorne, 2009), which is one of the four United Kingdom (UK) jurisdictions. One in ten children in the UK presents with SL delay requiring long-term support (ICan, 2014) and in some regions, 50% of children entering school, at 4-5 years old do so with SL difficulties (Bercow, 2008). This issue prevails despite SL intervention programmes in early years settings, for example, 'Every Child a Talker' (DCSF, 2009). Enhancing young children's SL development in English early years settings is therefore regarded as paramount (Dockrell, Lindsay, Roulstone and Law, 2014) and is statutorily recognised as a prime area of learning and development for children aged 0-5 years (Department for Education (DfE), 2014).

Learning outdoors is another prominent area of discourse in English early childhood (White, 2014). The *Statutory Framework for the Early Years Foundation Stage* (EYFS) in England (DfE, 2014) requires all children aged 0-5 years to have daily access to an outdoor environment and English early childhood settings have tended to provide outdoor classrooms for which practitioners plan children's learning, creating a safe, but sterile environment (Constable, 2012; Ofsted, 2008; Rose and Rogers, 2012). Contemporaneously, English early childhood settings have become increasingly aware of children's need to access the natural environment and forest schools have become popular (Knight, 2013), offering '...all learners regular opportunities to achieve and develop confidence and self-esteem through hands-on learning experiences in a woodland or natural environment with trees' (Forest School Association, 2014).

Advantages of natural play include physical development and creative experiences (BERA/TACTYC, 2014; Fjørtoft, 2004; Knight, 2011). Though relatively little literature links the natural environment and SL development, there is sufficient to suggest that aspects of children's SL may be enhanced by experience in a natural outdoor environment (Department for Children, Schools and Families (DCSF), 2007; Richardson, 2014). This paper reports on a small-scale study that compared qualities of young children's utterances in three different learning environments: an indoor classroom, an outdoor classroom and a forest school environment.

An interpretative interactionist approach was adopted; being '...an attempt to join traditional symbolic interactionist thought, with critical forms of interpretive enquiry' (Denzin, 2001, xi). This follows the belief that SL develops with guidance, and interaction, with those around them (Tomasello, 2003) as well as interactions with the environment (Bakhtin, 1981). This is in contradiction to the view held by Chomsky (1965) whereby SL is innate and will develop irrespectively.

### **Background to the Study**

This short literature review considers types of learning environment, particularly the indoor classrooms, outdoor classrooms and natural environments that are common to English early childhood settings. The review goes on to discuss literature linking environment and language development.

#### *Types of learning environment*

The environment and interactions within the environment affect children's development and learning (Sutterby and Frost, 2006; Bruce, 2004). Equally, different types of learning environment have been documented (Harms, Clifford and Cryer, 2005), for example, 'home learning environment', 'informal learning environment' and 'formal learning environment' (Melhuish, Phan,

Sylva, Sammons, Siraj-Blatchford and Taggart, 2008; Whalley, 2007). The indoor classroom provides 'instructive learning environments and routines' indoors (Siraj-Blatchford, Sylva, Muttock, Gilden, and Bell, 2002:12); an outdoor classroom is 'a natural extension of what happens inside the classroom....in line with the activities offered inside' (Isaacs, 2012:88) and a natural environment is where children engage in play within a forest or woodland environment outdoors (Forest School Association, 2014).

### *Indoor classrooms*

Indoor environments are likely to have more pre-determined learning goals and greater emphasis on outcomes than outdoor environments (MacBlain, 2014). Yet physical features of an indoor classroom environment can impact on the experiences of teachers and children: temperature control, lighting, air quality and sound levels affect concentration, well-being, attendance and, ultimately, educational achievement (Higgins, Hall, Wall, Woolner and McCaughey, 2005). In indoor classrooms, children may feel inhibited by close proximity of adults and feel pressurised into answering questions according to adults' expectations (Neaum, 2012). Levey (2011:13) reports that 'the most important aspect of language and the classroom is that language needs to be related to the environment'. Whilst it is recognised that indoor classrooms may be prominent in a child's learning and development (Siraj-Blatchford *et al.*, 2002), learning outside is seen as increasingly important and beneficial to a child's future life chances and well-being (Louv, 2005; Knight, 2013).

