6 Play and learning in the digital age

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This chapter examines the cultural history and discursive construction of play and learning, drawing attention to the way that both human activities have been differentiated but are now becoming ever more blurred. This is analysed in the context of changes brought about both by the technical affordances of digital technologies and the political economy of digital culture which has focused on turning learning into a commodity purchased and used in the home as much as in the school. The existential open-ended nature of play itself has been significantly influenced by video gaming and the turn to playfulness in public culture more generally. The chapter argues that it is important not to subordinate play as an instrumental developmental function of learning and that learning itself should not be conflated with the outcomes of the formal education system.

Introduction

"Play" and "Learning" are probably the two most common words used to describe the purposes, activities and nature of what it is to be a child. From Maria Montessori's dictum, that "play is the work of the child" through to controversies over assessments of the "learning readiness" of two-year-olds in some countries, both play and learning are simultaneously conceptualised as being in a crucial dynamic, even binary, relationship with each other; as much as together (along with "growth") they describe what children do and what we want from them.

For all their common-sense use, both terms actually express a range of meanings and we frequently conflate substantive (noun), descriptive (adjectival) and active (verb) modes of both terms. Scholars of childhood (Ariès, 1962[1]; Lancy, 2014[2]) suggest that contemporary childhood as we know it is a relatively recent cultural phenomenon that became universally recognised and commodified in the 19th century and that therefore both play and learning predate childhood as existential human activities. Frequently variants of both terms expand our use of the repertoire. A play can take place in a theatre, and games and gaming can both stand for or be part of the term's definition; being playful is not always the same thing as "play" or playing (Sicart, 2014[3]). In contemporary societies learning has been organised, even industrialised some might say (Hamilton and Zufiaurre, 2013[4]) so that the term is conflated with education and schooling even though philosophers of education are keen to disentangle how learning describes what individuals do as opposed to the broader social and cultural investments in education systems and forms of institutional schooling (Biesta, 2012[5]; Biesta, 2011[6]).

The digital age, taken in this instance to mean the ever-evolving integration of personal, social, political, civic and economic life mediated and structured by digital technologies in virtually every aspect of everyday experience, thus inherited a series of contested and changing conceptual definitions. Play and learning in the digital age therefore re-contextualises existing cultural practices:

- to accommodate the possibilities afforded by the digital technology itself,
- and, in response to the particular forms of social and economic life maintained through digital means.

This chapter is built in several layers. First of all is an effort to explore the conceptual matrix of both terms – play and learning – in and of themselves and in relationship to each other. This level is focused on questions of definition as well as an historical overview of society and childhood. Second, is an attention to the changing uses of both terms and the ways that both terms have been used for particular political and social purposes because they suggest normative programs and policy. Although both terms describe human activity in general (Rogoff, 2003[7]) they are now are peculiarly oriented towards the young and education. This leads into the contemporary moment – the third layer – exploring how the digital age is redefining both concepts due to a series of social and economic pressures.

Whereas much popular use of both terms and both concepts emphasises the differences between them – the central argument of this chapter is that we are now living through a particular moment of redefinition. Both the political economy of digital media use <u>and</u> the political logic of the education systems in many counties have transformed practices leading to:

- the playification of learning,
- and, the learningification (or more strictly, the educationalisation) of play.

This is an ongoing process that challenges long-held and cherished boundaries between both domains. The slightly uncomfortable coining of these words, play<u>ification</u>, learning<u>ification</u> and educational<u>isation</u> are intended to capture an ongoing process of redefinition. The awkwardness in phrasing can suggest that this is not necessarily an easy or comfortable evolution but rather the result of sociocultural "forces" at work. The coinage thus captures and describes historical and material changes in discourse but also, in using these terms analytically I want to draw attention to struggles for meaning and value and especially

the colonisation of one domain and "life-form' by another (Habermas, 1989[8]) through contemporary digitally mediated modes of social and political organisation.

The argument is that play has become more colonised by the need to promote educational values and make its learning explicit at the same time as many kinds of learning activities both in and out of school have become explicitly more playful and game-like. This argument is summed up in Figure 6.1 below.

