

---

# Children's Play in the Digital Age

## An Interview with Jackie Marsh

Jackie Marsh is an Emeritus Professor at the University of Sheffield in England, where for more than two decades, she has undertaken research on young children's digital literacy and play in homes and in formal and informal learning settings. She helped examine the role of families in their children's digital literacy, play development, and play lives. Most recently, Marsh has focused on how play in maker spaces in homes and schools promotes digital literacy and STEM learning, and she continues to engage with the Maker {Futures} program at the University of Sheffield. **Key words:** digital literacy; digital play; internet of toys; Iona and Peter Opie; tablets; technology; toys; video games; YouTube

*American Journal of Play:* Much of your research has centered on studying children's digital literacy and play. What are some of the methodological challenges to this kind of work? How have you addressed these challenges?

**Jackie Marsh:** There are numerous methodological challenges researchers face when undertaking studies on children's digital literacy and play. First, defining what is meant by digital literacy is important, because that frames the unit of analysis and the methodological choices made in any study. For many researchers working in this area, the New Literacy Studies's emphasis on the plurality of literacy—focusing on literacies—is key, as there are many kinds of literacy practices involved in digital activities. Therefore, having a broad emphasis on digital literacies as meaning-making practices that involve digital technology use in some way is important. Similarly, understanding play as a complex activity that has many facets means that researchers need to be open to having their assumptions about digital play challenged and their understanding thus extended.

Second, if the digital literacy and play practices of children are to be studied in the home, this presents logistical challenges. We have undertaken numerous studies that have involved home visits, and these have required a careful building of relationships with children and their families and a willingness to be flexible and adapt to the families' needs. To collect data about children's digital play and communication in the home outside of the researchers' visits, we have sometimes recruited parents as coresearchers who have captured their children's practices using diaries, cameras, and mobile phones (for example, the use of the WhatsApp app to record observations and interact with the research team).

Third, a key methodological challenge when working with young children is to ensure that children's voices and perspectives are clearly heard and respected. We have used a wide range of methods to ensure that children can be active participants in the research process, including the use of point-of-view cameras (such as GoPro cameras), diaries, collages, puppets, and so on.

**AJP:** How did you play as a child and how has that influenced your approach to studying children's play?

**Marsh:** I was a young child in the 1960s, and so, obviously, technology did not feature largely in my play. A lot of my play took place outdoors. In the street, hopscotch was a favorite game, and I also spent hours making mud pies in my grandmother's yard. However, I was fascinated by television. My family first had a small black-and-white set that we rented when I was aged about four and I enjoyed watching the first BBC children's programs such as *Watch with Mother* and the puppet characters Bill and Ben in *The Flower Pot Men*. My imaginative play included characters from these programs. I think these early experiences enabled me to understand the power of media and technology to ignite the imagination and to foster play.

**AJP:** Tell us a little more about your educational background and what led you to study young children's digital literacy practices and play.

**Marsh:** I grew up in a working-class family and was the first in my family to attend university. Throughout my education, I was aware of the gap between my home experiences and the world of school. For example, my childhood was not represented in the pages of the picture books I encountered at school. I then became a primary teacher in the 1980s and worked in schools in low socioeconomic areas. I was shocked to find that little had changed in that the school environments still appeared to reflect little of the children's

worlds. I did my best to address this, and part of this quest involved finding out what the children's cultural interests were and identifying how I could then incorporate some of these interests in the curriculum. This led me to develop educational innovations relating to popular culture, and I soon noticed that the children were enthused and more engaged in literacy activities than ever as a result of these changes.

When I moved to work in a university, I began to undertake research about this phenomenon. My research involved studies in which I traced children's cultural interests and explored the impact of incorporating these interests into the literacy curriculum. In the 1990s and early 2000s, children's popular cultural interests were becoming increasingly shaped by technology, and so my research became focused on digital literacy practices and play. I literally followed the children's interests and found myself immersed in the digital world!

**AJP:** Some of your research has focused on the changes in children's play since the 1950s. What continuities have you found?