### *Outdoor classrooms*

Passy and Waite (2013:173) indicate that much research about the impact of the outdoors on young children's learning and development is undertaken by 'enthusiasts' and may therefore be biased. In English early years settings, outdoor classrooms tend to replicate the learning experiences offered in the indoor classroom and are planned and managed accordingly (Isaacs, 2012). Whilst early childhood practitioners often show great commitment to children's SL development by developing communication rich environments and self-evaluating their work (Halden, Clark and Lewis, 2011), their focus tends to be on children's indoor classroom activity, rather than outdoor classroom activity (Riley, 2006). McArdle, Harrison and Harrison (2013:243) suggest that 'open-ended play and an open environment (are) interlinked' in early childhood settings and in England, indoor and outdoor classrooms often operate on a free-flow basis. However, the natural environment tends to be scheduled as a discrete timetabled session.

### *Natural environments*

Sutterby and Frost (2006) compared children's play in outdoor and indoor environments and found that outdoors children's play is noisier, messier, more autonomous and characterised by deeper levels of experimentation and exploration. It has been established that children need access to the

outdoors (Louv, 2005; Gill, 2007): Macmillan (1919) emphasised the value of outdoor play for children's development, health and well-being. Although children aged 0-5 years in English settings must have daily access to the outdoors (DfE, 2014), this requirement remains unsupported by a clear rationale from government. An influential early childhood group in England suggests that the main benefit to children for outdoor access is the opportunity for physical play (BERA/TACTYC, 2014) and Fjørtoft (2004), endorses this view. Opportunities for creativity and social development are posited as other reasons (Knight, 2011; Sutterby and Frost, 2006; Waite and Pratt, 2013). Knight (2011:89) suggests that 'self-expression facilitated outdoors has fewer boundaries, physical, psychological or emotional, than indoors'; such 'self-expression' may include SL. Yet there is little empirical research to correlate children's SL development with their experiences in natural outdoor environments. Forest schools originated from Sweden in the 1950s and have increasingly become an integral aspect of the curriculum in UK early years settings (Slade, Lowery and Bland, 2013). Forest schools, or natural environments, within England operate with the 'expectation that young children at least will be outside for long periods of time, interacting with wild spaces' (Knight, 2013:2).

#### *Are environment and language development linked?*

Children seem to develop differently according to environmental factors (Hughes, 2010), and this may include SL development (Neaum, 2012). Equally, children's involvement in activities can differ between environments and motivation and engagement are features of such involvement (Pascal and Bertram, 2001). Evangelou, Sylva, Kyriacou, Wild and Glenny (2009) advocate that children's learning requires adult support in all environments and that this support should include routines for learning, pedagogical approaches and relationships and interactions.

Chomsky (1965) claims that language development is a product of brain processes; he introduced the concept of the language acquisition device (LAD) which theorises that expressive language is an innate ability. Chomsky argues that LAD is the mechanism that enables young children to learn the wide range of vocabulary as quickly as they do. Children speaking different languages express equivalent words at similar ages in a similar order (Slobin, 1971).

Conversely, Skinner (1957) argues that communication is a learned behaviour resulting from adults speaking and reinforcing meanings so that young children master communication and expand their vocabulary. Skinner's theory is reinforced by cases of extreme neglect in which children only acquire SL once they experience interaction with those who have already acquired SL (Koluchova, 1972).

Lenneberg (1967, cited in Aitchison, 2000) argues that SL acquisition is an instinctively natural ability but that it cannot occur without guidance and example from experienced others. This theory has been developed further to suggest that language acquisition is a social process but only once the

innate development has occurred (Tomasello, 2003; Bruner, 1983). Usage-based theory argues that children need to first have the ability to communicate, then must hear language in social contexts, before they can begin to use expressive language themselves in social contexts, enabling them to expand their grammar repertoire.

Bakhtin (1981) identifies that 'learning to use language' means 'learning to interact with others in particular social situations or contexts', suggesting that children's interactions with the environment influence their SL development, rather than purely the environment and Jarman (2007) advocates for 'communication friendly spaces': physical features of environments that promote young children's communication. Cotton (2011:78) suggests that the 'pervasiveness of language and the child's instinct as a social learner' promote language-rich learning environments. However, peer behaviour within these environments could impact negatively on an individual's behaviour and generate a more passive learning environment (Kitzinger, 1997).

### *Summary*

The literature suggests that whilst the type of environment a young child experiences may affect SL development, features of interactions between the child and his or her learning environment may also be important. The present study therefore compared the qualities of young children's utterances in three different learning environments - an indoor classroom, an outdoor classroom and a natural environment to investigate if characteristics of each environment affected young children's utterances.

## **Methodological Discussion**

### *Research strategy*

The study adopted a qualitative approach featuring a multiple case study (Nolan, Macfarlane and Cartmel, 2013; Yin, 2014) which included qualitative and quantitative data. The 'cases' were three different learning environments in one early childhood setting for 4-5-year-old children in a suburban primary school in the English midlands: (i) an indoor classroom with provision for all statutorily required areas of learning (DfE, 2014), (ii) an outdoor classroom that was accessible from the indoor classroom on a free flow basis and mirrored the indoor activities and (iii) a natural environment outdoors which was a forest school on the school site.