Figure 6.1. Schematic outline of changes in the uses of the concepts "play" and "learning" in the 21st Century
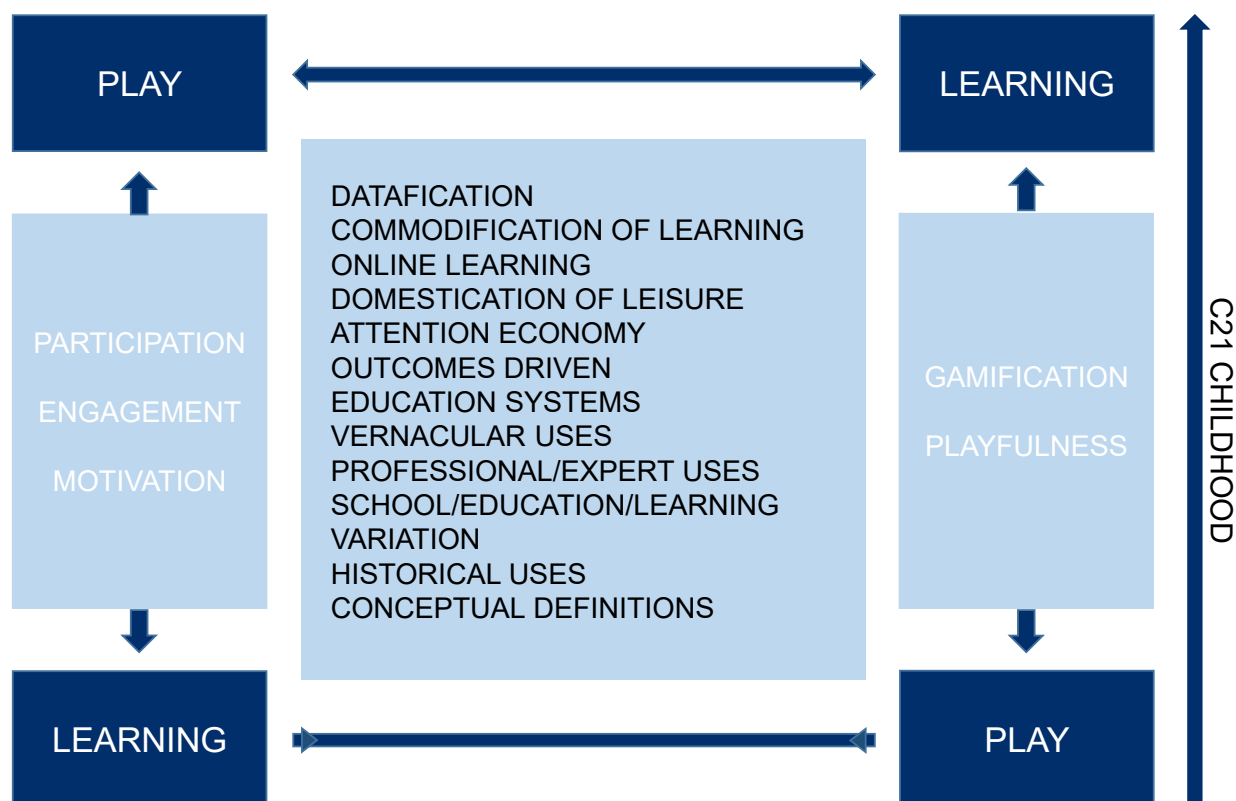
Philosophically and conceptually, play and learning have been explained both in terms of overlapping and distinctive domains (at the bottom of the diagramme). Different national and cultural traditions about child development, growth and education have tended to emphasise different aspects of where both play and learning should be kept separate or converge. As the diagramme moves upwards, it shows how the global pressures influencing 21st century childhood (including changes to national education systems and the growth of outcomes driven standardised testing (Luke, 2018[9])) as much as those driven by the expansion of digital technologies into the home (Livingstone, 2002[10]) are recalibrating definitions as well as activities for children at home and at school.

Philosophical and practical definitions, uses and activities

To most people, much play looks like learning and much learning looks like play to the point where any distinction between them might seem academic. Watching four-year-olds in a sandpit engaging in pretend play, 11-year-olds strenuously trying to practice football skills, an 18-month-old playing with her mother's mobile phone, groups of 14-year-old students puzzling out circuitry in a mechanics class, it is often very difficult to work out whether children and young people are learning or playing or both. We will return to

the question of whether such distinctions matter, to whom and in what contexts later in the chapter. This section reviews conceptual definitions to help us organise key principles, which we can then use to make sense of how things might have changed in the digital era.

From nearly all disciplinary perspectives – evolutionary psychology, cognitive psychology, learning science, sociocultural theory, cultural anthropology etc. – play and learning are understood as activities fundamental to being human (Vygotsky, 1978[11]; Olson and Torrance, 1996[12]). It is actually more difficult to think of a state of not learning or not playing as if this is or could be something people didn't do (not to be confused with situations when they are not allowed or forbidden to do either). Debate thus tends to focus on differences between the practices and ways that people learn to play and play to learn, and the purposes that either activity serves within whatever theory of development pertains to each culture. Here the question of the end or purpose of play and learning becomes far more problematic.

