CHAPTER 11

THE HOME PLAY ENVIRONMENT: THE PLAY AND LEARNING IN THE EARLY YEARS (PLEY) STUDY

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Abstract

Play in the home environment is important for cognitive and socio-emotional development in early childhood. Children's home environments are made up of multiple play activities (e.g., toys, books, screen time, outdoor play) and are influenced by multiple factors (e.g., availability of resources, parenting behaviours, parental attitudes to play, socio-economic class, parents' education). This chapter will describe the relevant literature and rationale that led to the Play and Learning in Early Years (PLEY) Study, an online survey of over 300 parents of children aged 6 or under, which measured play activities at home in early childhood and the factors that influence it. The findings of this broad survey shed light on various elements of play in the home environment for young children, such as the time spent in outdoor play, reading/storytime, playing with toys or games and on-screen time, for weekdays as well as weekends. The data collected in this survey also highlight the level of play resources for young children in the home environment such as the number of children's books available, access to outdoor play equipment (e.g., bicycles, trampolines) and use of screen devices (e.g., television, tablet, smartphone, laptop). This research provides a timely snapshot of the play activities of young children today and discusses the importance of the home play environment. The findings from the PLEY Study are contextualised using a bioecological systems framework, which highlights the connection between the environment and child development.

Introduction

Play provides lots of opportunities for learning (Smith and Pellegrini, 2008, 1) as well as having developmental benefits across domains (Gleave and Cole-Hamilton, 2012, 3; Pellegrini and Smith, 1998, 577). It is the act of play itself which provides value and learning and while there are educational benefits to play, children are normally self-motivated to play. Play is creative, for example make believe play can accommodate a child's interests and imagination (Sahlberg, 2019, xvii-445). Through play, the child learns about themselves and the world they live in (Fisher et al., 2008, 306). When playing with others, children experience rich language and social interactions that are new, playful, and exhilarating (LaForett and Mendez, 2017, 910). Such is the significance of play in current society that it is regarded as a basic human right (Davey and Lundy, 2011, 3). Article 31 of the United Nations Convention on the Rights of the Child (UNICEF, 1989, 12) states that,

> "Every child has the right to rest and leisure, to engage in play and recreational activities appropriate to the age of the child and to participate freely in cultural life and the arts."

Despite this, it has been termed the forgotten right and has been reported as being the most neglected of human rights given to the child (Shakel, 2015, 48).

The role of play activities in the home is often considered in the context of the home learning environment (HLE) and the educational advantages that such activities bring. Lehrl et al. (2020, 1) note that over the last three decades, there is growing empirical evidence that the home learning environment is a predictor of academic and social development. As part of the home learning environment the home literacy environment (Senechal and LeFevre, 2002, 445) and home numeracy environment (Skwarchuck et al., 2014, 81) are also considered important. However, few researchers consider the home play environment, that is, all of the various play activities that take place in the home, how they interact, and the factors that support a rich home play environment. For children, play is not a means to an end but an end in and of itself and an important part of childhood (Sahlberg, 2019, 90). In the same way that the home environment is researched in order to support literacy or numeracy or learning, play in the home environment should also be researched as an end, in and of itself, given the importance of play to children. The Play and Learning in the Early Years (PLEY) Study

described in this chapter focuses specifically on various types of play in the home environment and the factors that influence it.

Play and Development

Even though play is a distinct behaviour and easy to identify, it is also difficult to define exactly because of its complex nature (Jenvey and Jenvey, 2002, 733). There are however a number of characteristics of play, and these include positive affect, active engagement, freedom from rules, intrinsic motivation and attention to process rather than the product (Klein et al., 2003, 38). Play can be categorised easily from non-play (e.g., attending sporting events or structured activities or schoolwork) (Jenvey and Jenvey, 2002, 735). For example, Smith and Pellegrini (2008, 2-3) categorised types of play including locomotor play, social play, object play, language and pretend play. Digital or media play has recently been included as a common play type though defining it has been challenging (Isikoglu Erdogan et al., 2019, 131).