**Marsh:** We have undertaken a number of studies examining changes in the nature of play over time due to changes in technology. Using the collection of information about play developed by Iona and Peter Opie in the UK from the 1950s through the 1980s [[https://www.opiearchive.org/about/childhoods\\_and\\_play—eds.](https://www.opiearchive.org/about/childhoods_and_play—eds.)] as a starting point, our research has set out to explore the ways in which the categories of play noted by the Opies have transformed over time. In a book I coauthored with my colleague Julia Bishop called *Changing Play: Play, Media, and Commercial Culture from the 1950s to the Present Day*, we summarized the key continuities in play over this period as relating to functions, framings, and forms.

The functions of play have not changed over time, in that children play because it is fun; it satisfies cognitive, social, and emotional needs; and it enables children to respond to and make sense of the world around them. Children also frame play today in the ways that it was framed in the past, signaling when play moves in and out of pretend mode, for example. This kind of signaling takes place even in virtual spaces, albeit the ways of meta-communicating the changing play frames are different. Finally, the forms of play are still, in general, the same as they have always been, including imaginative play, physical play with and without playthings, verbal play, musical play, and so on. There are some types of play that are in less evidence in contemporary times—for example, some of the traditional ring

games that were recorded by the Opies—but other genres have emerged, such as dance offs. There is no need to be concerned that play is somehow disappearing because of technology—it is very much alive and kicking!

**AJP:** What are some of the ways play has changed?

**Marsh:** In *Changing Play*, Julia and I characterized the changes as relating to contexts, texts, practices, and processes. The social, cultural, and economic contexts for play have changed over time. For children in industrialized societies whose families have sufficient income, there are many more opportunities to purchase play experiences than in the past, from buying a wide variety of toys and games to visiting theme parks. There are great disparities in this area, of course, as many societies have great unevenness in family access to economic and social security.

The processes of play relate to the way in which play practices are transmitted and shared across contexts. In the Opies' day, new games and rhymes and popular crazes spread within and across countries through rapid transmission in playgrounds, streets, and families. Nowadays, the internet enables instant transmission across vast distances internationally, with sites and apps such as YouTube and TikTok facilitating the sharing of new and adapted content. Play has always involved some kind of bricolage as children weave together aspects of their daily lives into the play, but today we can see a kind of intensified bricolage—technology enables an accelerated processing of play and the layers that become woven together (play texts and practices) and can constitute a complex mix of offline, online, physical, digital, local, and global domains. For example, we have accounts of children playing online together in *Minecraft* and then re-creating scenarios from this play in offline fantasy games in their local woods, incorporating characters into that play that have emerged from gamer folklore and shared through sites such as YouTube.

**AJP:** You have written that it is not possible, in contemporary play practices, to separate online and offline domains. What do you mean?

**Marsh:** That is not strictly the case, as it is possible to separate online and offline domains in that one domain is digital and thus virtual and the other analogue and very much physical. However, the boundaries between the two are blurring in contemporary play practices. There have always been blurred boundaries in this regard. In the early days of online multiplayer games, players reported incorporating aspects of their offline lives into their online play, and vice versa. But now we have a world in which children's play

integrates the online and offline domains in fluid ways across all kinds of play practices, not just multiplayer games. For example, in a recent project we found some children used Fitbits to engage in competitive physical play with peers while others played with robot toys using apps that directed the actions of the robot, and children in one family used Alexa to count to ten as they played hide and seek in the home. In these instances, the online and offline domains are so integrated that it would be meaningless to try to conceive of them separately.

**AJP:** What is the “Internet of Toys,” and how has it changed the ways in which some children play?

**Marsh:** The “Internet of Toys”, or IoToys, is used to describe those toys that are linked in some way to digital services and applications. Using Bluetooth or WiFi, some physical toys can connect to the Internet and this enables users to interact with the toy, giving and receiving communications, or they can link the toy to an online virtual world or video game. Other toys, such as robots and drones, connect to apps that enable the toy to be controlled.

An early example of the genre was Hello Barbie, a Barbie doll that used voice recognition software to communicate with children. However, it was controversial in that recordings of children were sent to third parties for processing and a researcher found that the system could be hacked into, giving access to the system. The doll was discontinued in 2017. Other examples of IoToys include Furby Boom and robots such as Dot and Dash.

These types of toys enable children to play in ways that blur boundaries between physical and virtual worlds, between private and public spaces, and between the local and the global. Children playing alone in their bedrooms with some of these toys can connect with others digitally. For example, an app enables a Furby Boom user to swap virtual objects with others who also use the app. This kind of connected play is made possible with IoToys, although, of course, there are concerns about data security, privacy, and safety in the use of such toys.