Theorists of play are keen to make the case that the purpose of play is play itself; that it has an ontological integrity. We will return to the challenges inherent in this position, but we need to understand first that this is the central argument used to rebut any claims to instrumentalise play, to understand it as serving other social, cultural or cognitive functions. One common belief in the instrumental tradition is that play performs a fundamentally educative role in allowing the young ways of experimenting, trying out and learning about key social frames involving boundaries, limits, rules as well as acting as a form of practice for adult life. This "folk theory" of mind (Bruner, 1996[13]) is well entrenched in popular discourse.

However, scholars of play point towards the fact that play is common through the life course and does not simply serve a developmental function. This was most explicitly argued by Huizinga who offered a historical review of forms of play underpinning a range of cultural activities (Huizinga, 1970[14]). Brian Sutton-Smith further refined the distinction between play from education by approaching play as a series of rhetorics (Sutton-Smith, 2001[15]). Rather than seeking an intrinsic formal definition of play, he pointed to its essentially ambiguous nature showing how the concept is best approached through a series of discrete perspectives, "progress, fate, power/community, identity, imaginary, self and frivolity". Sutton-Smith does acknowledge play's adaptive function but suggests that the term primarily performs a heuristic function in making sense of a basic human activity. Play activities often fulfil more than one of these rhetorics or perspectives and can be present at all sorts of levels and all sorts of ways, in contemporary social life. Just picture an everyday scene in so many households; a game show is on television, children are engaging with toys or running around, other children playing either collaboratively or individually on or through devices, all surrounded by jokes, innuendo, wordplay and often reliant on, devices and so forth. Thomas Malaby further argues that "we cannot simultaneously use [play] reliably as a label for a kind or form of distinct human activity [as] something that allows us to differentiate between activities that "are play" and those that 'are not' (Malaby, 2007, p. 100[16]).

This deconstructive approach does more than simply relativise play – making it all things to all people. First, we need to recognise that historical meanings are constantly present even when they are changed through reuse: and secondly to acknowledge that the idea of play cannot be reduced to a single simple purpose (Malaby, 2007[16]). This is particularly important in respect of the concept of play in relationship with learning and education.

To some extent, there is a conceptual parallel with arguments around learning. From a cultural and historical psychological approach, learning too seems to be an innate human activity whose purpose might be interpreted in respect of evolutionary and social adaptation in terms of activities that lead "to permanent capacity change" (Illeris, 2007, p. 3[17]). However, whereas the social history of play is frequently preoccupied by stories of containment (for example around the role of Carnival), it is almost as if the opposite is true in respect of learning. Indeed, it is impossible to examine the history or organisation of any society without noting that the ways that certain forms of learning are organised, codified, and valued are always central to how power is authorised in that society. The growth and development of the examination to become a bureaucrat or mandarin in ancient China, the development of the "Public" school system in

Imperial Britain in the 19th century (Williams, 1961[18]), the expansion of opportunity and the growth of the technological driven industrial markets of North America (Goldin and Katz, 2008[19]) are all examples of the ways that the organisation of learning in schooling have dramatically shaped contemporary nations (Meyer et al., 1997[20]).

Understanding the distinction between a theory of learning (either from sociocultural perspective or as a psychological process) and the ways that learning has become categorised and organised as a set of measurable skills and knowledge transmitted through the disciplinary structure of school is central to the argument here. Schools, or more accurately schooling, offer a way of structuring collectively valued forms of learning in accord with a series of social and cultural norms. So, how people learn – sitting in rows, being tested by recall, reading in silence (all that might add up to the appearance or performance of a traditional academic kind of learning) cannot be disentangled from what they are learning or what their learning might mean. This is, furthermore, mixed up with how schools discipline children both individually and in groups, and how it validates or assesses their learning. A good example, and one that is especially relevant for us is the difference between the age at which certain countries think children should be taught to read and write and whether schools should be playful or structured in their social interactions and organisation. Scandinavian countries, especially Finland, are often held up as contrary or counterintuitive examples to say the United States or the United Kingdom, where children start organised curriculum at a later age and where the emphasis on valuing learning taking place through organised play is preferred to that of direct instruction.

How children demonstrate that they are learning and what they have learnt is something akin to a cultural difference between and within different nations rather than an abstract universal human phenomenon (Alexander, 2001[21]). This problematic has been summed up in the phrase "what learning counts and what counts as learning" (Green and Luke, 2006[22]). Cross-cultural comparisons always highlight these differences. What it means to be an "educated person" is not easy to compare and frequently describes the outcomes of being schooled in a particular society at a particular time rather than abstract measures of what people can and have learnt (Levinson, Foley and Holland, 1996[23]). Different traditions of schooling often measure different capabilities and value different demonstrations of what it is to be educated and what people have learnt. In other words, at an abstract philosophical level it is difficult to define learning:

- outside of different cultural and national definitions of what schooling counts as learning
- except with reference to what is not – namely play.