Play is associated with desirable outcomes across multiple developmental domains in early childhood. When play is initiated by the child, it encourages curiosity and has been linked to cognitive development and later academic achievement (Elkind, 2008, 2; Fisher et al., 2008, 306). During play children use many cognitive skills such as executive functioning (e.g., when planning games, using rules in games, writing scripts and in inventing constructions) (Bergen and Fromberg, 2009, 428). A playful context (e.g., using pretend play or construction play) may aid in the development of cognitive skills in structured tasks (Schmitt et al., 2018, 183). Young children's play has also been shown to enhance literacy and print skills through their play experiences (Justice and Pullen 2003, 108; Saracho and Spodek, 2006, 707; Hoyne and Egan, 2019, 78). Additionally, play is important for creativity (Bergen and Fromberg, 2009, 428), and language development (Saracho and Spodek, 2006, 708).

As well as cognitive and language benefits, there are many benefits for socio-emotional development from play. From an early stage, games like 'peek-a-boo' help develop warm and trusting relationships aiding the development of attachment and social relationships (Howard and McInnes, 2013, 134-135). Play helps to increase confidence with peers and social competence (Yogman, 2018, 6-8). When children play freely with other children, they cooperate and learn about turn taking (Golinkoff et al., 2006, 4; Howard and McInnes, 2013, 135) and they get to both express and listen to the opinions and ideas of their peers (Fantuzzo et al., 1998, 413). Play

also allows the child to learn how to self-regulate and manage their emotions and behaviour. Children who engage in interactive play at home with parents demonstrated better prosocial behaviour in school (Fantuzzo and McWayne, 2002, 79). Outdoor play has also been found to have multiple benefits for children's developments including health and socialisation skills (McClintic and Petty, 2015, 24-28) and is one of the most common play activities that parents engaged in with their children (Bornstein and Putnick, 2012, 54).

The Home Play Environment

There are many factors that influence play in the home environment. These include parents' education, socio-economic status (SES), beliefs about the value of play, and access to play resources. Engaging in play and learning activities in the home may compensate for low parent education in academic outcomes (McCormick et al., 2020, 713). The type of play that children engage in is also shaped by their SES. The Growing Up in Ireland study (GUI), an Irish longitudinal study, found that children from households where mothers had lower education and lower incomes, usually participated in more unstructured physical play (free play) than their more advantaged peers (GUI, 2013, 3). Fogle (2006, 516) found that parents with higher education had more positive beliefs about play. The beliefs that parents have about play were also associated with their involvement in play, particularly pretend play (Haight et al., 1997, 286).

Bronfenbrenner's (1979) bioecological systems model provides a useful framework to consider the many factors that influence play in the home environment. Bronfenbrenner believed that when children play, they are influenced by both their environment and their social or cultural beliefs, which affect learning and development (Saracho and Spodek, 2006, 709). The bioecological model suggests children develop at the centre of five nested systems, the microsystem, mesosystem, exosystem, macrosystem, and chronosystem. The microsystem consists of the environments which involve the individual child and directly impact upon them, such as their crèche, school or neighbourhood. The child's home environment and the direct interactions with family and peers are part of the microsystem. The mesosystem relates to connections between the people within the child's microsystems, such as the relationships between children's parents and their peers or teachers. The exosystem describes the people and places that the child does not directly interact with, but which may still impact on their lives (e.g., a parent's job), while the macrosystem largely refers to the culture, values, and political system which the child is brought up in.

Finally, the chronosystem consists of the environmental transitions over the child's life course (e.g., from school to university), as well as the influence of socio-historical events (e.g., the invention of smartphones or living through a recession or pandemic). These events can have an impact on the child's development and their later life.

The home environment is one important microsystem in which play takes place in early childhood. Home environments differ greatly in the availability of resources such as toys, games, books, screens, and outdoor play equipment, and access to resources can impact on development. For example, having lots of picture books in the home is associated with children's improved receptive and expressive vocabulary (Payne et al., 1994, 432) as children are exposed to more unique words than in child directed speech (Montag et al., 2016, 1492). However, availability of literacy resources and reading material (e.g., books, the reading habits of the family members), as well as the frequency of library visits also vary (Lyytinnen et al., 1998, 297) and children from lower SES backgrounds may have fewer books available (Froiland et al., 2013, 756). Availability of resources and complex interactions in the microsystem (e.g., books, access to toys, and play equipment) are factors that affect the proximal processes within a child's environment (Bronfenbrenner and Morris, 2006, 815; Luo et al., 2020, 214). Proximal processes are the interactions between the child and their environment and become progressively more complex between the developing child and persons and objects in their immediate environment (e.g., riding a bike; learning to read) (Bronfenbrenner and Morris, 1994, 797).

