Digital Culture & Education (DCE)

Collaborative onscreen and offscreen play:
examining meaning-making complexities

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Online Publication Date: 23rd December 2015

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COLLABORATIVE ONSCREEN AND OFFSCREEN PLAY: EXAMINING MEANING-MAKING COMPLEXITIES

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Abstract: *Playing with toys has been an established part of early childhood education for many years. Educators and theorists agree that opportunities to engage in make-believe play provide a wide range of avenues for enhancing literacy practices in the early years as children make meaning of their surrounding contexts. The increased availability and accessibility of mobile digital technologies has seen children more frequently engage in screen-based or "digital" play, sometimes leaving behind traditional forms of make-believe play with physical objects in physical spaces. However, when combined traditional make-believe and digital play complement each other in providing a rich texture for making meaning. An instance of onscreen and offscreen play is deconstructed to show the meaning-making complexities for child participants. This paper examines four propositions associated with meaning making - space, mediation, materiality and embodiment (Burnett, Merchant, Pahl & Rowsell, 2014) to discuss the complex and diverse relationships between the immaterial and material experience in a literacy episode which combines onscreen and offscreen play. Reported herein are the ways that imaginative play and literacy practices are enriched in the environments which blend physical toys and digital experiences.*

Keywords: Digital play, imaginative play, meaning making, literacy, Minecraft

The central role of play in the lives of young children has long been valued (Singer & Singer, 1990). Imaginative play enables children to advance their cognitive and socio-emotional development as they operate at their "highest level" of development (Vygotsky, 1978, p. 102). As children play, they take control of their actions which are meaningful in the context of their play, within the environment within which they are situated.

Spontaneous make-believe play, taken up by children who play together, enables them to use many cognitive processes. These processes include making plans and finding ways to carry these out to transform activities from their real objective and objects to imagined scenarios (Farver, 1992). The imaginary worlds that children create enable them to manipulate place, time, symbols and roles (Dunn, 2008) as they take the initiative and make choices about the activities in which they engage. This in turn, fosters meaning-making opportunities. Whenever play partners communicate, they do so from their own personal context but in collaboration they scaffold each other to move into new possibilities (Cazden, 2003).

A range of complex social and literacy skills are activated during play to support meaning-making processes. Literacy is concerned with social acts of meaning and the practices that occur within these (Barton & Hamilton, 1998). Davies (2009) identifies some of the necessary social and literacy skills as including, planning and preparation skills, teamwork, linguistic expertise to communicate purposes and processes. Marsh (2006) describes 'communicative practices' (p. 19) of children in reference to the range of multimodal meaning-making opportunities that children navigate as they operate in

different spaces, places and times. As children use language to share their meaning to cast and recast ideas, they create social realities (Daniels, 2014).

Genishi and Dyson (2009) assert that language is central to children's play. Through language children activate their metacommunicative talk (Verenikina, Harris & Lysaght, 2003) as they take on new roles, interact with others and articulate their understandings. Children develop their collaborative skills as they reciprocally negotiate roles in the play scenario. While there might be some modeling from adults or peers, children attempt to communicate and integrate their everyday conventional or reconstructed knowledge of the social world with that of their partners (Farver, 1992; Garvey, 1990). The ability to "stand outside their play and talk about it" (Verenikina, Harris & Lysaght, 2003, p. 3) provides important foundational development for self-reflection, self-awareness and communicative strategies. This then raises the question, what does play look like when digital mediums enter the scenario?

Digital technologies have become common and easily accessed materials in many children's homes. Technology use in the home context has been the focus of research (for example, Pahl, 2010; Marsh, 2006) with strong argument for the need to continue to examine children's literacy practices in these contexts. As Johnson and Christie (2009) argued, "The important issue is how to maximize the positive consequences of these new media so that they enrich rather than hinder children's play experiences." (p. 285). Indeed, digital play is, perhaps, "the first qualitatively different form of play that has been introduced in at least several hundred years" (Salonius-Pasternak & Gelfond, 2005, p. 6) which merits an examination of its role in enriching children's imaginative play.

This paper is interested in the playful transitions that emerge between offscreen and onscreen play contexts and the subsequent meaning-making complexities presented to children. We differentiate between physical and digital play contexts and the literacy event that emerges from such play, and our focus on offscreen and onscreen highlights the important interactions that exist when an app and physical toys are used simultaneously (Burnett et al., 2014). In taking this approach, we are able to explicate these transitions further as we also consider the more general issues of textuality, figured worlds, identity and power (Street, 2003) that also emerge.