All of these distinctions are slippery and inconsistent. The biblical phrase "to put away childish things" frequently underpins our injunctions to children to stop playing and do some schoolwork even if in practice, that might mean being involved in an organised game or that the work itself might be playful. More controversially and more problematically are those situations where children and young people are engaged in forms of learning that do not usually count in school; the inverse formation of the same problem. This has been most explicitly researched by the "Connected Learning Research Network" which tried to find ways to build on engagement, interest and motivation in learning domains that are not usually defined as such (from playing computer games to after school video clubs for example), in order to explore how such drive can then be used by the formal academic fields at school (Ito et al., 2020[24]; Ito et al., 2013[25]). These kinds of initiatives are important in making the case that if society exclusively focuses on narrow definitions of what counts as learning, many young people's interest and engagement in learning risks being marginalised. Furthermore, politicians frequently conflate measurable outcomes of learning with statements of value or effect. Indeed, the OECD and other International tests have been drawn into political debate about the value of comparative testing such as when PISA or TIMMS 'results' are as taken as proxy measures of changes in the nature, meaning and purpose of learning by diverse populations (Simola et al., 2017[26]).

Finally, and as a way of seeking some balance here, it should be noted that just because traditions of schooling and education have acculturated us to particular definitions of what counts as learning, this does

not mean that such definitions are intrinsically misplaced. It is true that popular and political assumptions about education often proceed from a generation when such views were formed – i.e. in the past. This can often explain anxiety about innovation, especially in relationship to technology (Buckingham, 2007[27]). However, learning as a concept, like play, is profoundly abstract in essence and can only find its form through expression and in a language that we recognise. Digital technologies entered into the home and the school at the same time as concern about the purpose and nature of schools in our society reached an important political shift. Although international comparative studies are often taken as emblematic of this shift , it should be noted that promulgation of various educational reforms such as *No Child left Behind*, (Berliner and Biddle, 1999[28]) or the English National Curriculum (Ball, 2008[29]), which describe reforms dating from the 1980s and 1990s, set the foundations for such changes. Together, it has been suggested that the last 30 years of educational reform have added up to a sea-change in what learning counts (Glass, 2008[30]). It was in this context that digital technologies began to create and develop new and different kinds of learning and play activities. This in turn has led to an extraordinary period of reflection and reconceptualisation of what play and learning might mean in the first place.

The gamification of play

In 2014, Eric Zimmerman published a manifesto for a ludic century (Zimmerman, 2014[31]). He argued that games (primarily referring to videogames, those played in digital forms on consoles, computers or mobile devices including phones) have become the new dominant cultural form of the 21st century. This was building on an argument that saw film occupy that spot for the 20th century and the novel for the previous one and that playful interactions characterise the meaningful use of leisure time. In this paean of praise, playfulness, gaming literacy and game design become the defining hallmark of contemporary global culture. This may be an extreme expression – it is after all a manifesto propounded by an exponent of play – but it contains a number of elements which benchmark many of the ways that computer games and digital-related play have transformed the landscape of play. Key here are the notions of playfulness and games (or gaming). Both of these concepts are key aspects of play itself, but both have gained slightly different prominence in the current moment.

Games and gaming

The last century saw a burgeoning interest in game theory both from a Mathematical Logic and Economics perspective. In all disciplines games and gaming are serious matters relating to the development of rule-bound systems thinking and analysis. Indeed, sociologists of play became increasingly interested in translating insights derived from the formal study of rules in games to make sense of tensions within the nature of play itself. The philosopher, Caillois attempted to distinguish the idea of open play such as children's' pretend play (paedia) from rule-bound play (ludus) especially paying attention to the meaning of chance and competition (Gane, 2019[32]) within human activities framed in terms of games (Caillois, 1961[33]). The growth of cybernetics and systems thinking further legitimated attention to this way of making sense of human actions. Indeed, the whole field of computational thinking owes some of its lineage to mid-20th century interest in game theory deriving from a concern with the interpretation of rules within bounded systems.

At the same time as this more obscure and theoretical field of study was developing and even gaining some more popular traction through discussion of economics, the emergence of the videogame industry placed game playing and an interest in the culture of games at the heart of mainstream popular culture (Wolf, 2002[34]). The videogame and indeed its further development on mobile devices was as much a driver as it was a product of the computerisation and digitalisation of work, leisure and everyday life. Many home computers were initially purchased for gameplaying and the whole console market emerged alongside the videogame itself (Beck and Wade, 2004[35]). Gameplaying on mobiles seems to be virtually

ubiquitous. While the videogame as a cultural form remains, in combination with all sorts of mini games frequently accessed through web browsers or as part of platforms like Facebook, digital game play is a global activity in terms of time spent and near-universal reach.