The researcher who collected the data had previously been a practitioner for many years and participated in setting life whilst the research was being undertaken (Stake, 2000). Before the data collection began, the setting leader had said she was interested in participating, so there was a 'convenience' element to the sampling, yet the setting fulfilled the criteria for the study: it provided education and care for children aged up to 5 years who had regular access to indoor and outdoor

classrooms as well as a natural outdoor environment. The reception teacher (Miss S) was a qualified forest school leader, so engagement with the natural environment was an integral aspect of school life for participating children.

There were 30 children in the class - 21 girls and nine boys: maintaining manageability and rigour affected sampling decisions: the teacher was invited to select four children, representative of the class according to gender and EYFS communication and language development (DfE, 2014; O'Reilly, Ronzoni and Dogra, 2013) (Table 1)

*Table 1 – Characteristics of Participating Children*

	<b>Child 1</b>	<b>Child 2</b>	<b>Child 3</b>	<b>Child 4</b>
<b>Age</b>	5	4	5	5
<b>Gender</b>	Girl	Girl	Boy	Girl
<b>EYFS communication and language SL level at outset</b>	Above expected SL level	Below expected SL level	Above expected SL level	At expected SL level

Children moved freely between the indoor and outdoor classrooms, supported by one teacher and two teaching assistants. The indoor and outdoor classroom mirrored each other, with learning purposefully planned and resourced by the teacher, according to seven required areas of learning (DfE, 2014). The third 'case' for the multiple case study was the forest school on school grounds, which the children accessed once a week by crossing the school field with teaching staff.

One method was adopted across the three case study sites, securing trustworthy data (Guba, 1981) and providing an 'ecological approach' (Fawcett, 1996:13): audio observations for which children's utterances during their everyday activity were recorded. Voice recording devices were used because they were unobtrusive so provided authentic, trustworthy data. In order that the children were habituated to using the recording devices and research design issues were minimised, a pilot was undertaken (Bell, 2007). The pilot revealed that the recording devices kept falling out of the children's pockets, particularly in the natural environment, so putting the devices into small backpacks overcame this problem; the children's reactions to wearing the backpacks were positive and they could behave naturally while wearing them. Children wore the devices for the whole morning and speech was recorded throughout. During the audio observations, the researcher collecting the data was 'observer as participant', enabling a context to be applied to the recorded observation data (Johnson and Christensen, 2008:214).

### *Ethics*

The *Revised Guidelines for Educational Research* were adopted (British Educational Research Association (BERA), 2011) and ethical procedures were approved and monitored by my institutional ethics committee. The setting and children's parents were asked to sign consent and children were asked to consent also, on an ongoing basis, allowing them to withdraw from the study at any time throughout data collection. Data were stored securely and all identifiable features removed, ensuring confidentiality in line the Data Protection Act (Great Britain, 1998). During data collection, the researcher as participant observer consistently adhered to ethical considerations. Much is written about the protection of children who are directly involved in research (Palaiologou, 2012; Mukherji and Albon, 2010; Nolan *et al.*, 2013), and this study focused on ethical conduct regarding not only the key participants but all children in the setting. For example, because all children in the setting liked the backpacks, all were offered backpacks, ensuring equal respect and consideration (O'Reilly *et al.*, 2013).

### *Analysis*

Three methods of analysis were adopted to gain a balanced overview of (i) the qualities of the children's utterances, (ii) the themes of their discourse and (iii) the qualities of the three different environments. This made it possible to compare different sets of data to identify links. Because the focus of this study was SL, each environment was assessed using 'language-reasoning' elements of Early Childhood Environment Rating Scale (ECERS) (Harms *et al.*, 2005, 34-38), including provision of 'books and pictures', 'encouraging young children to communicate', 'using language to develop reasoning skills' and 'informal use of language'. This protocol ensured consistency across data analysis for the three different environments.

Five-minute vignettes of each episode of the children's recorded speech were randomly selected for Type/Token Ratios (TTR) analysis, used extensively when researching speech quality (Richards, 1987) and recommended by SL Therapists (SLTs) as a simple means of assessing quality of speech (Laing-Gillam and Justice, 2010). These vignettes were transcribed and TTR analysis applied. TTR analysis focuses on the lexical diversity of speech: the quality of utterances. To ensure children's learning behaviour was as natural and consistent as possible during the capture of data in surroundings to which they were acclimatised, their key horizontal transitions throughout the day were avoided – for example the beginning or end of the day (Vogler, Crivello and Woodhead, 2008).

