

LEGO STORYTELLING: AN INITIAL OBSERVATIONAL STUDY TO ENABLE CHILDREN TO BECOME PARTNERS IN THEIR OWN ASSESSMENT

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Abstract

This paper will explore the validity of an approach to assessment by reporting initial findings from pre study work with young children who have been observed playing with LEGO in a nursery setting. It will demonstrate how these interactions have informed our views on children as potential participants in their own assessment using traditional construction toys and the ways new technology could be used to truly listen and assess knowledge through the valuable medium of storytelling. Initial observations highlighted the following interesting aspects: (i) In the classroom, many of the “live” conversations that took place between the practitioner and the child were relatively shallow, rushed and interrupted. (ii) Video recordings of children enacting stories do not serve as the basis of a learning conversation as the children don't remember the story and are distracted by their own presence in the video. (iii) The children built stories with ready made objects and elemental objects rather than the more abstract bricks.

Keywords: Innovation, technology, research projects, assessment, storytelling LEGO, young children, Scottish Curriculum.

1 INTRODUCTION

1.1 The Scottish curricular perspective - Curriculum for Excellence overview

There are many views on the construct of curricula for young children (birth – 5 years) but a consensus is that it should focus on the interests of the child [1]. The rationale of the current Scottish curriculum is to equip children with the knowledge, skills and attributes needed for ‘life in the 21st century’ [2]. This broad premise acknowledges a rapidly changing world and allows teachers to implement a curriculum using professional judgement. This moves away from a more prescriptive approach which is then coupled with pedagogies which produce high levels of understanding and knowledge as well as rich and meaningful life skills for children.

There are a number of documents which have been produced to support the assessment of the Scottish curriculum [3] The approaches to assessment are attributed to the teacher who is tasked with using their judgement to make holistic or ‘best fit’ assessment of the child. The participation of the learners within evidence gathering is encouraged, and recording of the evidence must allow for progression and development. There is a caveat that learning is rarely linear and progress within children who are learning within a group, can manifest in different ways. Assessment is driven by the concept that a documentation approach is evidenced and that tracking of progress and achievement must take cognisance of the language which is used by the learners themselves. [4]. Guidance documents for teachers focus on the assessment of young children as involving high quality interactions, based on thoughtful questions, careful listening and reflective responses [5]. The curricular support documents, which were produced post curricular guidance, [1] introduce a more prescriptive attitude which in time may stifle the original ethos and the innovative approaches to assessment which are needed [6]. Listening is one of the key approaches promoted in the assessment of the individual child [7]. Meaningful listening to young children alongside observations and other key methods of sharing and recording the assessment of learning, is currently recorded using artefacts such as; children’s drawings, photographs and videos which are all supplemented by the adult writing what has been heard or seen and then adding written reports to the evidence gathered [7 & 8].

1.2 Assessment

Any assessment of knowledge or understanding of meaning must be viewed as individual and any gaps which emerge from the alignment of the preschool curriculum can then be addressed [9]. In early years education there are still many features of a linear approach to learning which measures knowledge on comparable scales. Children's knowledge has been historically measured in the capacity of memory for example; where lists and charts were used to show the range of colours a child could accurately identify. In contemporary education there has been a shift away from this kind of testing to a documentation approach and towards a more holistic view of the child. Listening to the child using a number of different methods including: observation, photographs, drawing, role play, storytelling and other participatory tools, it is not limited to merely listening to what children have to say [10, 11 &12]. The information gathered by these apparatus is then documented in collaboration between the child and the adult where the child is seen as a competent participator [13]. In recent years this documentation approach has been heavily influenced by the methodology of the region of Reggio Emilia in Italy, where the ethos of using artefacts gathered from a wide range of activities and child centred learning can be used to holistically view the child [14].

It may be suggested that there is a fissure between the assessment of learning, the documentation of the learning and the planning to 'fill the gaps' in a child's knowledge. Focus on individual interests do not always fit into a group setting where there may be 20 – 100 children whose individual needs and interests cannot always be followed in a meaningful way. The assessment of the child's knowledge and importantly understanding of the planned and unplanned curriculum must also be squeezed into an already full schedule. This may be gathered in a somewhat piecemeal approach where each child will be assessed in a rota dependent on adult child ratio and the enthusiasm and understanding of the approach by the teachers themselves. The lack of competence of the nursery teachers making the assessment is well documented [15], often due to high demands on time and opportunity however these same teachers need to make changes, be bold and bring fresh ideas to the assessment agenda [9].