**AJP:** What do we know about tablet use by young children—particularly those under three years old? Should parents be concerned?

**Marsh:** There have been numerous studies that indicate that in some countries children's use of tablets at home is widespread. For example, in the United Kingdom, a recent survey by Ofcom [the government's Office of Communications—eds.] identified that 99 percent of children went online and 69 percent used a tablet to do so. In a project I led a few years ago, we found

that 25 percent of children under three who lived in a house in which a tablet was used owned their own devices. The affordances of the touchscreen device mean that it is accessible to very young children.

Children use the devices in a range of ways. They use them to view and take photographs, watch videos, play games, listen to rhymes and music, browse the internet, engage in creative activities, read e-books, and so on. Children also use tablets to connect with family members through video-conferencing apps, and sometimes games are played during these encounters, such as hide-and-seek.

Tablet use can be very beneficial for children. They can acquire digital skills, learn key skills, and gain subject knowledge in all educational areas, but particularly in early literacy and mathematics. They can also develop oral language and communication skills, enhance gross and fine motor skills, and so on. Importantly, tablet use can also give children access to their cultural heritage, something of consequence in contexts in which kindergartens and schools may not have songs, rhymes, and books in children's home languages. Play with tablets can be highly creative and imaginative.

Parents and care givers are understandably concerned that their children's technology use is age appropriate and that there is a range of guidance available to help them navigate this complex world (for example, the international digital literacy network called DigiLitEY that I chaired produced a useful guide [which you can find at <https://digilitey.sites.sheffield.ac.uk/publication/information-for-parents/smart-parenting—eds.>]). For very young children, it is helpful for parents to use tablets with their children when they can, because the children learn more when there is such interaction. There is also a role for parents in ensuring children have access to good quality apps and sites. It is important that children's tablet use is moderated in terms of time spent using it, because overuse of technology means that they are not spending time on other activities and that some areas of development may thus be limited. But it is also essential not to focus on screen time at the expense of an emphasis on the quality of use.

**AJP:** In the research study titled *Children, Technology, and Play*, you found evidence that children learn quite a bit from educational games and apps. But what about when they play with games and apps that are not explicitly educational?

**Marsh:** We have found that children develop a range of skills and knowledge when playing with games and apps that are not explicitly educational. This

has been long known in the case of television, where research demonstrates that children learn a great deal about the world when watching non-educational programs. However, it is also the case with other media. For example, children playing a bus simulation game on a PlayStation or Xbox may learn navigational skills (directionality, map skills, distance, and so on) as well as develop gross motor skills and fine motor skills as they use handsets. They may also enhance their reading skills through engagement with on-screen texts. This kind of incidental learning is powerful, especially as games like these enable children to revisit skills and build incrementally on their knowledge through the game's levels. They are motivated to engage as the games relate to their interests and can be managed at their own pace. All of these factors are, we know, important for learning.

**AJP:** Many parents fear that children's use of digital technology makes them less imaginative and creative. What has your research shown?

**Marsh:** I have undertaken research in this area for over twenty years, and I have not seen a reduction in how imaginative and creative children are over that time. We have many instances of data that demonstrate wonderfully how children's use of digital technology can lead to highly inventive and creative acts. For example, children create imaginative story worlds based on characters that they have encountered in apps and games and can spend hours developing narratives, rehearsing language, and so on. We have seen many amazing films, photographs, video games, virtual worlds and virtual drawings and paintings that children have created.

However, what is important is the type of hardware or software that children are using. More open-ended digital tools, apps, and sites foster creativity. We found that YouTube offered many possibilities for being creative as children viewed craft videos, for example, and then used that as a starting point for their own crafting. Games such as *Minecraft* and *Roblox* offer numerous opportunities for children to be creative and inventive. Cameras in mobile phones are used in very creative ways, particularly if they are used in an app that includes editing features. These are just a few examples—the list of ways in which children are imaginative and creative in their digital play is endless.

Children are also just as imaginative and creative as they ever were in play that does not involve technology. Fantasy play, language play, art and craft, singing and dancing, and so on—they are all part of contemporary children's everyday play lives.

*AJP:* What about the stereotype that technology is isolating? How much do children collaborate in play with digital technologies?

