

Chapter 6

Penmanship and Hyper-intertextuality Shaping Playful Literacy

At the end of the second chapter, I highlighted some of the questions that had emerged during this research: the role of the experience and the physical interaction informing young children's digital literacies; the breadth of characteristics defining what it is to be digitally literate as a young child; and which current aspects of digital literacies definitions are witnessed during young children's playful interactions with tablets.

The questions served as guiding lights towards expanding, analysing and discussing my data in Chapters 4 and 5. The questions also led me to identify how my results could supplement existing theories introduced in Chapter 3. In order to answer these questions, besides the proposed taxonomy, my contribution lies in proposing a couple of concepts, digital penmanship and multimodal hyper-intertextuality, that shape a final overarching theme, which is in the title of this book, playful literacy. This brief chapter is an extension of my analysis and discussion. Here, I discuss the concept of digital penmanship introduced earlier and explain how it relates to existing theories. I also propose and discuss the concepts of multimodal hyper-intertextuality and playful literacy.

6.1. Digital Penmanship

I have previously defined digital penmanship as the tactile skill and knowledge (being acquired through the digits) that emerges and develops through interactions with touch-sensitive digital devices.

Children's interactions with digital devices happen through physical actions. Hands are the tools of exploration. Through a range of movements and distinct feels, hands inform intentions and learn about responses. This hand-eye-device process teaches the child about digital subtleties apprehended by the fingers. This process is individually coded into hands' knowledge and develops in a continuum of use.

The concept of digital penmanship builds on existing perceptions of how technology is intertwined with tactile experiences (Dourish, 2006; McCarthy & Wright, 2004; Papert & Harel, 1991; Pink et al., 2015). Digital devices as the artefacts afford the creation of an embodied user knowledge while being

manipulated¹. This knowledge and its experience are the products of manipulating the artefact.

Digital penmanship addresses the questions related to the role of the experience and the physical interaction informing young children's digital literacies. It highlights the role of the body as the main tool for communicating and composing the digital play experience. This penmanship is acquired and developed through physical interaction, becoming an embodied knowledge obtained through the actual interaction experience with the artefact (Dourish, 2016; Pink et al., 2016). By playing with tablets, children engage in this artefact manipulation, apprehending and challenging its affordances 'at their fingertips'.

Insofar as recent related studies have not necessarily focused their attention on the major role of the hands in children's digital play, my suggested concept fills this gap by addressing this embodied learning as a vital part of young children's digital literacy practices. The hands perform and inform some of the learning occurring through tablet (and other touch-sensitive) devices.

6.2. Multimodal Hyper-intertextuality

Tablets, i.e., versatile toys with diverse modes of play and topics of interest, fit in with children's curiosity and pace. As different apps are available on one device, and more apps can be downloaded through the devices' 'digital stores', tablets can be described as unique multipurpose and heterogeneous toys that blend physical and digital play experiences. These playful exchanges between the digital and physical, online and offline realms aid the development of a narrativised semiotic system (Marsh, 2014), and expand the concept of intertextuality (Fiske, 1987; Marsh, 2014; Marshall, 2002; Ong, 1998). Intertextuality was defined by Fiske (1987) as:

Any one text is necessarily read in relationship to others and that a range of textual knowledges is brought to bear upon it. These relationships do not take the form of specific allusions from one text to another and there is no need for readers to be familiar with specific or the same texts to read intertextually. Intertextuality exists rather in the space between texts. (1987, p. 108)

This definition of intertextuality can be stretched to delineate the ways in which a variety of current media interrelate, shaping the later concept of transmedia intertextuality (Kinder, 1993; Marsh, 2014; Marshall, 2002), when characters or stories converge throughout various media, creating a transmedia intertextual narrative. In the case of digital devices, such as tablets, these

¹The term 'manipulate' should be understood here as controlling something with the hands.

narratives are multimodal (Sefton-Green et al., 2016) and are composed of various actors, shaping the 'sociology of association' (Latour, 2005, p. 9). The narrative from one medium intertwines with the use of the next medium, such as read the story, play the game, watch the movie, etc. In tablets, this type of play narrative can occur from within one app, where a child can listen to the story while playing a game with one of the characters, followed by a small video, which can then lead to another activity that relates to the previous one through iconography, genre and/or sound.