1.3 LEGO and role play in storytelling

Teachers are faced with difficulty assessing the knowledge and learning of very young children who have not yet fully developed communication skills. Young children who have limited writing, oral and drawing skills may be unable to demonstrate to the teacher what they know and what they are learning. Rather than receive tangible outputs which can be reviewed and assessed as part of an asynchronous learning conversation [16] the teacher can only assess the child within a synchronous conversation, which is time consuming and difficult to sustain in a setting where the teacher is working with a large cohort of children. The limitation of this phase in the education of young children is that misconceptions and misunderstandings that occur in the understanding of a child can remain undetected and therefore compounded by being used, reinforced and built upon in the learning of the child. Only once a child has developed more comprehensive asynchronous communication skills can some of these problems become evident.

If teachers are to form genuine partnerships in children's learning it is vital that they know when to support and participate, and when to intervene. Experiences expressed in a narrative form help cement memories and knowledge, therefore enabling experiences and listening to these narratives becomes vital [17]. Teaching in the early years involves an understanding of this narrative and an active learning approach where children are co constructors of their learning and meaningful partners in their own assessments, [1]. Story telling forms part of the rich tapestry of learning and assessment of young children and stories which children tell can illuminate and explore the understandings and conceptualization of the wider world which allow children to progress both educationally and socially [18].

An additional perspective proposed is that learning depends on stories that reveal contextualised knowledge. Work in linguistics has explored the use of stories in social interactions, where elemental aspects of the stories were reused, as appropriate. [19]. The aspect of particular interest in this work is that relevance of knowledge is claimed to be promoted and cemented through the contextualising influence of stories, and that stories trigger learning responses. At the same time, the construction and presentation of stories by children can be a means of exposing not only the knowledge that has been remembered, but also the way that knowledge is connected in their understanding.

When a child uses their imagination to tell a story, this could be manifest in behaviours of imaginary people or objects constrained to behave according to natural laws or societal norms. Alternatively, a

child may imagine behaviours for people and objects unconstrained by natural laws or societal norms. Stories have long been a vehicle for illustrating these positions and suggesting consequences that accrue from behaviour that deviates from these constraints. In addition, as children mature the use of metaphor begins to appear in the stories that they tell [20]. Stories, therefore, are very rich objects 'of' and 'for' learning. Making use of them in an effective way is a significant asset to an early years curriculum plan and a powerful resource for teachers.

Stories therefore, help children learn and to express the difference between reality, pretence and eventually, metaphor. If we acknowledge storytelling as a narrative to assessing the interests and understanding of a child [19] then symbolic or a pretend mode of play is a suitable medium to allow the child to express and create stories, which form a narrative to that play. During and beyond the symbolic or pretend play the imagination of the child can turn the tangible world into a non-literary opportunity where anything can happen within the depth and breadth of a child's imagination [21].

The goal of this pre study was to observe children in a natural state of imaginary play using the construction toy LEGO. The pre study focussed on one setting, where permission was sought from every child who attended over a five day week in the term. With these permissions any child who chose to play with the LEGO was then asked for their own consent to be observed during their play. This initial study is limited to one setting and to the LEGO which was available to the children during one week of observational study.

The discussion and examination of the initial findings from the pre study will inform possible future research where there may be a useful method of involving children in their own assessment. This would be by providing them with a tangible world environment possibly created from LEGO that they can manipulate to produce a non-tangible but recordable product in the form of a digital comic. From this there is then the opportunity to tell and to recall stories representing what they have understood and learned from the planned and unplanned curriculum. The product from this environment which is in the form of a digital comic could then be analysed to highlight understandings and potential misunderstandings.

2 RESEARCH QUESTION

The key research question to be addressed in any future studies, together with a cohort of Early Years practitioners and teachers will be: *Is it possible to assess the learning of concepts and meaning-making by young children with limited writing and drawing skills by analysing stories enacted in a tangible "world" and then by reviewing digital comics produced as a result?*

In order to begin to answer this question, initial research which has often focussed on looked primarily at the pretence and possibility thinking in narrative play [22 &10] can be scaffolded where, we believe there is scope in exploring how the story telling abilities of young children evolve and the role of a 'tangible world' storytelling environment within that evolution. Subsequently it will be necessary to explore the ability of young children to make digital comics and the nature of the comic creation tools that would be suitable for them.