It is thus impossible to talk about play without taking into account the way that play has become gamified. Usually the term "gamification" describes the application of game form or game-like behaviours to typically non-game activities of which there are indeed many examples in education, such as *Kahoot*. Here, it is as if the activities of play themselves have become significantly gamified both by the fact that much play now takes place via a screen and indeed is formally organised as a game. This has generated significant interest and debate from scholars of play and childhood and those concerned with its commercialisation in everyday life (as well as scholars of education, see below).

We are still trying to determine the impact of the turn to digitalised gamification on play and specifically on play in the lives of children and young people. There are no clear-cut findings and, as should be clear by now, trying to disentangle the effect of one complex variable on a cultural norm is an impossible challenge when framed from a social science perspective. This book's sister volume and the other chapters collected here offer more detailed complementary perspectives on how this new kind of play might affect emotional and social well-being, physical health and development, and social relationships. Broadly speaking, discussion is mainly framed in two ways:

- First, in a conceptual language of causality that is expressed as cost benefits and externalities (Cartwright, 2007[36]): how can we look at the advantages and disadvantages of screen-based gameplay as opposed to others kinds of play, like physical play outdoors; how do we measure or calculate such impacts; what do differences in play activities mean for other kinds of ways in which children are growing up?

- Second, there is a moral-historical dimension framing the question of effects in terms of existential changes to the nature of childhood itself. This is a tradition that began with the investigation of the effects of mass media, originally television, on childhood (Meyrowitz, 1985[37]) arguing that children are now exposed to the adult world. It subsequently evolved to examine the way that children and the family became exploited by a variety of market-driven commercial interests (including education and educational toys) (Kline, Dyer-Witheford and Peuter, 2003[38]) to become a source of moral and political concern about what society wants for and from its children (Buckingham, 2007[27]).

A good example of the ways that these threads come together might be discussion of the reception of the game *Fortnite*. Concern, anxiety and moral panics over violent competition are weighed up against arguments in favour of teamwork and collaboration (the game popularised the spread of the phenomenon of dancing "the floss") all encompassed in discussion about potentially unhealthy kinds of individualised addiction. How time is spent, how financial expenditure is authorised within the political economy of the family, how achievement and loss is valued (Carter et al., 2020[39]) are all contrasted with other kinds of traditional play (as well as seemingly less controversial and more 'educational' activities on-screen such as have been researched in respect of the phenomenon of 'Minecraft' (Dezuanni, 2020[40]) see below). Frequently, screen-based games, especially those which have generated controversy, stand as substitutes for all kinds of play in the digital area. Research, policy and public debate need to pay attention to the accuracy of both reducing all kinds of play at this time to these kinds of gamified experiences; and being able to understand the balance of such activities within the broader ecology of children's play.

Playfulness and serious games

The second dimension of Zimmerman's manifesto described in the introduction to this subsection, concerns what he called "playfulness". In addition to the gamification of play, the argument is that our culture generally has become more playful across a huge range of social and digitally mediated interactions, especially Zimmerman noted, in respect of data.

Playfulness needs to be distinguished from play. It is better understood as part of an attitude or as a modality reflecting the desire to act or speak or engage in a certain kind of playful manner: it is applied to something else as opposed to play itself which has its own integrity (Sicart, 2014[3]). Whereas it is not quite clear what the opposite of play might be (notwithstanding this chapter's attempts to situate learning as its binary other (Malaby, 2007[16]) cites discussion in (Stevens, 1980[41]) to advance this argument)), the opposite of playfulness is seriousness, underscoring an attitudinal dimension. While it is difficult to measure such a change, we might cautiously advance the claim that public discourse has broadly speaking, become more informal over the last 40 years. The news is now regarded as a form of entertainment (as defined by broadcasters and the media industries rather than through the behaviours of individual politicians (Davies, 2009[42]) and humour is now far more evident in situations that used to be more formal – such as in schools, civil society and in personal social interactions. The workplace and the nature of work has been studied as an example of ways where until recently formal hierarchical interpersonal transactions have been softened and become more explicitly pleasurable and enjoyable driven in part by humour and fun (Boltanski and Chiapello, 2007[43]). It has become particularly acceptable for forms of public information, advertisements and other forms of public address to seek out engaging and playful ways to get messages across.