The notion of intertextuality is closely connected to hypertext, hypermedia and hyper-intertextuality theories. Hypertext (Nelson, 1965) has been described as a reference to distinct pieces of textual information connected by links and not a linear path as in traditional books, that is, texts branching out to other texts or sources, creating a non-linear narrative. Hypermedia (Nelson, 1965) was defined as complexes of branching and responding graphics, movies and sound as well as text. More recently, hyper-intertextuality (Fox, 2001; Régard, 2015) has been suggested as the multimedia version of hypertext, very much in line with the concept of transmedia intertextuality.

Uniting the multimodal and the hyper-intertextual (or transmedia-intertextual) aspects witnessed in current digital devices, I would argue that young children's play practices with tablet devices, besides multimodal, are also hyper-intertextual.

Thus, I propose that the concept of multimodal hyper-intertextuality refers to the wide array of media and modes of use composing the play experience with digital devices, such as tablets.

The modes include both physical and digital characteristics that build the play experience, from the role of the body (walking, sitting down, moving the device or keeping it still, using a hand or a pen) to the variety of media including video, sound, text, images of various sorts and modes (available/locked/etc.).

The multimodal material is hyper-intertextual since it not only informs activities within the apps, such as playing a game in order to get points to buy certain foods or carry out certain activities with the character, as in the case of the *Talking Tom* app. These characters branch into other media beyond their own apps, with YouTube videos, songs, plus being licensed for clothing and physical products.

Tablet play converges images, sounds, narratives of various sorts and sources into a *multimodal hyper-intertextual* experience that shapes and is shaped by children's rich interactions and perceptions of their everyday life. This trend not only defines children's experiences with digital devices; it also prompts other types of interactions to follow suit, i.e., future apps and experiences catering for children in schools or museums can benefit from offering multimodal options, with various types of input and inter-complimentary activities. These modes of interaction can feed into other experiences outside or inside these institutions, creating hyper-intertextual narratives through a range of media that feed from and into one another.

6.3. Playful Literacy

I propose the concept of playful literacy as a sociocultural practice that involves multimodal interaction and communication through the (playful) use of digital technologies.

In short, the concepts of digital penmanship and multimodal hyper-intertextuality compose the overarching concept of playful literacy. A congregation of actors, the interdependent and intertwined communication and the relationship with digital devices compose the body of playful literacy practices currently witnessed.

My definition builds on the definition of digital literacy proposed by Sefton-Green et al. (2016) and Gee's (2003) definition of video game literacy. Sefton-Green et al. (2016) focus on young children in their research and suggest digital literacy as 'a social practice that involves reading, writing and multimodal meaning-making through the use of a range of digital technologies' (2016, p. 15). Gee's research focusing on video game studies suggests that game literacy involves decoding, understanding and producing meanings with respect to a semiotic domain. Throughout my observations and analysis of young children's play practices, I acknowledged that these definitions complemented each other. These play practices acquaint children with the semiotic domain composing one of the layers of the multimodal meaning-making with digital technologies. This perspective aligns with Jewitt and Mackley as they suggest that 'the changing relationships between the semiotic, technologies and the sensory make new demands on a social semiotic framing of communication'(Jewitt & Mackley, 2018, p. 12).

The decoding, suggested by Gee or the reading, suggested by Sefton-Green et al., happen through interaction with the device. In my research case, the decoding deals with both the physical interaction as one of the modes shaping the digital penmanship. The other mode refers to the decoding of the semiotic domain, taking place through the multimodal hyper-intertextual experiences with the device's physical and digital interface. In *multiliteracies* (Cope & Kalantzis, 2000) and related studies, learning emerges as a product of interaction with things, spaces and people or a 'sociocultural phenomenon' (Gee, 2015, p. 35). I suggest that in the case of young children's tablet play, the sociocultural aspect of the learning supplements the digital literacy definition (Sefton-Green et al., 2016). In the case of my research, their definition requires slight adjustment to accommodate *sociocultural practices* instead of *social practices*. Although the cultural aspects are extensively considered in the Sefton-Green et al.'s (2016) full analysis of digital literacies in young children², this aspect is not obvious in their proposed definition.

²The authors even illustrate the whole cultural consideration in their article with a model showing how all these aspects converge and inform each other (Sefton-Green et al., 2016, p. 18).

In both Denmark and Japan, the aspects of reading and writing as suggested by Sefton-Green et al.'s (2016) definition are interpreted as decoding and producing. *Reading* relates to children decoding and interacting with digital images and spaces or 'reading audio-visual material' (Sonia Livingstone, 2004, p. 1); and the *writing* relates to children producing something, such as creating patterns, drawing, shaping the digital interactions. None of the terms feed directly into the idea of learning or using the *abc* per se, although a small number of children did engage with the keyboard while playing.

