

Developing Children’s Critical Thinking Through Question and Dialogue: From The Recall of Knowledge to the Co-Construction of Knowledge.

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Context

Three early years settings in the West Midlands, UK and five pre-schools in Stockholm, Sweden began collaborating on a pedagogical project with young children in September 2012. They visited the other in an exchange between the two countries in October 2011¹. The rationale of the project involved partnership intentions to:

- Explore a pedagogic approach open to children’s questions and meaning making.
- Explore the relationship between teaching and learning to develop awareness, thinking and pedagogy.
- Explore actions of engaging and exchanging with families in meaningful ways.

This paper will explore the 1st aspect of the rationale.

The paper builds on research by Burton, Keyte-Hartland, Reynish & Watson (2010) regarding work at one of the three UK settings involved. It described a model of Continuing Professional Development (CPD) using pedagogical documentation in shared learning groups to co-construct a shared language to describe learning processes of children and pedagogical actions of educators. It was the desire to make the process of CPD sustainable and indivisible from everyday practice that sat behind the thinking of the research described in this paper.

The purpose of this socio-constructivist qualitative case-study is to outline the key strategies and findings developed over the last year from the UK educators

¹ *The exchange was organised through the UK organisation Sightlines Initiative and financed directly by each participating early years setting. Each UK setting was connected in their work by employing Debi Keyte-Hartland as their ‘Pedagogical Consultant/Artist Educator’.*

experiences of which I was part to tell the story of a learning community developing projects of co-inquiry² with a specific focus on the ways we ask children questions to encourage critical thinking.³

Regular group pedagogy meetings in each of the settings enabled deep discussion of documentation and experiences with children, and bi termly network meetings enabled cross- setting exchange of documentation and shared discussion. A further network meeting in Stockholm (March 2013) enabled all settings to exchange points of view whilst working directly alongside Swedish pedagogues in projects of co-inquiry in the Pre-Schools of Stockholm. Donald Schon (1974, p 73) suggested;

“Generative learning focuses on transformational change that changes the status quo. Double loop learning uses feedback from past actions to question assumptions underlying current view”.

Documentation and exchange of this kind enabled *“opportunity to re-listen, re-see and re-visit (re-cognition), both individually and with others...”* the processes of children’s learning, Rinaldi (2006, p 58). The idea of *‘being in exchange’* generated a live learning process that continually challenged and transformed our assumptions of learning and teaching.

At the root also of this work was the sense of Foucault’s ideas that truth and meaning are created through discourse. The discourse around past actions generated a context to challenge the ideals of learning that considered the remembering of facts and recall of prior knowledge as important, Hirsch (1987). It also challenged the concept of the normalising curriculum discussed by Dahlberg,

² *Co-Inquiry as we view it is based on Forman & Fyfe’s description of negotiated learning (2012, p 254). It is the transformation in teaching and learning that shifts from describing knowledge (re-presentation of what is already known) to the design and co-construction of new knowledge as part of or within a group learning context.*

³ *Critical thinking features as part of the Characteristics of Effective Learning embedded within the Early Years Foundation Stage non-statutory guidance material “Development Matters in the Early Years Foundation Stage”. Early Education (2012) Although there are many sources and frames of defining critical thinking, we used this material as starting point in order to begin to define what it means and looks like for us within our project. At its simplistic level it is described as a way of thinking about ideas, finding ways to solve problems, making links and noticing patterns in their experience, hypothesising, planning, making decision and changes, evaluation and review.*

Moss & Pence (2007) as a way of standardising knowledge and skill and also the concept of Neoliberalism and the increasing tendencies of technological practices where children are considered as subjects of taught, fixed knowledge deemed important by economic and political policy, Dahlberg & Moss (2005).