We shall explore more of this public turn to playfulness below in the section on transformations in the discourses of learning. Here we want to register how much our playful culture obviously affects the meaning and scope of play itself. Nowhere is this paradox more evident than in the seeming counterfactual of "serious games". There has always been a tradition within play that acknowledges its fundamentally serious nature (Wassermann, 1992[44]): it may sound paradoxical but play does not always need to be playful. The game theory behind explanations of *ludus* in so many aspects of social activity is not necessarily interested in frivolity or fun. The development and growth of serious games as curriculum acknowledges the very wide range of gaming experiences that have both serious intent, serious effect and are perhaps only playful in the formal sense of deconstructing conventions rather than in the commonly used way of suggesting a lack of seriousness, and fun for the sake of it (Beavis, Dezuanni and O'Mara, 2017[45]). Serious games is our deliberate segue into the ways that learning has become playified and that learning can be understood in terms of the systems thinking underpinning game theory. However, before we move into that section more fully, it is worth noting how the very concept of serious games rests on an assumption about social expectations. Being playful and knowing how to understand playful interactions now form part of the assumptions about the ways that we interact with each other, are governed, find out about the world and of course, learn.

What is at stake in the playification of learning?

The argument in this section of the chapter is that playful and playified learning (that is the organisation of learning modelled on new genres and forms of play):

- characterises a contemporary discourse about the nature of learning
- can explain how learning has become an entertainment commodity for families
- and can thus provide legitimation for the spread of digital technologies into the home and school.

As noted above, there are no simple ways to define learning, even when we have separated it from schooling. We can however isolate different traditions that conceptualise how learning takes place (for example, cognitive psychology, behaviourism, sociocultural interaction) and we can collate and reflect upon the ways that learning is theorised and embedded in school curriculum, popular understanding and policy mandate. A collection like *Contemporary Theories of Learning: Learning theorists in their own words* (Illeris, 2009[46]) captures some of this diversity from theory over the preceding 30 years and eloquently describes the dimensions, types, sites and organisation of learning. Many of the contributors to that volume developed their theories prior to the spread of digital technologies into the home and at school and the

essays in the book do not emphasise play or playfulness that much - except in respect of classic discussions about the developmental function of play. However, it is difficult to imagine that a collection of learning theorists practising now would not make forms of play and playful learning far more prominent.

Although it is virtually impossible to measure, this chapter contends that learning (or more accurately what people understand by the term, "learning") as an activity, at this time in the digital era has become a practice suffused with interactions associated with leisure and entertainment connotations. This is not to suggest that it is necessarily valued as a playful practice, or that playful learning has intrinsic value but that playfulness has been adopted as a 'sweetener' to make what counts as learning more palatable.

This is not just a question of the ways that the formal curriculum has taken on so many behaviours and interactions associated with play but also how forms of entertainment purchased by parents and consumed in the home take forms of learning (usually related to school-based attainment) as their subject matter. Minecraft is a good example of this changing trend.

Minecraft

Minecraft is a now perhaps more like a platform than an individual game (Helmond, 2015[47]), but it originated as a form of open-world survival play. Released in 2011, it achieved unanticipated success leading to its acquisition by Microsoft for USD 2.5 billion in 2014 (Simon and Wershler, 2018[48]). The game is now available across a range of different devices (mobile, consoles, computer and tablet) and is one of the most widely played bestselling games of all time with perhaps 120 million players a month. Its durability and its range and reach are inseparable from the way that playing the game is perceived to be broadly speaking, educational. The game blends elements of immersion, collaboration with others (in design, making and building) along with gameplay generated by the survival threat. Coupled with distinctive and perhaps child-like aesthetics (Simon and Wershler, 2018[48]) it also works as a platform, enrolling players in a host of activities that range from providing access to global libraries to the ability to programme/modify features of the game world and gameplay.

Marketed originally simply as a game for consumption by individuals in the home – that is, as "entertainment" - Minecraft has been taken up and adapted by informal educators and even school curriculum, by no less an authority than the World Economic Forum as a way of developing technology skills to offer more organised, consistent and measured educational experiences. From its place in home-schooling to its use in different countries in summer camps and out-of-school learning, the game (or platform) can be found across schools and homes in ways that absolutely embody the shifting boundaries between play and learning in the digital era. Academic scholars of education have looked at its social and interpersonal dimensions (Dezuanni, O'Mara and Beavis, 2015[49]); scholars interested in coding and computational thinking have looked at it again from that perspective (Baek, Min and Yun, 2020[50]); scholars interested in teaching about technology and digital skills (Dezuanni, 2020[40]) have explored the game. The list is ever-growing and now there is concern about the ways that engagement on the platform exposes children, families and indeed educational establishments to the threats of datafication.

Originally designed as straightforward entertainment, the game can now be found in many homes, endorsed by children, parents and teachers as an inherently engaging, demanding, innovative and future-oriented skills focused way of learning in a fashion that did not exist 20 years ago. James Gee's study of literacy and video games proposed that a good game engages forms of learning well beyond the kinds of measures and metrics used by the school system to describe what learning means (Gee, 2004[51]). *Minecraft* absolutely seems to prove that argument. The playfulness of Minecraft supports principles of learning to learn and of learning as a habituation in certain kind of ways of thinking and socially interacting rather than solely defining learning in terms of curriculum or content - driven outcomes. It is this valuing of the process nature of learning as a habit that counts. And at the heart of the process of playified learning are qualities of engagement, of motivation and of interest of being swept up in the experience rather than being externally required or disciplined to participate.