Access to play materials and the physical environment the child lives in are linked to the frequency of play activities as well as to the type of play. Having some toys to play with is important for play as they encourage and preserve and enhance the quality of play (Trawick-Smith et al., 2015, 250; Dauch et al., 2018, 83). For example, having access to larger outdoor play space at home is associated with increased outdoor playtime in preschool-aged children (Roberts et al., 2017, 150). Similarly, access to screens, such as having a TV or games console in the children's bedroom has an impact on screen time and media consumption (Staiano et al., 2013, 40-47; Wethington et al., 2013, 573-580). Studies have also shown the increased availability of screen devices and content in recent times has led to increased screen use by families with young children under four years of age (Radesky and Christakis, 2016, 831). A rich home play environment is important for play and ideally contains multiple features that are important for play, including parents playing with their children, stimulating activities and play

materials in an environment which is familiar and safe (Bornstein and Putnick, 2012, 48-49; Dauch et al., 2018, 83; Trawick-Smith et al., 2015, 250; Pellegrini and Smith, 1998, 52).

Changes in Children's Home Play Environment

The existing literature indicates that play supports multiple aspects of child development and that play is influenced by many factors, including the play resources in the home. Over the last decade, the play environment of many homes has potentially changed with the introduction of touchscreen digital devices. Since the introduction of the iPad in 2011, research has noted an increase in the use of digital devices by younger children in the home (Kabali et al., 2015, 38-39). Rideout (2011, 17-19; 2013, 15-17) documented the differences in the use of screen devices for American toddlers from 2011 to 2013, showing the rise in touchscreen use by toddlers (10% to 38%), and the drop in TV viewing (79% to 63%). Additionally, for children aged two to eight years of age, the use of digital devices increased from 38% to 78%. By 2015, it was reported that most American children had used a touchscreen device before 12 months of age (Kabali et al., 2015, 39).

Similar to Rideout's research, children under the age of five years in Australia were reported to be spending less than 30 minutes a day on digital devices in 2011, and in a separate study in 2015, it was found that Australian children were spending an average of 79 minutes per day on digital devices (Australia, Department of Health and Ageing, 2011, 75-80; Marsh et al., 2015, 42). This is also consistent with findings in Britain, which noted that children under five years of age spend an average of 69 minutes on these devices (Lauricella et al., 2015, 14-15). In Ireland, data from the GUI study showed that three-year-old children watched an average of 112 minutes of television per day in 2011 (Egan and Murray, 2014, 25) and by the age of five years, 42% of them spent more than 2 hours per day on screen use - including movies and games as well as TV (Beatty and Egan, 2018, 19-20). Early Childhood Ireland (2016, 16) also reported that 38% of children under the age of 24 months had used a mobile device.

While children today still participate in traditional activities such as Lego and sand play, some researchers suggest time spent on screens may have increased to the exclusion of outdoor and physical play (Wood, 2013; 1-192; Albrecht and Tabone, 2017, 21-38). Other researchers have found a negative association between the amount of time spent on screen devices and the amount of time spent in physical activity (e.g., Wilkie et al. 2018, 456-460). These changes in the availability of screen devices and the

amount of time spent playing on screen devices over the last few years, raises the question of how much time children today spend in various play activities, and also what play resources, including screen devices, are available to them in their homes. The Play and Learning in the Early Years (PLEY) Study was conducted to investigate these and other questions relating to the home play environment.