For this reason, this study will focus on the use of LEGO as a storytelling medium. This work does not address the role of LEGO in developing creativity in construction, but rather uses LEGO as a means of providing a wide variety of flexible story telling props, scenarios and opportunities.

3 METHOD

The literature has suggested to us a hypothesis for an interesting study, but before moving ahead with this we wanted to look at the feasibility and suitability of the approach within a local early years setting. This study therefore was designed to be observational in nature to revisit the topics raised in the literature and to provide a scope future work.

3.1 Small scale pre study

This small scale pre study sought to:

- Use limited initial unstructured observations of children playing with LEGO to listen to their stories and to establish knowledge and understanding of a natural state of small world play which could enable storytelling.

- To use these initial limited observations to then inform further research into enabling young children to become partners in their own learning
- To initiate discussion with a wider childcare professional and research based community into the validity of converting stories created within a tangible world into a medium which could be used to continue the stories in a digital world.

Understanding that children create rich stories in their play which may be missed by their teachers as a method of assessment, the focus of this pre study was to observe children in a nursery setting as they played with LEGO, to establish if the stories being told could capture and establish new ways of assessing their understanding of the planned curriculum.

The data gathered from the observations would be used to allow the researchers to consider the next steps in the hypothesis that children can become partners in their own assessment in a meaningful way, when time and space is given to listening to the stories they are telling which makes sense of the world around them and the curriculum being experienced by them.

Semi structured narrative observations were made over five days in a local authority nursery school which volunteered to be part of the study following a call by the University. Permission was sought and given from all of the parents of the 89 children who would attend the nursery during the observation period. All of the children were aged between 3 and 5 years.

The children could elect to play with the LEGO during free play periods and 20 children from the possible 89 attendees were observed over the five day period. Each of the children gave their own permission for the observer to watch them and to record their play and the parents gave permission for the dissemination of the findings from the observations. All of the children are protected with anonymity within this work.

The pre study data was gathered following the regulations and ethical processes and permission of the University of Dundee.

3.2 Observations

As the observations were carried out in one setting over a short five day period very limited use of video was used as this is acknowledged as obtrusive with young children [23]. There was little time to become an unnoticeable member of the normal staff team and the children did show a considerable interest in the presence of the observer and the video camera when it was used. The observations were recorded predominantly in writing using a narrative approach. There was an unstructured observation schedule as the observer wanted to watch children in a natural state of play at a LEGO table within the setting. The manager of the setting had introduced new LEGO sets to the existing resources which may have encouraged more interest than normal for the children. This may have been influential in the emerging currency of the ready-made objects and pre-constructed elemental artefacts of LEGO which were new and novel to the children.

3.2.1 Staff Interaction

During the observation period the teachers were encouraged to interact as normal with the children, however with the presence of the researcher for such a short period of time it must be acknowledged that being part of the observations may have discouraged the teachers (by their own admission), from sitting for longer periods of time with the children during their play. The teachers were mindful that their presence could distract the children from peer play.

4 RESULTS

The children played at the LEGO table for periods of between 15 minutes and 1 hour during the five days of observations. As the observations were limited and only one setting was observed the initial observations can only offer insights which do not form representations of practice but have produced areas for the researchers to consider which mirror findings from existing literature.

4.1 Incidents observed

4.1.1 Observation 1.

In the classroom, many of the limited “live” conversations that took place between the practitioner and the child were relatively shallow, rushed and interrupted.

The nursery teacher is sitting at the table with the children. She is encouraging the children to build and is suggesting what to build. One child is building layers of colours (Fig.1) the teacher asks him what he is making but he does not reply. She asks

Teacher. *“have we decided what we are building yet”*

There is no reply. The boy layering the colours is asked again what he is building,

Teacher. *“is it a house?”*

Child. *“no”*

Teacher. *“is it a wall”*

Child. *“no”*

Teacher. *“is it lots of colours”*

Child. *“yes”.*

She then asks what his favourite colour is and discusses colours. He does not speak and nods at various questions He adds a new white layer and again is asked what he has built and does not answer, so the conversation goes back to colours. The teacher asks about more layers,

Teacher. *“are those stairs like upstairs in your house, can you count them?”*

Again the child says nothing. She reassures him that he is very good at building. He builds a staircase in white and balances this on the end of the block of colours. Another child comes over and the teacher tells the new child that the child already at the table has made a house.

Teacher. *“It’s a house isn’t it?”*

The child looks at the teacher and nods.