Consequently, writing or producing, as suggested by these scholars, can be understood as communicating. When young children interact with tablets, there are layers of interactions, and they communicate these interactions in various ways. Hands communicate intentions to the device, while they also communicate individual intentions to peers. Eyes, posture, movements, and sounds join hands in the communication spectrum contributing to its multimodal aspect. Children's intentions are born with these interactions, responding to the digital narratives present in the device. Therefore, before communicating their intention either through their hands or orally, children first problem-solve and decide how and what the interaction should be by 'reading' or 'decoding' symbols and genres encountered in the device. Therefore, the interaction allows for three-way communication, from the child to the device, the device to the child, and child to other children, all through hand movements, sound, and oral and visual inputs.

In other words, digital literacy in young children includes having knowledge in the hands, knowledge of the semiotic domain encountered in digital devices, knowledge of the various modes of interaction (hand-intention typology) and how they are applicable. As this relationship emerges through play, I am suggesting it should be acknowledged as playful. Playful (digital) literacy is acquired through having fun.

In the following section, I give further insights into how these categories and proposed concepts can address current characteristics and limitations encountered in tablet design and children's tablet play. Moreover, I suggest other sets of questions that derive from my results and inform other perspectives related to children's current play practices with digital tablets.

6.4. Further Perspectives

I believe there is no production without consumption. Information flows both ways. Children at this age do produce content and they are producing internal knowledge as they play. They also produce media and data, as digital players. They are aware for camera possibilities, downloads, characters and symbols. They are consuming this, but they are also able to apply this knowhow into their play and, I believe, into their lives as they grow with it. However personality and education go a long way, and we cannot detach the children from the environment and the 'social actors' that construct their everyday.

In recent years, we have seen a number of media articles focusing on negative or sensationalistic aspects of media play, where children tend to be described as

victims of technology, suffering from a number of symptoms related to media use. These articles present sometime a scary picture of children's digital play habits. Luckily, a lot of research has also been done and present more nuanced and accurate perspectives of the same play habits ((Buckingham & Strandgaard Jensen, 2012; Chaudron, 2015; Marsh et al., 2015). Consequently, I argue for better informed media articles in the area of digital play and less dramatic headlines when describing children's play behaviour.

Another aspect, deals with how digital-material affordances of tablets touch on other discussions related to children's literacies, such as the child as a consumer (Buckingham & Tingstad, 2010). Consumption practices are present in these digital play interactions in a number of forms. For example, how the devices are defined by a specific brand, and how characters, other toys and a universe of icons and merchandise (including digital merchandise) are exposed through digital interfaces. Some of these characters and even the devices are appropriated in children's play through personal and social narratives. Children describe their play using the names of the characters and sometimes even the brand of the devices. Some children also mentioned the 'shop', referring to the app store, and many knew the characters and some of the companies producing the apps, such as *LEGO* or *TocaBoca*. Many also knew that in order to choose a certain thing within an app, they had to buy it or have enough points to exchange it. YouTube was also mentioned as one of the activities they engaged with – leading me to believe they are exposed to in-video advertising when watching videos through the platform. Besides, when talking with parents, they mentioned preferring low financial investment regarding apps for children and therefore free apps were more attractive as a product, as also recently indicated in related research (Marsh et al., 2015). This choice of free apps leads to yet more questions regarding the level of the parents' media literacy with regard to the business and economic models underlying 'free' apps. As I did not explore this aspect further during my talks and interviews with parents, I cannot make any assumptions or suggestions. However, I believe that future qualitative research should look closely into both children's and parents' media literacy in order to assess notions of data collection and privacy concerns related to media use, in order to map how parents tackle navigating in the digital app landscape.

Further elaborating on the use and knowledge of digital tablets as consumption-ready devices, there are gaps in understanding the models that regulate the device. These gaps include both the design processes and goals behind app development, combined with a deeper lack of understanding or acknowledgement of the business and financial models that rule this digital platform. Children are not necessarily invited to regulate or decide on such models. For example, when using a free app, children should know about the ways developers use children's information, play modes and choices. Educational institutions are equipping themselves with digital tools, however, little attention is given to questioning further aspects of technology appropriation.