Throughout the first year of this project I have conducted a case study of how educators choose, use and apply questions when working in group contexts with young children aged 2-4 years. Throughout, I was aware of the ethical challenges of engaging in this kind of action research, where I, as researcher was also a participant. In particular, I was aware of the power dynamic in being the pedagogical consultant brought in by the head teachers to mentor educators through the project process whilst simultaneously researching the effectiveness of the pedagogical approach with children. My thinking led me to Foucault's view of power as a complex strategic situation in a given society, a concept involving both constraint and empowerment. I was careful to point out participants right to choose not to participate in the process of the case study at all, or to withdraw at any stage.⁴

I was anxious to establish a trusting dialogue that valued multiple perspectives and shied away from the instruction and transmission of knowledge. Dialogue as Freire described is a rich and highly involved process, it is *"the encounter between men, mediated by the world in order to name the world....It is an act of creation"* and this act occurs between equals, acting with *"love humility and faith"* in a *"climate of mutual trust, which leads the dialoguers into ever closer partnership in the naming of the world."* (Freire, 1970, p 77) Therefore, my role as facilitator of learning groups aimed not to speak to the group of what they should be doing but rather to dialogue with them about their experiences and views.

For the collection of evidence, I used a number of strategies, most notably the use of semi-structured focus group discussion⁵, one-to-one interviews and questionnaires.

⁴ The study also conformed to the BERA Ethical Guidelines.

Written evidence was available through reflective journals, the project logs of each group and the pedagogic documentation produced by the educators.

The process of research and how it has impacted on practice

Learning groups were established in the three UK settings and were co-lead by myself in my work as the pedagogical consultant and the lead teacher in each. There was a mixture of one-to-one, paired and group work sessions throughout the year. Some were weekly, every other week and every 6 weeks. Participants included head teachers, teachers, nursery educators, senior management, and outreach workers. Learning was negotiated as a group democratically and knowledge was considered as fluid. Using Alexander's (2008, p 29) description of teaching as negotiation, group learning was "created afresh" rather than "handed down" thus engaging the group as active learners and co-enquirers. The process has been influenced by Rinaldi's (2006) reflections on collegiality. Meaning that was established, created and shared around the table was learning of all and co-constructed from joint analysis from within the group.

Traces of documentation were used to develop shared interpretation of the materials to attempt to find and construct meanings of key concepts and practices that are discussed in the Main Findings:

- The importance of belonging and **group membership** (the context for sharing ideas and thinking)

⁵ According to Thomas (2009, p 170) 'the term focus group has come to be used interchangeably with group interview, but the two kinds of group are different in important respects. In group interviews the emphasis is on the researcher taking a lead role, asking questions and being in control of the discussion - rather in the way that an interviewer leads in a structured or semi-structured interview. In a focus group the researcher plays the role of facilitator or moderator – facilitating discussion among participants, not between himself and the participants (a marginal rather than pivotal role)'.

- **Generating contexts of critical thinking** as a basis for co-inquiry and shared dialogue in and of the group.
- The use of the **expressive languages** to co-construct new learning/thinking.
- The **multi-modal and cross pollination of multiple languages** of expression i.e. Malaguzzi's idea of the 100 Languages of Children⁶ to explore and engage critical thinking and children's meaning making.

In group work with the educators, democratic participation and group discussion were not easy to develop. Some individuals stayed quiet, seemingly letting others do the talking for them, others took on the role of spokesperson for the group using their own perspective as if it was an agreed group opinion. There were moments when I considered individuals to be fearful of talking in the group as if speaking aloud was to place them in a shameful or vulnerable position. The presence of others within the group, visitors and head teachers sometimes affected the group dynamic. I felt at times I or my co-group leader were too quick to fill the gaps of silence or rush to correct what was being said when instead it may have been wiser to have sat in hesitancy and allowed the silence to speak. It became increasingly clear that our facilitation of adult learning groups should mirror the group learning processes of the children i.e. to generate contexts of and for learning and not correction and delivery of absolute truths.

Main findings and discussion

Group Membership

Children were grouped in different ways, some according to the allocated teaching groups chosen at the beginning of the year, some because of the mix of their competencies and strengths, others selected around friendship and social grouping. We setting developed groups to foster “...*strategies of research, comparison of ideas, and co-participation...*” Reggio Children (2010, p 11).