Once the transcriptions of the recorded observations were completed, TTR analysis was applied and captured different aspects of the children's speech, including verb usage, adjectives, exclamations, nouns and semantics. An overall TTR score was obtained for each participating child in each of the three environments. Thematic analysis of transcripts was also undertaken to identify recurring

themes and links between utterances and environments. Repetitions - 'one of the easiest ways to identify themes' (Robson, 2011:482) – emerged during analysis and themes translated to findings. Data comparisons concerning children's utterances and different environments were made.

The ECERS analysis was undertaken by visual observation, and by discussion with the class teacher.

## **Findings**

### *Themes*

Data from inductive qualitative thematic analysis of audio observations and contextual observations supported ECERS and TTR analyses but was subordinate. It confirmed that the outdoor classroom reflected the EYFS provision of the indoor classroom and that adults' interactions with children were similar in both. Conversely, in the natural environment children initiated their own learning and their resources were only those that presented naturally in the forest. Interactions between adults and children were noticeably different from those in Cases 1 and 2.

Semantic themes also emerged from the children's conversations. For example:

Child 3 said:

- "But I was on a different tree than that. I went on a different tree. I went on the one that A is trying to climb" (Child 3 transcript, natural environment, week 1)
- "You can get stuck in the tree. There's a tree been cut down. There's a tree been cut down" (Child 3 transcript, natural environment, week 2)
- "Stay there. I jumped off of that tree. Yes" (Child 3 transcript, natural environment, week 3)

Child 2 said:

- "Red, I'm gonna get red, Um I'm doing pink. You could do red or pink?" (Child 2 transcript, classroom, week 1)
- "Now I'm trying something yellow, maybe a y is yellow. Y. Actually. O for orange." (Child 2 transcript, classroom, week 2)
- "I'm going to do two yellow ones, Look. A, I'm going to yellow sunshine. Shine, shine." (Child 2 transcript, classroom, week 3)

These script excerpts demonstrate that these children discussed similar topics, and used similar words and phrasing, over the duration of the study.

### *ECERS scales*

ECERS scales converted qualitative data into quantitative data. Using the language-reasoning element of ECERS (Harms et al., 2005), the indoor and outdoor classroom environments (Cases 1 and

2) both achieved the same score: 6.75 out of a possible 7, while the natural environment achieved an ECERS score of 4.5 out of a possible 7 (see Table 2).

*Table 2 – ECERS findings*

	Indoor classroom ECERS score	Outdoor classroom ECERS score	Forest school ECERS score
Books and pictures	7	7	2
Encouraging children to communicate	7	7	4
Using language to develop reasoning skills	6	6	5
Informal use of language	7	7	7
<b>Average ECERS score</b>	<b>6.75</b>	<b>6.75</b>	<b>4.5</b>

*TTR analysis*

Because contextual data and ECERS analysis highlighted that indoor and outdoor classroom environments were of similar quality in regard to provision for children’s SL development, but the natural environment differed, the indoor and outdoor classroom results were conflated for TTR analysis. TTR results are presented for each participating child in the classroom environments and in the natural environment (Table 3). Comparison of TTR results between different children and different environments indicates that lexical diversity was richer in the natural environment for three out of four children with only a 0.5% differential between the natural environment and classroom environments for the fourth child.

Table 3: TTR Results

	Noun	Pronoun	Verb	Adjective	Adverb	Preposition	Determiner	Exclamation	Connective	Overall TTR
<b>Child 1</b>										
Classroom average (Scripts 1,3,5)	50%	72.8%	57.9%	74.4%	66.7%	52.6%	49.2%	100%	57.5%	<b>54.4%</b>
Natural environment average (Scripts 2,4,6)	41.8%	58.5%	65.9	100	87.5%	80.6%	46.9%	75%	47.7%	<b>53.9%</b>
<b>Child 2</b>										
Classroom average (Scripts 1,3,5)	46.8	100	55.6	86.7	100	93.3	63.3	33.3	56	<b>52.9</b>
Natural environment average (Scripts 2,4,6)	41.9	87.5	66.8	100	55.6	88.9	70.5	75.7	48.1	<b>59</b>
<b>Child 3</b>										
Classroom average (Scripts 1,3,5)	46.8	100	55.6	86.7	100	93.3	63.3	33.3	56	<b>52.9</b>
Natural environment average (Scripts 2,4,6)	41.9	87.5	66.8	100	55.6	88.9	70.5	75.7	48.1	<b>59</b>
<b>Child 4</b>										
Classroom average (Scripts 1,3,5)	42.4	100	52.4	90	75	71.4	38.5	56.5	85.4	<b>48.2</b>
Natural environment average (Scripts 2,4,6)	33.4	83.3	61.5	80	100	64.5	44.4	60.7	54.3	<b>51.2</b>