Fun and games are serious business

The interest in modes of attention, participation and engagement is inseparable from the ways that being online, using digital devices has now been characterised as an "attention economy". While *Minecraft* might have begun as a product in the entertainment industry aimed at children and young people, its take-up and use by the non-formal education sector and schools as well as its purchase by parents for broad educational purposes exemplifies how the home and domestic market need learning to be packaged as commodity products. The title of this subsection is taken from a study produced in 1998 (Nixon, 1998[52]) examining how computers themselves, the hardware, were marketed into the home as educational products and that the premise for the spread of digital devices depended upon the ways that learning could be sold as fun and fun can be sold as learning; (Buckingham and Scanlon, 2002[53]). *Minecraft* exemplifies a next stage in this process as learning moves from being a justification to validate the purchase of equipment to becoming a commodity in itself. Much learning software of course requires participation on a platform, which in turn enrols users' activities as data in secondary markets (Zuboff, 2019[54]) thus furthering the process of marketisation.

From this point of view gamified learning or learning marketed as fun via apps and other mobile devices has become part of the larger framing through which many kinds of human interests and activities have been transformed as they have become digitalised and datafied (Couldry and Mejias, 2018[55]) with a particular focus on the role that the business of education plays in this process (Williamson, 2017[56]). Playified learning it seems has become the push to open up the home and indeed the school to these emerging markets. The implications of this move are beyond the scope of this chapter and indeed it is important not to conflate the datafication of education with its interests in control and governance (see, for example, (Bradbury, 2018[57])), with the commodification of learning in the domestic market via its playification.

We need therefore analyses to understand the significance of how learning has been framed through play as a mixture of entertainment and investment in children's learning especially from the perspective of the home rather than thinking of this in terms of simply a school or education market. The blurring of a market for digital educational products is indeed a hallmark of the definitional imprecision analysed throughout this chapter and is exemplified by the ways that certain kinds of software from *Minecraft* through to *DoodleMaths* can be found equally in homes and schools.

Studies of the overall market in "educational" software and/or games are hard to come by. This is partly a question of aggregating commercially sensitive information and partly a question of defining genres and types of software across different platforms. Game-based learning as defined by the educational software industry can be described in terms of overall turnover such as a relatively recent industry report suggesting it is currently valued at USD 2.4 billion but may be worth USD 17 billion as a global industry by 2023. Not only do the headline figures disguise variations between and within usage by platform, software and other technical features they also don't necessarily help us understand nation by nation comparisons or intra-national variations. We can see how popular leisure-oriented distribution platforms like *Steam* promote games and apps that they consider to be educational but like download figures from Apple or Google's mobile application stores, statistics can only paint a very broad brush about popular genres and types. It would be useful to have country by country analysis of educational software purchase and use – useful significantly because education systems are still subject to national or sub-national control – and this would also help us understand how global companies both market themselves towards different national or regional markets and of course create transnational educational experiences. Following *the investment by Disney in the Norwegian-based Kahoot* for example and examining the use and marketing of new products, and business models is instructive.

There is also a gap in knowledge from the consumers' perspective. Many national agencies carry out studies of family purchasing and time use of digital technologies (e.g. in the United Kingdom) but this is rarely granular enough for us to disentangle time spent on educational software even though there are

often many studies about popular anxieties in many countries around the world. There are trusted large-scale studies of family and child use of technology in the home (e.g. Global and EU Kids Online) and now large-scale collaborative research projects investigating some of these questions (e.g. CO:RE and ARC Digital Child) but to a great extent we are reliant on insights from qualitative research to conceptualise how children within families spend their time, on which types of software and within what kinds of learning and/or play frameworks (Livingstone and Blum-Ross, 2020[58]). These kinds of studies are inevitably country specific, and it is difficult to extrapolate varying patterns across national use. There is a strong tradition of research exploring the impact of access to computers in the home on educational outcomes but such measures typically are defined according to the prevailing metric of what counts in the relevant school system (for example, (Bulman and Fairlie, 2016[59])) so it is very difficult to get an insight into the ways in which the widespread adoption of digital technologies in the home have changed what it means to play or to learn.

Coda: From a political economy of play and learning to the everyday

We have mainly explored conceptual and discursive definitions of play and learning and how these have been mediated by the political economy of the digital. However, it is worthwhile outlining the state of knowledge in our research. What is the empirical evidence about what children and young people are <u>actually doing</u> when they play and learn? Do we know if their activities, their playing and learning have changed in the last 30 years and how? We all have our anecdotes and our own experiences but is there research that can describe and measure the current state of play and learning?