The PLEY Study: Exploring the Home Play Environment

The PLEY Study used a parental-report survey design, where participants answered various questions online relating to their young children's (aged 6 years and under) home environment and cognitive and socio-emotional development. Parents with young children were recruited through primary schools and through social media platforms. The survey consisted of three sections. The first section explored the amount of engagement by children and parents in various types of play activities (e.g., time spent on play with games and toys, reading/story time, outdoor play, screen use, and how often the parent engages in play). The second section explored the social and physical factors that influence these play activities (e.g., resources available for play; parents' beliefs about playtime experiences, influences of siblings, peers and parents; and supports and barriers to play and experiences in the child's home and neighbourhood). The third section measured the children's cognitive and socio-emotional development using standardised scales.

In addition, parents also provided demographic information (age, gender, education level, current economic status, relation to the child, country they resided in, and their child's gender, age, position in the family, and if they were ever breastfed). Many of these questions were drawn directly from the Growing Up in Ireland Study (McCrory et al., 2013, 1-111; Williams et al., 2019, 1-144), previous research (e.g., Fogle and Mendez, 2006, 507-518), or were adapted from these sources or developed specifically for the PLEY survey. The measures for the complete PLEY survey are described in more detail below.

Survey Section 1: Engagement in Play Activities

Parents were asked to indicate how much time children spent in various play activities on a daily and weekly basis. In relation to daily play activities, parents were asked to estimate how much time (outside of schools, clubs, childcare, meals, sleep, etc.) the child typically spent on four broad activities (Playing with games and toys, Playing outdoors, Reading or Storytime, and

Screen use), on both an average weekday and an average weekend day. Parents were asked to indicate their response using the following categories: *'No Time', '1-30 minutes', '31-60 minutes', '61-90 minutes', '91-120 minutes', '2- 3 hours',* and *'More than 3 hours'*.

In relation to estimating the weekly frequency of various play activities parents were asked to indicate on a 6-point Likert scale how often their child engaged in various activities in the home (*'Never', 'Hardly Ever', 'Occasionally', '1 – 2 days per week', '3 – 6 days per week',* and *'Everyday*'). The list consisted of 27 specific play activities mainly related to outdoor play, reading/story time, screen use, toys and games (e.g., playing with blocks) which were largely drawn from the GUI Study (with children when they were aged 3 and aged 5 years) (McCrory et al., 2013, 44; Williams et al., 2019, 66). Additionally, parents were also asked to indicate, for the same 27 items and using the same Likert scale, how often they as parents engaged in these activities with their child. This provided a measure both of how often a child engages in a particular play activity and how often the parent engages in it with them.

Survey Section 2: Influences on Play Activities

Social Influences: Parents were asked to indicate how other people influence the types of play their children engage in, to explore if activities children engaged in were child or adult led. One question asked parents to indicate who suggested or initiated, *and* who stopped, various activities the child engaged in; *'Mostly the parent or another adult', 'Mostly the child', 'The child or parent equally',* or *'Part of the routine'*. The activities included 11 items related to play, learning, and screen use (e.g., reading or storytime, playing outdoors, watching educational TV/videos). Another question asked parents to indicate who influences their children's interests in various activities: 1) Reading 2) Special interest books, 3) Board games, 4) TV/movies, 5) Outdoor games/play and 6) Computer or screen games. Parents could tick one of the following response options for each of the six items: *'The child's own interests', 'Parents' interests', 'Siblings' interests',* or their *'Peers (school or preschool friends)', 'Neighbourhood children',* or *'Any other significant people in their lives'*.

Parental influences on play were also explored in more depth through the use of the *Parent Play Belief Scale* [PPBS] (Fogle and Mendez, 2006, 507-518). This scale examines parents' beliefs on the value of play and learning in the home and whether they value the developmental significance of play. The PPBS has thirty items on a 5-point Likert scale (ranging from *'Strongly*

disagree' to *'Strongly agree'*), which are broken into two subscales: Academic Focus (AF) (e.g., Playtime is not a high priority in my home) and Play Support (PS)(e.g., Play is a fun activity for my child). The original PPBS was reported to have high internal consistency for the PS subscale, $\alpha = 0.90$, and for the AF subscale, $\alpha = 0.73$. In the PLEY survey the PS subscale also had high internal consistency ($\alpha = 0.76$) but it was lower for the AF subscale ($\alpha = 0.44$). Parents were also asked to indicate their agreement with four other statements related to their beliefs about the benefits of play from specific activities (e.g., screen use, outdoor play).