TTR data (Table 3) indicate that verb usage was higher for all four children in the natural environment than the classroom environments, while exclamation usage was richer for three of the four children in the natural environment than the classroom environments and adjective usage was richer for three of the four children in the natural environment than it was in the classroom environments. However, while Child 2 and Child 4 differed little in their noun usage across the different environments, noun usage by two children (Child 1 and Child 3), was higher in the two classroom environments than it was in the natural environment.

## **Discussion**

### *Qualities of different environments*

ECERS and thematic analyses highlight that the qualities of indoor and outdoor classroom environments in the study setting mirrored each other in regard to SL development opportunities offered to children. In both classroom environments, provision, experiences and interactions were planned by adults and covered statutory English curriculum requirements (DfE, 2014) (Table 2). Since these requirements do not specify activities that an outdoor environment might provide, the study setting purely complied with the requirement that children have daily access to an outdoor environment.

Thematic analysis of audio observation transcripts revealed findings concerning semantics: 'meaning in a language' (Whitehead, 2011). The language children used varied according to their interactions and experiences in different environments: in the natural environment, their excitement and enjoyment were more evident in their language than was the case for the classroom environments. This finding aligns with Tomasello's claim (2003) that children's language development relates to environment and the people in it, as well as Levey's view (2013) that open air experiences generates a breadth of language because children feel less inhibited outdoors than they do indoors. Children often revisited conversations, with recurring themes. This consistency tended to be specific to a given environment, for example, colours in classroom environments or engagement with a tree in the natural environment (Tomasello, 2003).

ECERS analysis revealed the same high score for language reasoning provision in both classroom environments in regard to 'books and pictures', 'encouraging young children to communicate', 'using language to develop reasoning skills' and 'informal use of language' (Harms *et al.*, 2005:34 - 38). However, the ECERS language reasoning scores were considerably lower in the natural environment. Neither 'Books and pictures' nor specific resources to which ECERS- E refers for 'Encouraging

children to communicate' were not available in the forest school. Nevertheless, it may be argued that such materials provided by adults pressurise children to behave as adults intend, creating parameters that inhibit their own SL that emerges through child-initiated learning . As Knight (2011) observes, a natural environment is powerful for learning because it presents fewer boundaries; Harding (2005) endorses this view, noting that objects found in a natural environment encourage creative thinking due to their open ended potential. These findings also suggest that ECERS may not be appropriate for assessing the qualities of a natural environment: they do not account for aspects of that environment that may help children to learn.

Findings from ECERS and thematic analyses need to be considered in conjunction with the TTR analysis findings.

*TTR Analysis: Language variations.*

*Verb usage:* Physical benefits of outdoor play are widely recognised (BERA/TACTYC, 2014) and verb usage proved higher in the natural environment than in the indoor and outdoor classrooms for all four children (Table 3). Increased action-focused language may reflect children's higher activity levels in the natural environment.

*Adjective usage* was higher in the natural environment for three of the four children (Table 3) and tended to differ from adjectives presenting in the indoor and outdoor classrooms. For example, one child used adjectives including 'dry', 'new' and 'different' in a classroom environment and 'wriggly', 'sticky' and 'slimy' in the natural environment. Evidence suggests that the quality of adjectives children used in the natural environment was more onomatopoeic, perhaps because it offered more sensory experiences or engaged children more. The finding suggests that the whole physical environment may promote children's communication, confirming Jarman's view (2007) that young children's communication can be affected by aspects of the physical environment.

*Exclamation usage* was significantly higher in the natural environment, indicating that children were emotionally affected by their experiences in the natural environment and aligning with previous findings that the natural environment can enhance a child's well-being (Richardson, 2014). Equally, children may have felt greater freedom to express themselves as they were in smaller groups in the natural environment (Knight, 2011). This proposition aligns with Kitzinger's idea of 'bystander effect' (1997:16) suggesting that children in large groups become passive and conform to peers' behaviours.

*Noun usage* was lower in the natural environment than in the indoor and outdoor classrooms for three out of the four children (Table 3). The TTR percentage is reduced when the same noun is used repeatedly and children did this more in the natural environment. At face value, this finding may seem inconsistent with other TTR findings; however, deeper consideration suggests otherwise. TTR results were higher for exclamation and adjective usage in the natural environment, indicating children's excitement and engagement in the natural environment (Pascal and Bertram, 2001) leading to them staying involved in one activity with a limited number of objects, rather than flitting between experiences and encountering many objects, leading to a higher incidence of noun usage.