From a speculative angle, as children grow, digital penmanship can evolve to a type of media penmanship. Although I have yet to finalise this concept, media penmanship refers to the applied knowledge of media that is required in order to

produce and communicate content. When *writing* with/through/for media, media knowledge aligned with the 'knowledge in the hands' can deeply affect how and what content is produced and communicated (Ingold, 2009, 2013; Merleau-Ponty, 2002; Pink et al., 2015). While classic penmanship does not affect the content of the material produced (it does aesthetically, but not necessarily the actual content or the core message of the actual text), digital and media penmanship affects how the content being produced is communicated as well as how it is acquired. It is worth noting that media penmanship is not the same as media literacy, as the penmanship refers to the acquired embodied skill of the hand to 'dialogue' with the digital device, having the required amount of hand vocabulary combined with design affordances and capabilities of the device. Media penmanship could be part of the set of skills defining media literacy, as the penmanship can be understood as a skilled capacity to use media devices. However, the media penmanship concept is a much narrower concept than media literacy, since it does not address the critical understanding of media's cultural impacts and aspects.

Further discussion of the concepts of digital and media penmanship provides yet another angle on media consumption. The multimodal aspect of tablet devices informs how apps are designed to be interdependent with the platform on which they run. One example of how a multimodal hyper-intertextual experience bridges online and offline domains involves being exposed to a specific icon at a static location, such as at home, or while on the go, picking up the portable device in order to search for related information on the app store or browser. As you click on one of the images, you are redirected to another application that will allow you to access the information, for example tapping on a video icon that will open YouTube and possibly redirect you to the 'store' app, where you can then download the app in order to see and explore the searched content in more detail.

If the information relates to a cartoon character, you might be led to a book, movie or game app and so forth. If the content searched relates to music, you could watch a video, listen to a song, and if you like it, you could add it to a playlist. Children, many in the countries where I carried out my observations, are growing up with these everyday practices. These hyper-intertextual practices where materials and objects criss-cross represent a source of continuous consumption, not necessarily of direct products, but consistently of information. This aspect opens up for further studies related to empowering youth with regard to their media use.

A number of questions arise if we expand the concepts of digital and media penmanship towards the adoption of digital devices and the content assessment in standardised testing environments currently practised at schools. By evaluating only the results, the process of producing the content is lost, even though this process represents the thinking behind the result. A parallel examination example would be to provide only math results without providing any of the calculations. These production skills should be addressed together with critical thinking and media assessment, as suggested by a number of scholars (Buckingham, 2006, 2007; Livingstone, 2003, 2004, 2008a; Ito et al., 2013).

A media-literate young person would have the penmanship skills previously described plus the knowledge of the various models behind the apps and the device required to take informed decisions regarding their digital production and usage.

A final remark regarding the media and digital literacy aspects correlates with privacy concerns. Although the privacy aspect has not been among the first set of research questions raised in this study, it emerged as a valuable consideration in the research process. How can children be equipped to grasp their 'digital life'? How can companies that design for children secure children's privacy? Despite the parents' mediation, tablets are still 'digital informants'. While children might just be developing a range of skills while playing with these devices, tablet applications collect various sorts of data from their tablet use. How does attachment affect consumption and identity building in digital realms? Learning behaviours and interests, as well as patterns from children, provide a valuable source of information, which might affect future purchases and interactions with similar devices. Thus, I propose that the privacy concept belongs to the attachment category. Nonetheless, the concept of children's privacy should also feature in future discussions related to digital literacy practices.

Therefore, aligning the perspectives and considerations described here with the theoretical concepts proposed earlier prompts another set of questions to be addressed in future research, such as:

- How do we apply the knowledge about playful literacy to developing valuable applications, digital platforms and spaces in the future?
- What does it mean to start a school equipped with playful literacy (or the skills acquired through digital play)?
- How can we challenge future interfaces based on young children's current digital experiences?

By acknowledging children's playful literacy skills, educators, designers and developers can push the boundaries of creative materials and interactions targeting digital devices. Educators and designers could work closely together to develop a range of activities, including digital and physical activities that build on the playful literacy skills of young pupils. Scholars researching childhood can further investigate whether the hand communication extrapolates the digital platforms into other types of communication, such as when children talk to each other or play with other toys. Researchers from the field of HCI can look into how digital penmanship can be further developed through kinaesthetic communication (haptics). Artificial intelligence researchers can investigate how devices can learn to 'read' the existing hand communication, allowing for further developments in aiding people with limited tactile or motor abilities.

6.5. Chapter Overview

In this chapter, I have put forward the concepts for the core of my theoretical contribution, and extended my findings into perspectives beyond my initial focus. By expanding the topics presented in this book, I have illustrated and raised questions for future related applications and research. These open and final perspectives set the tone for my conclusion that immediately follows. In my conclusion, I acknowledge some of my research limitations and offer overarching perspectives on the impact of play in contemporary societies.