Fig 1 Child being questioned

4.1.2 Observation 2.

Previous studies [23] had shown that children become distracted by their own image in any video recording of their play, so we looked at this specifically within this observation period. Video recordings of children enacting stories do not serve as the basis of a learning conversation as the children don't remember the story as they are distracted by their own presence in the video.

Child A. *“there is me”*

Observer *“yes I took a video of you while you were playing, what were you doing?”*

Child A. *“those are my earrings, my mum bought them”*

Observer *“what were you doing with the Lego?”*

Child A. *“Look at my top, its yellow”*

Child A. "there is Chesney, look he is funny"

This interaction with the child's own image was seen in various iterations over the course of the five days of the pre study where the children asked to see the recordings which were being made. The children immediately focussed on their own faces, discussing who was next to them and began mimicking their own facial expressions. Any questioning to try to enable the children to recall and reflect on their play with the LEGO was largely ignored by the children who could not see beyond their own image.

4.1.3 Observation 3.

The children built stories with ready-made objects and pre-constructed elemental artefacts rather than the more abstract bricks. Where there were ready made objects such as a; cat, umbrella, pre constructed car, figure, plate and broom, (Fig. 2) the children began to narrate their play with role play stories more quickly than where they were constructing their own house or vehicle.

Child A (age 3). "I've got a tiny brush and oh a skateboard That's a cookie one, cookie cookie"

Child B (age 4). "I'm going on the skateboard, I'm going awa."

Child B. "go home in a wee while"

Child A. "a guy fell off of my skate board"

Child B. "he went round all of the houses"

Child A. "did he do that to get home"

Child B. "yes"

Child C. "they are going to the beach now"

Child D "flowers are growing on the beach"

Child C. "this is the dog that lives on the beach with the flowers"

Child D. "dogs don't live on the beach"

Child C. "it is going home now"



Fig.2 Elemental Objects

The elemental objects also became a currency between the children and power struggles emerged when the elemental objects were won or lost.

5 DISCUSSION AND CONCLUSION

This initial study based upon knowledge from existing literature and limited observations has determined that the hypotheses of using stories to allow children to become meaningful partners in the assessment of their own learning could be valid. The construction and small world toy LEGO, could give children a naturalistic environment to narrate stories which illustrate and illuminate their understanding of the world around them that could include learning and understanding from the

planned curriculum. The observations which have emerged were consistent over the observation period although the novelty of the presence of the observer is noted as being a possible bias in the behaviours and interactions observed. The lack of time for meaningful discussion between the children and their teachers was noticeable, and at times the interactions which did occur were short and shallow with little real assessment of learning having taken place, although there were clearly opportunities to do so [15]. These interactions were blighted by a lack of time and having a high child: staff ratio. The missed opportunities could have formed a link for the teacher to return to the construction to illicit more discussion with the child where, when removed from the absorption of the physical construction, the child could have reflected on what they had imagined within their story [18]

There are opportunities for the constructions to be photographed but the interactive nature is then lost when used as an opening for reflective assessment. When the children viewed themselves playing with the LEGO on the video recordings, they were distracted by their own image, what they were wearing and which of their friends they could see. The narcissistic development stage of the children prevented them from engaging in a reflection on their actions.

The construction element as part of a child's creative and cognitive development using LEGO is not part of this research. During the observations children made many constructions which involved high levels of concentration in the actual building of the bricks, this was often in silence during parallel play. The conversation and storytelling was elicited with the ready-made objects and pre-constructed elemental artefacts which gave grounds for situations, and scenarios. This was not something we had considered before the pre study but gives value for consideration of the constructed environment to enable storytelling and recollection of events.

As a result of the findings from the pre study we want to build an alternative way of capturing the story that keeps it alive, therefore we are planning to explore the automatic renderings of story skeletons in the form of comics which can be viewed and stored online. These comics can then be annotated by the children if they wish to do so, before being presented to the teacher as an assessable product of their learning. The concept of the saved artefact from the tangible world play would enable children to view their stories, build upon these and to have discussions with their teachers who could then assess the understanding of the planned curriculum whilst revealing unplanned curricular knowledge.

Children tell stories as a basis for learning about the world they inhabit. They make sense of events and learning through a social context. The construction toy LEGO is an enabler of storytelling for young children but the children's stories are being overlooked due to lack of time by the teachers who may gather artefacts which are static and only represent learning rather than understanding on a given day and time. As a result of this pre study we will consider the approach of converting tangible world play into online comics which can then be a meaningful collaborative approach to assessment of learning [2]. This next stage in the research process can be considered feasible within this setting and therefore applicable to other contexts.