**Marsh:** In the studies we have conducted, we did not find that technology is isolating. Children do play with devices independently at times, but they also collaborate in various ways in their play with digital technologies. Some games and apps are designed to foster collaborative play, including virtual worlds, video games, and so on. Devices such as PlayStation, Xbox, and Nintendo enable such collaborative play, in addition to online apps and sites. But children also play together using apps and devices that are not particularly designed for collaborative play. For example, we found examples of families in which siblings played games together using AI voice assistants such as Alexa and Siri and other families in which children played imaginatively with distant friends using video conferencing apps.

I would like to make a case for individual play with technology, however. Such use can develop digital and other skills, enhance knowledge and understanding of the world, and lead to feelings of independence and mastery. Children need individual play with technology alongside their collaborative digital play.

*AJP:* What are the digital skills that playing with digital technologies help children develop?

**Marsh:** A very wide range of digital skills may be developed when playing with technology. These include technical and operational skills such as operating devices and navigating apps. Children may also acquire critical digital literacy skills through their play using technology, which includes information and data literacy (conducting searches, browsing, analyzing, and filtering data), content creation, managing safety and privacy issues and so on. In addition, children can learn important skills related to digital citizenship as they play online with both known and unknown others, learning how to communicate with others in a digital age. However, not all children have equal access to technology, and some children receive more support than others at home in the development and practice of these skills. It is, therefore, important for schools to provide opportunities for all children to acquire digital skills using playful means.

*AJP:* What other kinds of skills does this type of digital play help children develop?

**Marsh:** Children acquire subject knowledge across a wide range of areas through digital play. There are many apps for young children that aim to develop



literacy, mathematical and science skills, and knowledge, but children also gain other subject knowledge through watching television and YouTube content, engaging with games that feature historical characters or are located in international contexts, and so on.

Children also develop cognitive, social, physical, emotional, and creative skills in their digital play. Executive function and working memory, for example, can be enhanced through the use of some games and apps. Through digital play, children can learn to communicate with both present and distant others, to understand others' viewpoints and to empathize with them. Physical skills are developed as children control devices, but they are also developed in their use of the devices. For example, we have found some children are using wearable devices to capture physical play, others are engaging in dancing competitions using video capture apps or practicing football skills they have learned from playing FIFA video games, and so on. Playing video games also enables children to develop important life skills, such as the ability to remain focused, resilient, and motivated in the light of disappointments and challenges.

**AJP:** How does digital play support children with different or additional needs?

**Marsh:** Digital play can be very beneficial for children with different or additional needs. There are specific apps made for children who are deaf and hearing impaired, for example, which enable them to engage in storytelling and messaging using sign language. Similarly, apps for children who are visually impaired include e-books and apps that promote sensory play. In our studies, we have found that playing apps can support children on the autistic spectrum as some find the playing of games to be a calming process. However, it is the case that there needs to be more focus on the provision of technology that can support such play because there is a woeful lack of specific provision for children with different or additional needs.

**AJP:** What are some of the barriers that stop children from developing these skills through digital play?

**Marsh:** The first and most significant barrier is socioeconomic. There is a great disparity in the levels of access that children have to technology due to the circumstances of their families, and this creates a digital play divide. An additional significant barrier is the design of the apps, games, and sites themselves. For example, the more open and self-directed the digital play is as a result of technical design of a device, app, site, or service, the more children are able to develop creative skills. I chaired a panel for the Depart-

ment of Education in England in which we devised a set of criteria—called the *Educational Criteria for Early Years Apps: Evaluation of Communication, Language, and Literacy Apps*, which came out in July, 2019—for identifying those apps that were more likely to lead to the development of literacy skills. It was surprising to find that a number of apps ostensibly designed to foster literacy learning through play were not compliant with many of the criteria, thus limiting their educational value.

A further barrier to digital play can be the family context. Some parents who are overly anxious about online safety issues, for example, can actually limit children's digital play in ways that are not helpful. It is important to achieve a balance between monitoring children's technology use to ensure it is safe and healthy and permissive enough to allow exploration, experimentation, and creativity.