Physical Influences: In order to examine the influence of physical resources on play, a series of questions were asked about the provision of play materials in the home and also about factors in the neighbourhood and wider environment. A number of these focused particularly on supports and barriers to play (e.g., having access to books; living in a safe neighbourhood). Participants were asked to agree or disagree with 25 statements (e.g., It is safe for my child to play outside during the day) on a 5-point Likert scale ('*Strongly Disagree', 'Disagree', 'Neither Agree or Disagree', 'Agree', 'Strongly Agree'*).

Participants were also asked specifically about the availability of books and screen devices in the home. In response to the question about how many children's books were in the home (including library books) parents could choose from one of the following options: *'0-10', '11-20', '21-30'* or *'More than 30'*. In order to assess the rate of child and home ownership of screen devices, parents were asked: "Does your child ever play with or use the following devices" (TV, computer/laptop, tablet, smartphone, handheld console, or game console), with the response options as follows: *'Yes, they have their own', 'Yes, they use a parent's or sibling's'* or *'No'*. The second question on screen use asked: "What screen device do they mostly use", which included the responses of *'Computer/Laptop', 'Tablet/Smartphone', 'TV', 'Handheld/Game Console', 'Mix of all Devices'* or *'Other'*.

Survey Section 3: Measures of Child Development

The final section of the PLEY Survey consisted of three separate scales to measure aspects of child development through parental reports. The first aspect of development measured was attention using the Attentional Focusing subscale from the *Children's Behaviour Questionnaire* (CBQ) (Rothbart et al., 2001, 1394-1408). The Attentional Focusing Scale asked parents to respond to statements about their children's reactions in 9 different situations and indicate on a 5-point Likert scale how true these

statements were of their child (e.g., has difficulty leaving a project s/he has begun), ranging from *'Extremely untrue'* to *'Extremely true'*). This 9-item subscale in the CBQ was reported to have high internal consistency, α = 0.74. In the PLEY survey, the scale had an internal consistency of $\alpha = 0.66$.

The second aspect of development measured was language, measured using the *Alberta Language and Development Questionnaire* (ALDeQ) (Paradis et al., 2010, 474-497). It measures early developmental milestones, such as current abilities in the first language, which can help assess if there is evidence of any delay or problems in the first language. These language-related questions were used in the PLEY survey to assess the child's use of language (e.g., Compared with other children of the same age, how do you think that your child expresses him/herself?) Answers were indicated on a 4-point Likert scale ('*Not very well', 'A little less well', 'The same', 'Very good/better/one of the best'*). A higher score was related to greater language and communication ability. This scale in the PLEY survey had high internal consistency, $\alpha = 0.81$.

The third aspect of development measured was socio-emotional development using The Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997, 581-586). The SDQ is a 25-item behavioural screening questionnaire designed to assess emotional health and problem behaviours. The SDQ was used in the PLEY survey to ascertain the parent's perception of the impact of any potential difficulties on the child. The questionnaire is comprised of 5 subscales: Emotional Problems, Conduct Problems, Hyperactivity, Peer Problems (these four subscales can be summed to calculate a 'Total Difficulties' score), and Prosocial Behaviour. All scales contain 5 items (e.g., considerate of other people's feelings; rather solitary, tends to play alone), which can be answered on a 3-point Likert scale, '*Not true'*, '*Somewhat true'*, and '*Certainly true'*. The SDQ is a widely used questionnaire in assessing the socio-emotional development of children aged 3-18, showing a Cronbach alpha of 0.56 in the PLEY survey.

Collecting the Survey Data

Parents with young children were recruited through 7 Irish primary schools and through social media platforms. The principals of the 7 primary schools were contacted (both face-to-face and by email) and were informed of the study via an information pack, which included a letter of recruitment, an Information Sheet, a Debriefing Sheet, and an online link to the PLEY survey. The principal could then open the online link to access the survey and use the link to share the survey, if they wished, via email or text message

to the parents of their junior and senior infant pupils. In an effort to minimise sampling bias and access a representative sample, both urban and rural primary schools were approached. The PLEY survey link was also shared across various social media platforms such as Twitter and Facebook, with parent associations, early day-care centres, and parents of young children who are active on social media.