Meaning-making occurs through the varied and multiple immaterial ways that materials are used. Fenwick and Edwards (2014) argue the assemblage of materials, ideas, practices and pedagogies that are always active and interrelated. It is in understanding how things "come together, and manage to *hold* together" (Fenwick & Edwards, 2011, p. 721) that we approach the analysis of onscreen and offscreen play.

A moment on Minecraft

Minecraft allows players to build constructions out of textured cubes in a 3D procedurally generated world. It was developed by Markus "Notch" Persson, a Swedish programmer, and published and distributed for PC use in 2009 by Mojang, a Swedish company. Since this time, versions of Minecraft have been released for PlayStation, Xbox and tablets. It is the iPad app version of Minecraft that is the focus of this paper.

While building is the central remit of the program, the capabilities to produce, explore, gather resources, network with others and engage in combat are also offered. In its creative mode, the user is able to take control of what they engage with within the

game. There are no specific goals for the player to achieve. The design interface is quite simple and the user is able to intuitively work out what it is they need to do. There are frequent opportunities for problem solving as the user makes decisions about how to best construct their world by manipulating the tools within the app. There are other modes where the player engages in protecting their world. Level of difficulty can also be set for the play. Further, there are opportunities to network with others to collaboratively engage with the app.

Minecraft is five years old, and has attracted significant attention. Representation of Minecraft in the research space is at this time still developing. There has been some research focused on application of the game to mathematical learning including manipulation of 3D computer graphics (Repenning, Webb, Brand, Gluck, Grover, Miller, Nickerson & Song, 2014) and application of mathematical concepts (Bos, Wilder, Cook & O'Donnell, 2014). Other research agendas have focused on more interpersonal development including identity development (Dezuanni, Beavis & O'Mara, 2014), social skills (Frank & Tarshis, 2013), creativity (Duncan, 2011) and the community created amongst players of Minecraft (Kopecky, Kusa, Hejsek, Polak & Maresova, 2014).

In our own research where we have interviewed parents of pre-schoolers (children aged 3-5 years) about digital play with tablet technologies (Verenikina, Kervin & Murphy, 2013), we have several examples where conversation has turned to Minecraft. Minecraft was identified as a favourite app amongst many children. Interestingly, for most of these families, the push to have access to and engage with Minecraft came from the children. One parent described, "they said they wanted to play it", another acknowledged, "everyone seemed to be playing" and the connection to peers was described as a mother explained, "socially we mix with friends and Minecraft is very popular". While the parents identified that it was older children (6 -8 year olds) in their homes that mostly engaged with Minecraft, they did identify that their pre-schoolers were certainly aware of the game, if not already interacting with it. One father identified that his 5 year old son "like[d] to create imaginary worlds" in Minecraft and a mother shared that her three children often worked on the one device where "one of them will be doing it but then they're all inputting into what they are doing".

While this is interesting contextual information about the lives of these families with young children, the need to examine the meaning-making complexities for children as they engage in digital play came to the forefront. Acknowledging the home as an important setting for digital play, we encouraged families who consented to participate in the research to make and record observations of their children when they noticed interactions with their children and digital technologies. Parents were encouraged to record their observations through video recordings and/or written reflections. These observations gave us important insights to our research objective focused on exploring families' perspectives on the role and place of digital technologies in the lives of their children in relation to children's play. This paper presents a vignette of a literacy event captured by a parent and reported to the researchers. While it is understood that a single vignette has limitations, it is used in this paper to provide "…a single point of reference for a complex set of ideas" (Burnett et al., 2014, p. 92). In this paper discussion of the vignette enables us to ask the questions: what happens when constructive play meets make-believe play in a blend of onscreen and offscreen forums in a home context? What literacy opportunities do these collaborative play experiences offer for children?

Using Burnett et al.'s (2014) four propositions that highlight the complex and diverse relationships between the immaterial and material, this paper provides an example of a literacy event which we have analysed to further explore how relationships between space, mediation, materiality (object) and embodiment to literacy practices are activated.

We acknowledge the enmeshment between the material and immaterial and the interconnections that exist between and among the propositions.

A vignette: The LEGO / Minecraft playdate

The following vignette originated from an observation made by Deanna, Natalie's mother, which was further explicated through interviews with Deanna and the researchers. The children had been involved in an earlier stage of the larger research project and the researchers had observed these children in instances of digital play. The researchers also had opportunity to talk with the children about this literacy event, which helped in the development of this vignette.