This is obviously a difficult question to answer and certainly such answers do not exist at scale and at cross-country comparison level. There are most obviously a huge number of qualitative studies that give some insight into the experience of play and learning as opposed to studies of outcome or proxy measures. Hopefully, other research can frame and meta-review these studies: a project requiring at least its own chapter. Here it may be worthwhile pointing to the fact that this tradition is broadly sociocultural or social psychological in orientation – for example the study of how games and gaming might influence learning to learn in the home (Stevens, Satwicz and McCarthy, 2008[60]), or the study of the influence of the digital on changes to play in terms of content and behaviour in school playgrounds (Willet et al., 2013[61]). These studies are the tip of the iceberg but exemplify an interest and attention to children's agency, social interactions and the constraints/performances of the social context. By paying attention to the actual activities of children's learning and playing, qualitative research helps us reconsider play and learning as a contemporary cultural phenomenon as well as pointing to interventions in the home or school. There is no suggestion that certain disciplines or research methods are inherently more worthwhile; indeed, there is a deficit in the research literature in establishing useful and policy-oriented benchmarks.

It is furthermore striking that such quantitative research that does exist is oriented towards proxy measures. We have quite a lot of evidence about children and young people's use of time (either spent playing games (Hamari, Koivisto and Sarsa, 2014[62]) or at school or doing schoolwork or digitally oriented leisure activities in the home) and space. Projects like EU Kids Online were highly influential in showing changing sites of play and learning as different kind of domestic spaces have become colonised through digital devices. Finally, there is significant international data about purchasing of play/leaning commodities and regulation of children's activities by parents – both in and out of the home. All three of these modes of description (time, space and regulation) are enormously helpful in capturing significant changes in children's agency – to move about and meet socially as well as questions of risk and opportunity. Yet, to some extent this tradition of research approaches the activities of both play and learning through inference and extrapolation. As has been emphasised in this chapter, using the measures of performance outcomes from schools cannot be taken to equate with the nature of learning itself. The value and meaning of play has even fewer accepted measures. There are clearly gaps in the international scope of such research with some countries being more intensively researched than others and standing for assumed universal norms.

Any discussion about play and learning in the digital age needs to acknowledge these kinds of biases in the research literature and to understand that accounts of children's actual play and learning tend to be expensive to commission and difficult to scale.

Summary and implications

This chapter has argued that while both the concepts of play and learning predate their expression and use in modern society, each separately and both together have become affected by changes in digital culture. Forms of play have been significantly influenced by the increasing place of the digital, especially through games, gaming and gamification in children and young people's lives and have legitimated the transformation of learning into a commodity sold back as play in the home and at school. In a parallel move, learning has become much more valued as a play-like experience and therefore the qualities of that experience, especially key elements of attention and engagement and participation, now frequently define its intrinsic worth. These are emphases significantly different from earlier uses of the terms in many countries around the world, but global transnational digital culture has to some extent evened out national variation. The current state of research has important gaps especially when it comes to understanding the commercial reach and use of both learning and play-focused apps and software. The politics of education has to some extent been reluctant to engage with the ways that learning and play have been transformed in their rather exclusive focus on narrowly defined outcomes of education.

Learning is not the binary opposite of play and this chapter has also argued that making learning not serious, or strengthening its intrinsically playful nature, has helped the commodification of learning and thus its marketability into the home and consequential datafication of learners, teachers and families. In that sense the chapter has suggested that rather than simply being a natural process of conceptual progress, the specific cultural values that now pertain to both play and learning have been part of the political economy of digital culture. It serves a particular set of interests and therefore the chapter will end with a series of questions challenging the ways that current definitions of play and learning could or should be addressed by policy, families, young people and schools.

1. What is lost and gained, if:
   a. play is interpreted as being in the service of learning?
   b. what schooling counts as learning is not constantly challenged?
2. Whose interests might be served by:
   a. conflating play with learning?
   b. broadening the reach and range of digital play as a proportion of all play?
3. How can we evaluate:
   a. the relationship between the quality of the playified learning experience and school outcomes?
   b. what counts as "good" play or "better" learning?
4. Given that the option of de-digitalising social life is not available, what can or should other institutions (schools, families, childcare, early childhood centres, kindergarten, and museums and galleries) do to ensure that the global trend to playify learning or learnify play remains varied and diverse?
5. How important is understanding the changing relationship between play and learning to the future purposes of education systems?
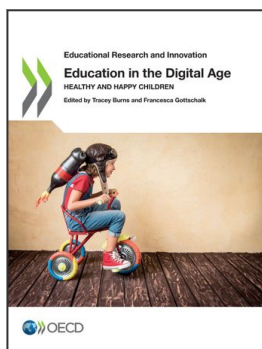
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