All respondents completed the PLEY survey via on online link created on Qualtrics™ software (Qualtrics, Provo, UT, 2019). After reading the Information Sheet, and giving consent to participate, participants completed the survey. Parents completed the demographic questions first, followed by the questions about play and finally, the three measures of child development. The recruitment phase lasted five months from June through October 2019, after which the survey was closed, and the link was made invalid. The PLEY Study adhered to the ethical standards of the Psychological Society of Ireland (PSI) Code of Professional Ethics, (4.2.7; PSI, 2010), and ethical approval was granted by the Mary Immaculate Research Ethics Committee in MIC.

Survey Participants

Research participants for the PLEY Study were 313 parents of children aged 6 and under, recruited using convenience sampling. However, 37 participants only completed the demographic questions, and were therefore excluded from further analyses[1]. The final sample consisted of 276 participants (96.7% mothers; mean age = 38 years; *SD* = 4.48), of whom 231 participants completed the survey in full, with 45 further participants completing more than 50% of the survey. Most of the participants (n = 260) were from Ireland (the remaining participants included 4 parents from South Africa, 4 from the UK and Northern Ireland, 3 from the Netherlands 2 from

[1] Of the excluded sample who just completed the demographic section of the survey (n = 37), 97.1% were mothers, with their mean age being 35 (*SD* = 5.47). Their children aged from 7 months to 6 years and 11 months, with their mean age being 3.38 (*SD* = 1.85). 63.9% were female and 36.1% male, and 67.6% had siblings. The majority of these participants had a third level degree (32.4%), 16.2% had a postgraduate degree, and 10.8% held a doctorate. 40.5% had no third level education. Most of the participants worked full time (48.6%) or part-time (27%), with 18.9% looking after the family and 5.4% on leave. Age of the parent, level of education attainment, and the child's gender were the variables that significantly predicted the participants' rate of completion. Participants were somewhat more likely to complete the survey if they were aged over 35 years, with a third level degree or higher, whose child was male.

the US, and 1 from Germany). Further demographic information about the sample is provided in Table 1 below. The participants' children aged from 6 months to 6 years and 11 months (53.6% of the children were male, 80.4% had siblings, and 78% were breastfed). The mean age of children was 3.86 years (*SD* = 1.53).

Table 1. Percentages for the Participants' Demographic Variables

Demographic Variables		Percentage
Parents' Education	*No Third Level Education*	26%
	Third Level Degree	28%
	Postgraduate Degree	46%
Parents' Employment	*Full-time*	43%
	Part-time	32%
	Looking after family/on leave	25%

Preliminary Findings from the PLEY Study: Play Time and Play Resources

The findings from the survey shed light on various elements of play in the home environment and provide a timely snapshot of the amount of time young children spend in various play activities and the resources available to them.

Time Spent in Play Activities: The survey asked parents to indicate how long their child spent in each of the four following activities on an average weekday and an average weekend day: playing outdoors, reading/story time, toys and games, and using screens. The results indicated that all children engaged in these activities everyday (with the exception of screen use - 11% of children spent 0 minutes per day on screens). As Figure 1 shows, the majority of children in the sample engaged in under an hour of reading/storytime (86% weekdays; 79% weekends) or screen use per day (71%, including the 11% with no screen use; 61% weekend), and spent more than one hour playing with toys and games (72% weekdays; 82% weekends) or playing outdoors (74% weekdays; 83% weekends).