> Natalie, a seven year old girl invited her friend Zack (also seven years old) to her house for a LEGO playdate to create a city. There was a lot of new residential building in the area where the families lived, and both children had shown considerable interest in the process of construction. There had been some public unrest about this new residential area and at school the children had been involved with learning experiences where they focused on concerns about the increased population in the area and the demands this might have on infrastructure such as road congestion, access to basic services and school enrolments. The children were set up with the LEGO in a room in the house where they could spread out and create their city, undisturbed from siblings. Deanna envisaged that the LEGO play would take space and a cleared floor area was important in her preparation for the playdate.

> When later Deanna went to check on Natalie and Zack, she found Zack playing with the LEGO and Natalie playing with the Minecraft app on the iPad. Expressing her disappointment that they didn't seem to be playing together, Zack clarified the situation to Deanna by explaining that they were building their city with LEGO and in Minecraft at the same time. He explained, while he was building with LEGO, Natalie was creating that structure using Minecraft and later they would compare and contrast the two representations to look for similarities and differences. As they did this they were looking for the 'best way' to create the structure to support its environment and the needs of the people that lived there. And then they would switch. This building role-play enabled them to explore a similar task from two different contexts.

> Deanna stood back and watched the play for some time. She saw periods of silence as Natalie and Zack were engaged in their "building". She heard them ask questions of each other (such as, 'why did you …?' and 'how will this work..?') and listened as technique, purpose and intricacies were described. She noticed that the process of construction on the iPad was faster and saw the iPad user help the LEGO builder catch up to where the game was at. As Natalie and Zack took moments to compare and contrast their structures she heard some disagreement as they debated specific features but also saw them move between the real and the virtual as they demonstrated skills and intricacies of the constructions to each other. A discussion followed as the children negotiated their next construction 'challenge' as the play continued. Deanna was amazed how much the children were drawn into their play.

Focus on Space: The relationships between the material and immaterial

Interactions with and use of space is central to play. Designated areas, with resources and time for children to interact with this, has been a long standing feature of many learning environments for children. However, while creating opportunities for play through space, it is acknowledged that space and resources alone may not stimulate all children to engage in play (Dunn, 2008).

The social and material constitution of spaces helps us to understand the practices, institutional forces, and material complexity of how humans interact with the spaces they are located within. If we understand that spaces are undergoing constant construction (Leander & Sheehy, 2004) we then acknowledge that the boundaries and qualities of space are shaped by what people do and have done, as well as how they and others see their significance and future possibilities (Burnett et al., 2014).

If we transfer these understandings of space into onscreen and offscreen contexts as described in the vignette, it is important to consider the hybridity that emerges as interactions between spaces become fluid. Natalie and Zack moved between their offscreen LEGO play and their onscreen Minecraft play. Literacy practices span real and virtual networks, therefore we need to consider how space is conceived and used in both the onscreen and offscreen context, and the similarities and differences that emerge. These children created a make-believe scenario where they negotiated a structure and took turns at creating it using both onscreen and offscreen materials.

It becomes important to consider the qualities and boundaries of onscreen and offscreen spaces and how each is operationalized. The vignette presented shows that the value in the experience for these two children was not just in what was created in the onscreen or offscreen context, but rather how the children negotiated their activities in their 'shared imaginary space' as they moved between the worlds through their interactions with each other. Both children were working with materials they were familiar with (LEGO blocks and the Minecraft app), however the shared imaginary space allowed for a discussion through their comparison of their creations in the onscreen and offscreen spaces that provided opportunity for the children to shift their focus and status as they moved from being an expert, to critic, to instructor, and to mentor. The children demonstrated relationships with their onscreen and offscreen creations but also with each other as they moved between the creation and the critique.

The LEGO constructions and the visual representations of these created in Minecraft can be considered multimodal texts (Siegel, 2006). The compositional elements (Kress, 2010) manipulated by the children resulted in physical and digital textual assemblies to meet the social and affective needs of their imaginative play. As the children created the physical and digital texts in the onscreen and offscreen environments they negotiated the materials as they engaged with the necessary physical actions. Each child demonstrated they were able to sort, push, drag and click to create their structures. These children were able to examine the physical and virtual structures (their created texts) as they demonstrated their meaning-making through their verbal interactions.

This example of imaginative play reframes the possibilities for play as the children combined and moved between onscreen and offscreen contexts. Their interactions between these contexts create textual assemblies that are both a physical artifact and a digital representation and in turn blurs the boundaries between onscreen and offscreen reality (Kress, 2010). The different semiotic representations that they created from a shared experience seemed to motivate continued play. Further, the ability to retain these representations and extend upon these through further play may be considered a

developmental benefit as the ideas of the 'game' are transferred between the onscreen and offscreen play contexts.