⁶ Loris Malaguzzi, founding teacher of the Municipal Pre-Schools of Reggio Emilia, Italy wrote a poem entitled the 100 Languages of Children, that talked about children having many ways of expressing and communicating and learning about the world and that the process of 'school' often stole 99 of the languages.

For any learning group be that of the children or educators, a sense of trust in the process of exchanging differing points of view where all ideas and thoughts were valued was important to establish. In groups where there was not a strong sense of belonging or trustful relationships, dialogue and discussion was often stunted. Therefore it was important spending time getting to know one another and having shared experiences rather than make assumptions we were all 'friends' just by sitting in a circle.

An example of this was when a small group of 5 children were asked how they could help another child in the group feel better. (He had been upset by an incident outdoors.) The video of this interaction taken by the educator involved revealed how her questions (which she thought were being ignored) were answered in action rather than verbal response. At first she did not see this as one of the children began using humorous gestures of pretence to pick up imaginary objects from the floor and present them to the group. It began as an almost invisible exchange, he would dip down, as if to rummage on the floor and then rise presenting an imagined object to the group. This developed into a shared game, where the children waited in anticipation for his gifts that he subsequently began to label as random objects that resulted in deep laughter from the group and the boy who was upset, now re-engaged and happy. It was these types of moments that helped to generate a sense of groupness and reminded us that children find solutions and ideas to answer questions involving humour, action and gesture.

Other indicators of group membership included, photographic representations of the group, engagement in portrait drawing that was used as a group identifier, shared games to get to know the others in the group, and the use of a visual timetable that indicated who was in a project group and where. The visual representation of group identity therefore was more significant than just being named as part of yellow or blue group.

Generating Contexts for Critical Thinking

The project focused upon the concept of “Place” and in how children engaged in a shared experience exploring and making sense of specific places whether they were natural or urban, the nursery grounds, a historical place of significance or places of fantasy e.g. an imagined wood. Children were observed in these places, photographs taken, dialogue recorded and group reflection sessions held with the children. Group sizes varied from 6 to 26 with an adult ratio varying from 1/6 – to 1/13 or 2/26. Photographs were shown back to the children as a visual aid, often to recall the lived experience.

I heard educators express disappointment with children, one described such a visit as “... *good, the children explored lots, but there wasn't much language*”. Comments like these were frequent as if the idea of an expedition was to find language like an object waiting to be discovered. Some educators expressed a fear of giving children language as if it to converse would taint the experience or provide answers or force upon the children a particular point of view. This was expressed as by one educator as, “*I didn't want to intervene or say anything, I just wanted it to be pure and for it to come from the children of their own doing*”.

Others saw it as an opportunity to give language in a way that words and meaning were handed down to the children as a complete truth, “*We talked about it first so the children had the language and understanding.*” Interpretations were also made based on how the children moved in the places (jumping, crawling, running), the games they played (looking for giants, monsters, hide and seek, aliens) and the things their gaze and senses were drawn to (statues, sounds, water, trees).

The types of questions the children were asked in the beginning were;

- What did they like about the place?
- What was their favourite place?
- What did they remember about the place?
- What did they do in the place?

These initial reflection sessions were deemed as useful in the respect of remembering and recalling a shared experience (of which the adults were present to see for themselves.) Children often even in the smaller groups shied away from answering such questions or struggled to remain part of the group as levels of engagement dropped. The learning groups of educators reflected on the qualities of these questions and categorised them as testing or trick questions as the only purpose was to test the recall skills of the children.

It was found better to ask these questions by an adult who had a genuine interest (i.e. they were not there) and therefore provided a more genuine context to converse about what happened. However even in these situations children were not seen to be constructing new learning (knowledge) rather just repeating what was already known.

Questions that asked for opinions on what children 'liked' or 'favoured' were also problematic in not encouraging the construction of new learning, new opinions and often instead stayed with the known and familiar. The things the children liked were not open to discussion and therefore were unchangeable. Where opportunities arose where differing points of view could be encouraged and heard, educators used the question, "*do you agree?*" as a strategy for encouraging multiple perspectives.