REFERENCES

- [1] Scottish Government. (2008). Building the Curriculum 3: a framework for learning and teaching, Edinburgh: Scottish Government.
- [2] Scottish Executive. (2006). A Curriculum for Excellence. Edinburgh: Scottish Executive.
- [3] Education Scotland (2013) Assessing progress and achievement overarching paper. http://www.educationscotland.gov.uk/Images/overarchingpaper201213_tcm4-824409.pdf
- [4] Education Scotland (2012) Curriculum for Excellence: Assessing progress and achievement in the 3-15 broad general education. http://www.educationscotland.gov.uk/Images/CfEbriefing2_tcm4-730387.pdf
- [5] Education Scotland (2009) Curriculum for Excellence Supporting the Early Level Assessing Children's Learning: A CPD activity for practitioners. <http://www.educationscotland.gov.uk/files/earlylevel/assessment.pdf>
- [6] Priestley, M. and Humes, W. (2010) The Development of Scotland's Curriculum for Excellence: amnesia and déjà vu. Oxford Review of Education 36[3], pp. 345-361.
- [7] Clark, A. (2001). How to listen to very young children: The mosaic approach. Child Care in Practice 7(4), pp.333-341.

- [8] Clark, A. and Moss, P. (2001). *Listening to young children: the Mosaic approach*, London: National Children's Bureau for the Joseph Rowntree Foundation.
- [9] Basford, J. and Bath, C. (2014). Playing the assessment game: an English early childhood education perspective. *Early Years: An International Research Journal* 34 (2), pp 119 – 132.
- [10] Cremin, H. and Slatter, B. (2004). Is It Possible to Access the "Voice" of Pre-School Children? Results of a Research Project in a Pre-School Setting. *Educational studies* 30(4), pp. 457-470.
- [11] Clark, A. (2005). Listening to and involving young children: a review of research and practice. *Listening to and involving young children: a review of research and practice. Early Child Development and Care* 175(6), pp.489 – 505.
- [12] Pascal, C, and Bertram, T. (2009). Listening to young citizens: the struggle to make real a participatory paradigm in research with young children *European Early Childhood Education Research Journal* 17(2), pp. 249 – 262.
- [13] Birbeck, D. and Drummond, M. (2005). Interviewing, and listening to the voices of, very young children on body image and perceptions of self. *Early Development and Care* 175(6), pp.579 – 596.
- [14] Edwards, C., Gandini, L. and Foreman, G., eds. (1998). *The hundred languages of children: the Reggio Emilia approach to early childhood education*, (2nd edn), Norwood, NJ: Ablex Publishing Corporation.
- [15] Leggett, N, and Ford, M. (2013). A Fine Balance: Understanding the Roles and Children Play as Intentional Teachers within the Early Years Learning Framework. *Australasian Journal of Early Childhood* 3(4), pp. 42–50.
- [16] Lauwaert, M. (2008). Playing outside the box – on LEGO toys and the changing world of construction play, *History and Technology: An International Journal* 24(3), pp.221-237.
- [17] Hakkarainen, P., Brèdikytè, M., Jakkula,K and Munter, H. (2013) Adult play guidance and children's play development in a narrative play-world. *European Early Childhood Education Research Journal* 21(2), pp.213 -225.
- [18] Fekonja-Peklaj, U. (2010) Children's storytelling: the effect of preschool and family environment *European Early Childhood Education Research Journal* 18, pp.55-73.
- [19] Schank, R.C. (1990) *Tell me a story: a new look at real and artificial memory*. New York, USA: Scribner's, Macmillan Publishing Company.
- [20] Engel, S. (1991) *The World Is a White Blanket: Children Write about Nature*. *Children's Environments Quarterly* 8(2), pp. 42–45.
- [21] Nielsen, M. and Christie, T. (2008). Adult modelling facilitates young children's generation of novel pretend acts. *Infant and Child Development*, 17(2), pp. 151-162.
- [22] Kavanaugh, R. and Engel, S. (1998) *The Development of Pretence and Narrative in Early Childhood.* In *Multiple Perspectives on Play in Early Childhood Education*, pp.80 - 99.
- [23] Hatch, A. (ed.) (2007) *Early Childhood Qualitative Research*. London: Routledge.