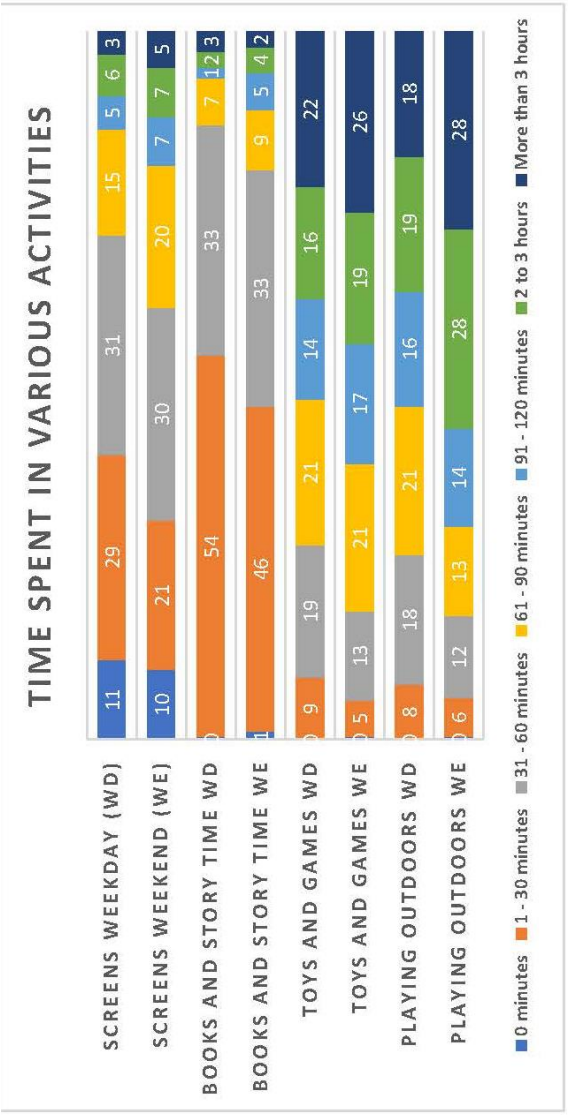

Figure 1 – Percentage of Children in Each Time Category for each Activity on a Typical Weekday and Weekend Day (n = 269)

The time spent per day in outdoor play and playing with toys and games was more varied across children, compared to screen time or storytime, and also in the amount time spent on weekdays and weekends. For example, on a weekday 26% of children spent less than an hour in outdoor play, 37% spent 1-2 hours and 37% spent over 2 hours in outdoor play. At the weekend however, only 17% spent less than an hour in outdoor play, with 26% spending 1-2 hours and 57% spending more than two hours per day in outdoor play.

Play Resources: The data collected in this survey also highlight the level of play resources for young children in the home environment such as toys and games, the number of children's books available, access to outdoor play equipment (e.g., bicycles, trampolines) and use of screen devices (e.g., tablet, smartphone, laptop). The results showed that the majority of children in the sample had good access to play resources at home, with 90% of parents reporting their home had more than 20 children's books (2% had less than 10; 8% had 10-20; 16% had 21-30; and 74% had more than 30). There was also good access to outdoor play resources with 92.4% of parents agreeing/strongly agreeing that their child had access to outdoor play equipment (e.g., trampoline, bicycle), 95.8% agreeing/strongly agreeing that their child had access to a garden, and 85.8% agreeing/strongly agreeing that there were good parks and play spaces in their neighbourhood.

Nearly all parents (99.2%) agreed/strongly agreed that there were plenty of toys, music, and pictures available in the home. Most children also had access to screen devices, with 17% owning their own screen device (12% of children owned one device and 5% of children owned more than one device). Outside of television, the device with the highest level of use was a tablet with 12% of children in the sample owning one and 37% of children using a family members. Consoles and laptops/computers were the digital devices least used by the children, with TV, tablets, and smartphones being the most accessed screen devices in the home overall (See Table 2).

Table 2. Percentage of children with access to, or ownership of, various digital devices (n = 274)

	TV	Smartphone	Tablet	Computer/ Laptop	Game Console	Handheld Console
Child uses a parent's or sibling's	81.4	44.9	37.3	19.3	4.4	2.9
Child uses their own	2.5	0.4	12.0	1.1	1.8	5.5
Does not use	16.1	54.7	50.7	79.6	93.8	91.6

Contextualising the Findings

The PLEY study set out to explore if changes in the availability of screen devices over the last few years and the amount of time spent on these devices has impacted on the time children spend in other play activities, and also what play resources, including screen devices, children have in their homes. Data for the study were collected in 2019 and encouragingly indicate that despite the presence of daily screen time for most young children, that this is not to the exclusion of other forms of play, which can be a concern for some parents, researchers and the media. Children's microsystems, incorporating the home play environment, have changed in recent years with greater access to screen devices generally, and from a younger age, with 1 in 6 children in this study owning their own device. However, this has not necessarily meant an excessive amount of screen time for the majority of young children.