The richer questions that engaged children's creative and critical thinking in the sense of Rinaldi's (2006, p 117) assertion that it is "*the ability to construct new connections between thoughts and objects that bring about innovation and change...*" were open questions that began with:

- I wonder how...?
- What would happen if...?
- What do you think about...?
- How can we...?

An example of *taking the known elements and creating new connections* involved a group of 3-4 year old children who were asked what they thought might happen in the nursery at night. This enabled the children to imagine and think beyond the everyday and known daily encounters and prompted them to imagine and construct stories together about giants and the problems they had in getting in and out of nursery at night and of what to do when one of them swallowed an accordion. As well as engaging an aesthetic imaginative sense and dramatic narrative, the educator posed problems seated within their story that created opportunities for shared problem solving. For example, “*How do you think the giant could get the accordion out of their body?*”

Another example of *constructing connections between thoughts and objects* was when a group of 2-3 year olds were asked, how did the water come out of the floor (after visiting a water fountain). One of the children used their whole body in a series of physical gestures that communicated to the rest of the group the force of the water from the floor, progressing upwards and spilling and spraying over. This verbal question and gestural answer was then invited to be drawn, the gestures of one child being transformed into marks by others as a shared visual theory about direction and forces.

Expressive Languages and the Co-Construction of New Learning

Drawing (as one of the many expressive languages) traditionally has been situated within the realm of self-expression that unfolds in specific stages of development. Largely viewed as a model that begins with meaningless scribble rising through stages of more formed marks, often made by chance developing to visual realism. This deficit model of viewing drawing as developmental is increasingly regarded as problematic by Gardner (1980), Matthews (2003), Anning & Ring (2004) as the emphasis is on accuracy, progression advancing via happy accidents and the role of the adult remaining passive.

The use of drawing as identified by Matthews (2003), Anning & Ring (2004) but also other expressive media such as clay, blocks and light/shadow could instead be

viewed as children' languages for thinking and meaning-making that develops within the social context of sharing and exchanging ideas. Located within the realm of visual communication it involves singular or multiple forms of image-making that can be combined with words or other signs and media, Kress (1997). It can be created in many types of media and combinations from pencil to clay. The point is that it represents something to the maker and communicates something to its audience. It is dialogic from the beginning and imbued with meaning. It was this dialogic and discursive nature of expressive materials that fostered exploration and the construction of ideas.

Questions were asked of the children in groups for them to be answered in drawing, clay, block construction, modelling, light and projection work and other expressive materials. Sometimes these media were combined and not separated into distinct languages.

For example, children were asked in relation to a water feature that had caught their attention, what they thought might be in and under the water. The children drew creatures, scenarios and drainage systems. During one of these sessions, a discussion broke out when one of the children asked of the group, if water was alive? It seemed that the engagement of hands and minds was a rich arena for making associations and asking each other questions. This particular question was lifted and offered back to the group in a subsequent session for exploration. This type of *lifting up of ideas and theories* of one to become a shared inquiry of all has become something we want to develop further. It required us to listen to the children's ponderings (and not ignore them as confused or strange) and neither to jump too eagerly to answer their questions. Sometimes it was better to hold the question and return to it later, reminding the children of what was asked and having to hand empathetic materials to think through theories.

Multi-Modal and Cross Pollination of Multiple Languages of Expression

Research by Pahl (1999), Anning & Ring (2004), Kress (1997) focus on the concept of multi-modality as a way children construct knowledge and exchange meaning.