**AJP:** What are good examples of digital games or apps that develop creativity?

**Marsh:** YouTube is an example of a site that fosters a great deal of creativity through its sharing of videos that can educate and inspire others. Children can also be creative as they develop their own content to share on YouTube. Games such as *Minecraft* and *Roblox* enable children to create games and worlds that foster their imagination and develop their creative skills. There are many apps that promote creativity—some notable ones are the BBC apps for young children: Playtime Island and Get Creative. Toontastic, which enables children to create and share animations and some of the apps created by the companies LEGO, Sago Mini, and Toca Boca are also of good quality.

**AJP:** What role should adult caretakers, teachers, and older siblings play in children's play with digital technology?

**Marsh:** There are a number of roles that they could take. Facilitating play through the provision of the right hardware and software is important, as is the monitoring role, as I have already mentioned. However, it is also important that caretakers, siblings, and teachers, when they are able, play with and alongside children. This can not only serve to strengthen familial and social relationships, it can support the acquisition of skills and knowledge as adults scaffold learning.

**AJP:** In the research project *Children, Technology and Play*, you asked children to design toys they would like to see. What did you learn?

**Marsh:** Children's inventions for future toys were interesting in that they focused on developing toys that linked together online and offline domains more

closely. They also wanted toys to foster a sense of independence and self-efficacy, and some children designed toys that would enable them to link up with distant friends. These are all features of the kinds of toys and other provisions that some in the industry are currently focused on producing. It was also of interest that the children incorporated elements of branding and marketing into their designs, demonstrating their awareness of contemporary commercial approaches to play.

**AJP:** What kind of things should the toy and game industries consider when they design items for digital play?

**Marsh:** In the *Children, Technology, and Play* report, we suggested that the children's media industry should work to develop a set of standards for technology and play. The standards should emphasize that the need for goods and services, among other factors, be age appropriate, foster learning, meet a diverse range of learning and development needs, be culturally and linguistically diverse, enable children to play safely, cultivate creativity and imagination, give children sufficient choice and autonomy, promote sustainability, and be tested appropriately with children before release.

We also found that there was a concerning lack of diversity in digital play products. There needs to be a focus on the development of toys, games, and services that are much more diverse in terms of representation of racial and ethnic identities, gendered identities, and disabilities. In addition, many children live in families with LGBT+ parents or other family members, or they live in single-parent families or with extended families who cohabit, or they live in foster or adoptive homes, and so on, yet few games, products, and services reflect these realities. Further, more apps are needed in languages other than English, which dominate the market.

**AJP:** What are some of the yet unanswered questions about children's play that you would like to see future scholars tackle?

**Marsh:** As I have indicated, there are important gaps in knowledge about digital play in diverse childhoods, and this needs urgent attention if we are to create knowledge that can inform the next stage of development of products and services for children.

There are specific groups of children for whom we have very little knowledge about their digital play, and they could be a focus for future work (for example, refugee and asylum seekers, children with different or additional needs, looked-after children and children who have experienced domestic violence). Such research should be coproduced with organizations

that have many years of experience working with children and families within these groups.

In addition, we have few studies that have examined children's digital play longitudinally. It would be helpful to trace children's experiences of play with technology from birth and into their transition to formal schooling to identify ways in which such play can support, or indeed limit, their development.

There are also important questions to be addressed in relation to the role of digital play and learning. Maker spaces can offer playful environments for the development of digital skills, and there is much work to be done on how best to support such learning in both formal and informal settings. Our Maker{Futures} program is focused on this area and will be addressing these issues in the years ahead.

Finally, there are going to be further advances in technology in the future that will be important to trace. In particular, the development of the metaverse has significant implications for children if they are going to have opportunities to be fully immersed in virtual environments, with possibilities for meeting both known and unknown others. There will be issues of safety and privacy to address, as well as researching how best to develop products that will enable creative and productive play for children in the metaverse.

There are many talented and creative scholars currently engaged in research on digital play, and I am sure they will have many other areas to add to this list. I look forward to learning of their work in the years ahead. Of one thing I am certain—digital play will continue to be an important area for research, giving its ever-growing presence in the lives of children and families. Over the past two decades, I have seen its evolution firsthand and feel that we are still only in the early stages of understanding the implications for children. As technological developments escalate at an even faster pace in the years ahead, there needs to be greater government focus on this area of work and additional funding for international, collaborative research if we are to develop approaches and resources that ensure our children have happy, healthy, and productive digital play lives.