Most parents reported that their young child spent less than one hour per day on screen time, with more of their playtime at home spent playing outdoors or with toys and games. Reading and story time also occurred for most children on a daily basis. While not directly comparable to previous research due to recent changes in the screen environment, and differences in way the variables were measured, these findings are broadly consistent with previous research suggesting young children spent considerable time playing outdoors and with toys (Burdette et al., 2004, 354; Vandewater et al., 2006, 918). On a positive note these findings indicate that young children in Ireland today are regularly engaging in a range of play activities. Furthermore, the findings also show that nearly all children had access to

outdoor play equipment, toys and games, at least 20 children's books and access to a screen device, which are consistent with previous research. For example, drawing on the Growing Up in Ireland data (GUI, 2013), Egan and Pope (2018, 91) found that 99% of five-year-old children had access to outdoor play equipment. Moss et al. (2019, 949) reported similarly high levels of access to outdoor play equipment in a study with Australian children.

Interestingly, in comparison to previous research on Irish children's screen use (Beatty and Egan, 2020a, 34-38), children in the PLEY Study appear to be engaging in less screen time than noted in the GUI data from 2013 (42% of children engaging in over two hours of screen time on an average weekday, compared to the 14% in the PLEY Study). However, this GUI data focused solely on five-year-old children, so age differences compared to the current sample may be a factor to consider. Additionally, the majority of the parents in the PLEY Study sample had a high level of education (recruited through a convenience sample), whereas this was not the case in the GUI Study (nationally representative sample as part of the large longitudinal study).

The findings regarding high levels of access to screen devices are consistent with research conducted in other countries, suggesting these patterns are being seen the world over, not just in Ireland, reflecting socio-historical changes in the chronosystem. In the United Kingdom, for example, Cheung et al. (2017, 46107) reported that 75% of British children under the age of 3 had daily use of a touchscreen device, while Ofcom (2018, 3) reported that 20% of three- to four-year-old children, and 47% of five- to seven-year-old children, owned a tablet or smartphone. The current findings are also similar to those reported in an Australian study conducted on children aged two to four years showing that TV and touchscreen devices were most popular among the pre-schoolers, with these devices being used between an hour and 90 minutes daily (Neumann, 2015, 347 -349).

It is important to note that access to screen devices and the amount of time spent on screens are not necessarily useful indicators of the impact of screen use on play or development, in and of themselves. For example, Beatty and Egan (2020b, 406-409) found that the type of screen activity (e.g., TV versus video games) can impact development as well. They have also argued elsewhere (Beatty and Egan, 2020c, 26-27) that other factors need to be considered too, such as the interactive nature of the screen use and the engagement of a parent during the screen time. These connections and the proximal processes between children, parents, and objects, and also between

peers and other environmental settings such as crèches or schools, are important in all types of play, including play involving screen devices.

Conclusion

The Play and Learning in the Early Years (PLEY) Study gives insight into many of the environmental interactions and influences on play. The findings discussed in this chapter provide a perspective on the amount of time spent on, and resources available, for a variety of different types of play in childhood. The bioecological model offers a useful way to consider the impact of the environment, and the relationships with others in the same environment, on the developing child, and the historical conditions and other factors that may influence the development of play. Changes in screen technology and availability over the last two decades potentially have implications for the time spent in various play activities and the resources available in the home play environment. However, the findings from the PLEY Study suggest young children in Ireland are engaging in a range of play activities and that screen-time is not the dominant form of play. While the findings from the PLEY survey answer some questions, they also raise further questions like what impact the economic status of parents in Ireland has on the provision of play resources, what percentage of households have rules about screen-time and whether fathers and mothers might differ in their responses regarding their children's play, as mostly mothers completed this survey. These, and other questions, will be the focus of future research in order to understand the complexity of influences on children's home play environments.

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