### **Conclusion**

This study found links between the quality of the children's utterances and characteristics of the learning environments they experienced. The study findings support an argument that children's experiences in natural outdoor environments affect the quality of their SL more positively than their experiences in indoor or outdoor classrooms. Evidence suggests that several factors underpin this finding; all relate to children's experiences of the natural environment.

Firstly, children experienced fewer boundaries and deeper involvement in open-ended play, important for learning (McArdle et al., 2013; Pascal and Bertram, 2001): noun usage indicated that children remained focused on one activity for extended periods in the natural environment. Secondly, the quality of children's exclamation usage indicated excitement and enjoyment of their surroundings, indicating positive links between the natural environment and children's expressive language (Levey, 2013; Tomasello, 2003), in addition to indicating well-being, another established factor for successful learning (Pascal and Bertram, 2001). Thirdly, the natural environment provided opportunities for children to experience activities in smaller groups, encouraging social interaction rather than passive learning (Kitzinger, 1997). Fourth, the natural environment offered an enhanced sensory experience, evidenced by children's adjective usage.

Finally, whilst ECERS was a helpful tool for measuring young children's language reasoning in formal classroom environments, the same could not be said for its use in the natural environment, though TTR analysis was a useful tool for measuring children's lexical diversity in both classroom and natural environments.

### *Limitations of the study*

The language-reasoning element of ECERS was not successful as a measure of children's expressive language in the natural environment. Equally, whilst a number of findings emerge from this study, its small scale means that these cannot be regarded as generalizable: lack of certainty is inherent in them. Nevertheless, 'fuzzy generalisation' is a feasible claim (Basse, 1999:54).

### *Recommendations*

Repeating this study across more settings with more children would secure generalizability of findings. Nevertheless, three recommendations emerge from the study that are not only useful for the study setting but may translate to other early childhood settings: fuzzy generalizability.

First, young children's language development may be enhanced by opportunities for child-initiated play in natural environments rather than an 'outdoor classroom' that mirrors adult planned, provision available in an 'indoor classroom'.

Second, given that this study found that young children's language was not only richer when they were in a natural environment, but was positively affected their interactions with people and objects within that environment, practitioners and setting leaders to the ways may wish to consider how they can support children to engage deeply in such interactions.

The development of a tool that is appropriate for measuring children's speech and language in the context of a natural environment is likely to be useful for practitioners and setting leaders.

## References

- Bakhtin, M. (1981) *Discourse in the novel*. In: Emerson, C. & Holquist, M. (eds) *The dialogic imagination: Four essays by Bakhtin*. Austin TX: University of Texas Press. Cited in: Smidt, S. (2013) *The developing child in the 21st century: A global perspective in child development*. Abingdon: Routledge.
- Bassey, M. (1999) *Case study research in educational settings*. Buckingham: Open University Press.
- Bell, J. (2007) *Doing your research project*. 4th ed. Maidenhead: Open University Press.
- BERA/TACTYC (2014) *Early years policy advice: Learning, development and curriculum*. [online] Available from: <https://www.bera.ac.uk/wp-content/uploads/2014/02/Early-Years-Summary-Learning-Development-and-Curriculum.pdf> [Accessed 4th October 2014]
- Bercow, J. (2008) *The Bercow report: A review of services for children and young people (0-19) with speech, language and communication needs*. Nottingham: DCSF Publications.
- British Educational Research Association. (BERA) (2011) *Ethical guidelines for educational research*. London: BERA Publications.
- Bruce, T. (2004) *Developing learning in early childhood*. London: Sage publications.
- Bruner, J. (1983) *Child's talk: learning to use language*. Oxford: Oxford University Press.
- Chomsky, N. (1965) *Aspects of the theory in syntax*. Cambridge: MIT Press.
- Constable, K. (2012) *The outdoor classroom: Ages 3-7*. Abingdon: Routledge.
- Cotton, H. (2011) *English and language outside the classroom*. In: Waite, S. (ed.) *Children's learning outside the classroom*. London: Sage Publications.
- Denzin, N. (2001) *Interpretive interactionism*. 2<sup>nd</sup> ed. London: Sage Publications.
- Department for Children, Schools and Families. (2007) *Confident, capable and creative: supporting boys' achievements*. Nottingham: DCSF Publications.
- Department for Children, Schools and Families. (2009) *Every child a talker: Guidance for consultants and early language lead practitioners*. Nottingham: DCSF Publications.
- Department for Education. (2014) *Statutory framework for the Early Years Foundation Stage*. London: Department for Education Publications.
- Dockrell, J., Lindsay, G., Roulstone, S. and Law, J. (2014) Supporting children with speech, language and communication needs: an overview of the results of the Better Communication Research Programme. *International Journal of Language and Communication Disorders*. **49**(5), pp.543-557.
- Evangelou, M., Sylva, K., Kyriacou, M., Wild, M. and Glenny, G. (2009) *Early years learning and development literature review*. Oxford: DCSF Publications.
- Fawcett, M. (1996) *Learning through child observation*. London: Jessica Kingsley.