Focus on mediation: The shifting relationships between material and immaterial

The relationship between the virtual and the material is one that needs to be further investigated. To understand this relationship we need to carefully examine the visual and how these represent the semiotic representations between onscreen and offscreen practices.

The relationship is no doubt complex and quite sophisticated. Bolter and Grusin (2000) claim that technological sophistication leads us towards the "logic of transparent immediacy" (p. 21). In this vignette we look at the complex visuals that are created through the offscreen LEGO building and the onscreen Minecraft creation, developed together and with mutual representational qualities. Each draws upon a range of different semiotic resources (Kress, 2010) as the children look across these texts to replicate in the first instance and then to compare and contrast the constructions. The use of this experience to then set goals for the next 'level' of play provides further example of the complexity.

The movement of the children between onscreen and offscreen play, and the representations of this, brings to our attention a range of rules, routines, expectations and semiotic resources (Kress 2003, 2010). However, we need to also consider what these might look like as the play unfolds. What is it that changes and what stays the same? For example, the turn-taking structure the children devised to determine who is onscreen and offscreen requires navigation of technology (Minecraft) and equipment (LEGO) and the associated rules of play with each and for the comparative exercises. These children do '… appear to *believe* in both worlds' (Burnett et al., 2014, p. 96). This does beg the question: how do the two spaces interrelate and overlap?

While the children appeared to move seamlessly between the material and the immaterial, it is important to consider possible interruptions and the impact of these. For example, the disappointment that Deanna referred to when she checked on the children that they didn't seem to be playing together would have interrupted the children's play. It is interesting that it was the visiting child (Zack) that clarified the situation to Deanna and explained the rules of their play. This suggests that Zack was quite familiar and comfortable within the home context and with Deanna. However, the interruption still serves as an interruption to the logic of transparency within the onscreen and offscreen play.

The onscreen and offscreen interactions in this vignette seem to motivate learning. This motivation is partly triggered by the opportunity to collaborate and interact with a peer as tools of interest are manipulated.

Focus on Object: Literacies are materialised

There is a reflexive relationship between the material and immaterial as the children construct meaning in this vignette. The perspective of what has been created with LEGO is represented in the Minecraft creation. The discussion that occurs between the children encapsulates experiences throughout the process and the critique reveals their feelings and perspectives of the created artifacts.

Holland and colleagues (2001) described the notion of 'figured worlds' as imagined spaces of practice (pp. 52-53) (not dissimilar to our previous discussion on 'joint imaginary space'). These worlds are those spaces where events and practices take place.

The physical making of texts (the LEGO or Minecraft creations) in this home context can be considered meaning-making activities. The Minecraft creations are in fact a representation of the LEGO creation (and vice versa), but also a representation that is captured from the perspective and ability of the creators as they operate within the home context. The opportunity for these children to re-create the space (home context) and transform the materials within (LEGO and Minecraft) enabled them to create text (the physical and digital constructions) to create a different figured world (Pahl, 2008).

In this sense, texts are traces of social practice. They are objects that carry identities, of their creators and revisers and of those who interact (Pahl & Rowsell, 2006). The use of material artefacts and manipulation of these within digital and physical spaces enables substantive and creative play, enhanced literacy learning and substantive meaning-making opportunities. Through the digital arena the children were able to look at regular play objects (the LEGO) in new ways.

The children's personal abilities and perspectives materialized in the physical and virtual constructions they made. These constructions became texts as they materialized from the play experience. The experience itself was authentic as the children determined to goal, assumed roles and set the parameters around what was to be done, therefore making it a practice-based and action-oriented example of situatedness (Fenwick, 2014). As a literacy event, it was the result of the conditions in which the experience materialized.

Focus on Embodiment: Meaning-making is personified

The experience of these children in this play encounter provides insight into how the onscreen and offscreen experiences shaped how they made meaning throughout the experience. The children were connected to the home context within which they played, their play experience was connected to their interaction with the onscreen and offscreen spaces and their actions were physically and spatially situated (Ciolfi, 2013). The home context was augmented by the play that linked physical and digital spaces in a joint imaginary space; the 'figured world' of their play.

The play experience these children created provides example of the potential relationship between onscreen and offscreen interactions. There was clear relationship between created texts and their felt experience. At all times, the children chose to participate; they took turns at working onscreen and offscreen, they both assisted with the LEGO and Minecraft constructions, and in leading the discussion critiquing the two versions of the one construction. Their engagement with the experience as a whole enabled meaning to be made.

Their created texts demonstrated the children's meaning-making throughout the play process (Kress, 2010). The imaginative play determined the process for text construction and the creations each represented the understandings the children made of the experience. The 'semiotic work' (Kress, 2010) completed by the children was indeed representative of the visible and internal meaning-making processes activated by the play and represented by the children in the physical and virtual texts. The meanings were translated across the virtual and physical modes.