In the Pre-Schools of Reggio Emilia the concept of multi-modality could be applied to that of the 100 Languages of children that is a metaphor to describe;

“...thinking that creates connections between the various dimensions of experience rather than separating them...the hundred languages are understood as having the potential to be transformed and multiplied in the cooperation and interaction between children and adults...” Reggio Children (2010, p 10)

Multi-modality and the 100 Languages is more than the idea that children have preferences in how to communicate what they know i.e. in a musical way, or through clay and more than just combining media to construct understanding of something i.e. paint a statue, photograph a statue, make a statue from clay, talk about the statue. Rather we have come to see it as the children’s movement in-between languages and modalities that enable them to make further connections, and build upon the relationships of knowledge offering new perspectives and ways of thinking.

An example of this was the children’s engagement in mapping out an area of natural coppice land they had visited. Subsequent group work sessions had explored the ways in which they had explored it, what they thought might live there and also what the purpose of the drain cover could be. Children interwove elements from their observations with fantasy, creating a rich narrative of the place that gave it a new, shared identity. Towards the end of the year, the group was invited to create a map that captured the identity of the coppice for others to see and find. The map was a visual vehicle for exploring the places and spaces between things and although a visual device it encouraged the discussion of what was significant in the place that should make it onto the map. The map was then reduced in size, taken back to the

coppice and used as a reference to find things, check its readability and see if the children wanted to amend it. It became a material of evaluation and review.

Bateson (1972) challenged his audience to look at their hands and describe what they could see. Most people described fingers, palm, nails, knuckles, skin that covered bone. All of these things are relevant, they are indeed part of the hand, but classifying and naming the parts is only one way of looking and understanding. Bateson considered the spaces in-between the fingers and thumb the most important part. The space is in relation to the digits but it is the space that enables the digits to do all that they can. It is this interconnectivity that Bateson calls "*the pattern that connects*" that the construction of the map embodied. It involved a shift from the pedagogical pattern of classifying, naming and recalling the world to one that gave it an identity through the complex relationships between the children, educators, families, cultures, the objects and the places they encountered. Therefore the questions we asked the children during the design of the map needed to explore more these relationships/connecting patterns and spaces inbetween and not be guided by the temptation to simply name objects such as 'stick house'. This has become another area for further research.

There were elements of that map that existed in a fantasy way, for example a river and train track than ran through the area, clearly marked on the map but not visible to the eye. Children found it easy to hold both the idea of the river and track together with grassy, muddy and tree filled areas that were to be seen. It was the adult mind that found it difficult maybe as we are so used to naming and categorizing the things we could see (like the fingers, nails, knuckles) rather than the spaces in-between which for the children became connectors of places and passageways between one space and another, real and imagined. The children it seemed sought connection both in the real and imagined, in the observed and physical sense; they would roll down a hill to understand it and at the same time imagine they were a ball doing it yet the adult mind tended to separate the mind from body, the fact from fantasy. Kress (1997) reminds us that:

"Children act multi-modally, both in the things they use, the projects they

make, and in their engagement of their bodies; there is no separation of body and mind.”

Conclusions and next steps

The analysis of data focused on past actions supported the belief that the expressive languages offer children ways to communicate beyond the realm of speech but that it also helps them to organise knowledge, reshape it and make what they know visible and thus sharable with others. In many ways, therefore, we believe that we have now established a foundation on which we can begin to build a pedagogical approach that uses the expressive languages as vehicle for developing language and co-constructing knowledge as part of a group that seeks to move beyond the classification and recall of knowledge to one that embraces the spaces inbetween the unexpected and the unknown and is situated in the paradigm of meaning making.

There are many lines of possible development, some already outlined above, others include:

1. Increasing our confidence in using strategies both in group learning that encourages the exchange of differing points of view (contestment).
2. Defining in clearer and more visual ways our continued research so we can dialogue with other educators each sharing our strategies that support different types of knowledge construction.
3. Sustaining the perspective that we aim to seek how children learn rather than impart what we know.

4. Embedding the idea that seeks to see knowledge as fluid and transformable and open for further elaboration.

Our principle learning, and our principle thought for future development, is to mirror the learning groups of the children, to trust in the process of dialogue and exchange with others and not be afraid of the unknown and to continually seek to understand the ways in which children come to understand the world, the ways in which they construct meaning and express it in both verbal and non-verbal ways.

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