- Field, F. (2010) *The foundation years: Preventing poor children becoming poor adults*. London: Crown Publications.
- Fjørtoft, I. (2004) Landscape as playscape: The effects of natural environments on children's play and motor development. *Children, Youth and Environments*. **14**(2), pp.21-44.
- Forest School Association (2014) *What is Forest School?* [online] Available from: <http://www.forestschoollassociation.org/what-is-forest-school/> [Accessed 15th December 2014]
- Freeman, K. and Hartshorne, M. (2009) *Speech, language and communication needs and the early years*. London: ICAN Publications.
- Gill, T. (2007) *No fear: growing up in a risk averse society*. London: Calouste Gulbenkian Foundation.
- Great Britain. *Data Protection Act 1998*. London: HMSO
- Guba, E. (1981) Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communication and Technology Journal*. **29**(1), pp.75-91.
- Halden, A., Clark, C. and Lewis, F. (2011) *Investigating communication, language and literacy development in the early years sector*. London: National Literacy Trust Publications.
- Harding, S. (2005) *Outdoor play and the pedagogic garden*. In: Moyles, J. (ed) *The excellence of play*. 2nd ed. Maidenhead: Open University Press.
- Harms, T., Clifford, R. and Cryer, D. (2005) *Early childhood environment rating scale*. New York: Teachers College Press.
- Higgins, S., Hall, E., Wall, K., Woolner, P. and McCaughey, C. (2005) *The impact of school environments: A literature review*. The Centre for Learning and Teaching School of Education, Communication and Language Science: University of Newcastle.
- Hughes, F. (2010) *Children, play and development*. London: Sage Publications.
- ICan (2014) *How many children have SLCN?* [online]. Available from: [http://www.ican.org.uk/What\\_is\\_the\\_issue/About%20SLCN/How%20many%20children%20have%20SLCN.aspx](http://www.ican.org.uk/What_is_the_issue/About%20SLCN/How%20many%20children%20have%20SLCN.aspx) [Accessed 6th December 2014]
- Isaacs, B. (2012) *Understanding the Montessori approach*. Abingdon: Routledge.
- Jarman, E. (2007) *Communication friendly spaces. Improving speaking and listening in the Early Years Foundation Stage*. Nottingham: Basic Skills Agency.
- Johnson, B. & Christensen, L. (2008) *Educational research*. 3rd ed. London: Sage Publications.
- Koluchova, J. (1972) Severe deprivation in twins: a case study. *Journal of child psychology and psychiatry and allied disciplines*. **13**(2), pp.107-114.
- Kitzinger, C. (1997) Born to be good? What motivates us to be good, bad or indifferent towards others? *New Internationalist*. April, p.15-17.

- Knight, S. (2011) *Risk and adventure in early years outdoor play: learning from forest schools*. London: Sage Publications.
- Knight, S. (2013) *International perspectives on forest school: natural places to play and learn*. London: Sage Publications.
- Laing-Gillam, S. and Justice, L. (2010) *Assessing primary-grade students in Response-to-Intervention programs*. [online] Available from: <http://www.asha.org/publications/leader/2010/100921/rti-progress-monitoring-tools.htm> [Accessed 28th March 2014]
- Lenneberg, E. (1967) *The biological foundations of language*. New York: Wiley. Cited in: Aitchison, J. (2000) *The seeds of speech: language origin and evolution*. Cambridge: Cambridge University Press.
- Levey, S. (2011) *An introduction to language and learning*. In: Levey, S. and Polirstok, S. (eds) *Language development: Understanding language diversity in the classroom*. London: Sage Publications.
- Louv, R. (2005) *Last child in the woods*. New York: Workman Publishing Company.
- MacBlain, S. (2014) *How children learn*. London: Sage Publications.
- McArdle, K., Harrison, T. and Harrison, D. (2013) Does a nurturing approach that uses an outdoor play environment build resilience in children from a challenging background? *Journal of adventure education and outdoor learning*. **13**(3), pp238-254.
- Macmillan, M. (1919) *The nursery school*. London: J.M. Dent and Sons.
- Melhuish, E., Phan, M., Sylva, K., Sammons, P., Siraj-Blatchford, I. and Taggart, B. (2008) Effects of the home learning environment and preschool center experience upon literacy and numeracy development in early primary school. *Journal of social issues*. **64**(95), pp95-114.
- Mukherji, P. and Albon, D. (2010) *Research methods in early childhood: An introductory guide*. London: Sage Publications.
- Neaum, S. (2012) *Language and literacy for the early years*. London: Learning Matters.
- Nolan, A., Macfarlane, K. and Cartmel, J. (2013) *Research in early childhood*. London: Sage Publications.
- O'Reilly, M., Ronzoni, P. and Dogra, N. (2013) *Research with children: Theory and practice*. London: Sage Publications.
- Ofsted (2008) *Learning outside the classroom: how far should you go?* [online] Available from: <http://www.ofsted.gov.uk/sites/default/files/documents/surveys-and-good-practice/l/Learning%20outside%20the%20classroom.pdf> [Accessed 8th December 2014]
- Palaiologou, I. (2012) *Ethical practice in early childhood*. London: Sage Publications.