While it is said that digital play can be constrained through the technology itself, or a child's own technological skills (Burnett et al., 2014), in this example, the children were able to work together to support each other to see the possibilities available within a fairly ill-defined digital space. Through this process, they were able to support each other with the necessary skills as they moved from the concrete to the virtual with social interaction and collaborative support. The relationship that existed between the two children did much to promote agency. Through play, they were able to discover the

possibilities for different semiotic resources – represent, question, discuss, critique, challenge, and so on – and through this process they were positioned as active participants within the context. These resources enabled their different perspectives to be interwoven as onscreen and offscreen interactions were mediated as they explored their physical and virtual creations.

Concluding comments

Examination of the vignette with Burnett et al.'s (2014) four propositions highlights the complex and diverse relationships between onscreen and offscreen experiences in children's play. In doing so, much is revealed about the careful interplay between the physical, temporal and spatial elements in this instance of onscreen and offscreen play. These children demonstrated they were able to use the tools and technologies in their context for meaning-making purposes.

Engaging in play is a meaning-making experience. Minecraft is often perceived to be a more solitary space for creative play as the user builds a world within the digital environment and continues to operate in an onscreen capacity. However, analysis of this vignette shows how these children embedded elements of simultaneous play in onscreen and offscreen contexts (as they created the same world side by side using concrete and virtual materials) and were able to move into co-creation of a play episode as they took control over the materials, time and space to engage with high levels of shared understanding. In this example, the children demonstrated high levels of cooperation and collaboration (Daniels, 2014) as they fluidly moved between the onscreen and offscreen contexts in their play. Both the physical and digital resources played central roles in the play episode created, facilitated and pursued by the children.

This example shows how play can look when digital mediums are included. We acknowledge that this is one case, however, we believe it offers insights that are the beginning of what could be an important contribution to the field with observations of more participants to generate data that could be quantified. However, this case does point to both the onscreen and offscreen experiences as being valuable and the devised literacy event of critiquing the constructions made provided for powerful language use. The children were able to interact with the meaningful texts they had each created and demonstrated their understanding of language features associated with the play they had created. Through their interactions, the children were able to draw upon their own experiences with the Minecraft App and LEGO blocks to introduce and consolidate the language of the onscreen/offscreen game they had created. As such, these peers become a resource for new learning for each other as their interactions enriched the play experience for each other. The children demonstrated their understanding of the literacy event by being provided with the space, materials and time to explore the intricacies of their game.

Davies (2009) identified "many new technologies provide routes to playful activities" (p. 31). This example has shown how two seven year old children were able to integrate their traditional and digital play resources to create their own joint aims and goals for their play. These children were able to assume playful roles and their actions were recognized and respected by their playmate. The texts they created, using both LEGO and Minecraft, and the conversation that surrounded the development and critique of these were creative and rich as they activated their explorative and improvised literacy practices (Lambirth, 2005). There is reciprocity in sharing peer relations, manipulating artifacts and being an object other to oneself and increasingly acknowledging other perspectives. Both the physical and digital play objects provided valuable opportunities for meaning-making for each participant.

Playfulness can lead to productive outcomes in terms of learning and development. These children chose to participate in the event and customized their rules of play, which led to opportunities for learning (Gee, 2003). Participation in onscreen and offscreen spaces provide opportunity for children to communicate their ideas and understandings in new, interesting and different ways (Vasquez & Felderman, 2013). The vignette emerges from a play scenario that was spontaneous with rules that came from the players themselves. The children were 'playful social learners' (Kerin, 2009 p. 133) who engaged with technologies in social and pleasurable ways, which in turn demonstrated their confidence and mastery of the onscreen and offscreen play experience.

Examination of this vignette requires us to reconsider an either/or attitude to physical toys and digital opportunities. It is time to reconsider, remap and reinvent opportunities for play as we consider the relationships that exist between the material and immaterial and the ways children choose to interact with onscreen and offscreen encounters. Both onscreen and offscreen play opportunities have much to offer to children as they collaboratively engage with imagined play scenarios.

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Acknowledgement

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Maria Clara Rivera, a qualified teacher, is Project Officer for the ARC funded project on Digital Play (of which Verenikina and Kervin are Chief Investigators). Clara holds a Masters of Multimedia Design (with Honours) from the Sydney College of Arts, University of Sydney. With previous experience working with children in disadvantaged communities in Ireland, Clara has engaged young people in developing creative thinking skills through digital media.