- Pascal, C. and Bertram, T. (2001) *Effective early learning: case studies in improvement*. London: Paul Chapman Publishing.
- Passy, R. and Waite, S. (2013) *School gardens and forest schools*. In: Waite, S. (ed.) *Children's learning outside the classroom*. London: Sage Publications.
- Richards, B. (1987) Type/Token Ratios: what do they really tell us? *Journal of child language*. **14**(2), pp.201-209.
- Richardson, T. (2014) *SL development in a forest school environment: An action research project*. London: SAGE Research Methods Cases. [online] Available from: <http://srmo.sagepub.com/view/methods-case-studies-2013/n342.xml> [Accessed 4th October 2014]
- Riley, J. (2006) *Language and literacy: 3-7*. London: Sage Publications.
- Robson, C. (2011) *Real world research*. 3rd ed. Chichester: John Wiley & sons.
- Rose, J. and Rogers, S. (2012) Principles under pressure: student teachers' perspectives on final teaching practice in early childhood classrooms. *International journal of early years education*. **20**(1), pp.43-58.
- Schoon, I., Parsons, S., Rush, R. and Law, J. (2010) Children's language ability and psychosocial development: A 29-year follow-up study. *Pediatrics*. **126**(1), pp.73-80.
- Siraj-Blatchford, I., Sylva, K., Muttock, S., Gilden, R. and Bell, D. (2002) *Researching effective pedagogy in the early years*. Norwich: Crown Copyright Unit.
- Skinner, B. (1957) *Verbal behaviour*. New York: Appleton-Century-Crofts.
- Slade, M., Lowery, C. and Bland, K. (2013) Evaluating the impact of forest schools: a collaboration between a university and a primary school. *British journal of learning support*. **28**(2), pp.66-72.
- Slobin, D. (1971) *Psycholinguistics*. London: Scott, Foresmann and company.
- Stake, R. (2000) *Case studies*. In: Denzin, N. and Lincoln, Y. (eds) *Handbook of qualitative research*. 2nd ed. London: Sage Publications.
- Sutterby, J. and Frost, J. (2006) *Creating play environments for early childhood: Indoors and out*. In: Spodek, B. and Saracho, O. (eds) *Handbook of research on the education of young children*. 2nd ed. Mahwah NJ: Lawrence Erlbaum Associates.
- Tomasello, M. (2003) *Constructing language: A usage-based theory of language acquisition*. London: Harvard University Press.
- Vogler, P., Crivello, G. and Woodhead, M. (2008) *Early childhood transitions research: A review of concepts, theory and practice*. Working paper 48: Bernard van Leer Foundation.
- Waite, S. and Pratt, N. (2013) *Theoretical perspectives on learning outside the classroom: Relationships between learning and place*. In: Waite, S. (ed) *Children learning outside the classroom: From birth to eleven*. London: Sage Publications.

Whalley, M. (2007) *Involving parents in their children's learning*. 2<sup>nd</sup> ed. London: Sage Publications.

White, J. (2014) *Playing and learning outdoors*. London: Routledge.

Whitehead, M. (2011) *Developing language and literacy with young children*. 3rd ed. London: Sage Publications.

Yin, R. (2014) *Case study research: Design and methods*. 5th ed. London: Sage Publications.

## Tables

Table 1: Characteristics of Participating Children

Table 2: ECERS findings

Table 3: TTR Results