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"When I was little, I loved to play". Describing play experiences using a community-based lens

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ABSTRACT

Focused on community play memories, the goals of this project were to (1) uncover the variety and degree of playful learning memories; (2) ascertain whether community members would spontaneously share memories of play, and (3) appraise whether memories differed between low-income and mixed-income communities. Results indicated that although community members freely shared play memories, the responses differed between the two communities. Those from the lower-income neighborhood were more likely to share experiences of playful learning; these embraced multiple dimensions of development (e.g. cognitive, social, physical); describing a rarely acknowledged strength of lower-income communities. It is concluded that a community project can elicit fond memories of playful learning and the wider range of play experiences. This portrait of a playful learning community can be achieved through a fun and rich neighborhood experience. This study has implications for community engagement and supporting play as a vehicle for community learning across diverse communities.

KEYWORDS: *Play, playful learning, community, survey*

"WHEN I WAS LITTLE, I LOVED TO PLAY ..."

Imagine you are walking down the street and come face to face with a chalkboard wall with the words, "When I was little, I loved to play ..." written across the top. The ellipsis invites comment and the piece of chalk sitting in a basket below facilitates it. You write down your response. Two different communities in Philadelphia (USA), two miles apart, were invited to share this experience with the aim of exploring three questions: 1) Do community members spontaneously share memories of play?; 2) What kinds of play might they spontaneously report?; and, 3) Would different play responses emerge from two distinctive informal survey sites – one in a park frequented by a diverse clientele and one adjacent to a bus stop in a high poverty community?

Here, we explore what happens when research meets a social movement. The social movement foundational to this work is Candy Chang’s well-known ‘Before I Die’ project. Artist Chang used community-based chalkboards to elicit responses to the prompt “Before I Die ...”. Over 4,000 of these walls reside in 70 countries (Chang 2013). The success of the ‘Before I Die’ project hinged on merging individual and collective reflections on life, resulting in strangers spontaneously engaging with their community (Chang 2013). Here, we use Chang’s model of social engagement to address a child development research question, exploring play awareness around play and how community members recall engaging in playful activities.

WHY PLAY? WHAT IS PLAY?

Play is notoriously difficult to define (Hughes 2013). A recent report by the American Academy of Pediatrics (Yogman *et al.* 2018) underscores the importance of play for social-emotional, cognitive, and even brain growth. Indeed, play is practiced by monkeys, monitor lizards, some species of fish and birds, and even dart poison frogs, suggesting that play may have even have an evolutionary purpose beyond the benefits we see in humans (Burghardt 2014).

Play is often defined by the players’ intentions and desires (Gray 2017; Hassinger-Das *et al.* 2017; Vygotsky 1978; Weisberg *et al.* 2013). Common definitions of play often include synonyms of joy, imagination, and rules – acknowledging that play is fun, unique, and structure usually defined by culturally known rules. Vygotsky recognized play as a desired activity, involving imagination and structure (Vygotsky 1978). More recent definitions consider an activity playful by the degree to which it is voluntary, intrinsically motivated, includes some form of rules, and is imaginative (Gray 2017). Similar proposals have argued that play is joyful, agentic, flexible, active, and includes the suspension of reality (Hassinger-Das *et al.* 2017; Weisberg *et al.* 2013).

FIGURE 1: PLAY AS A SPECTRUM



*Here, we refer to “serious games” as outlined in Hassinger-Das *et al.*, 2017 in which the game has a learning goal.

Given the wide variation in definitions of play, Zosh *et al.* (2018) proposed that play eludes a single definition because it is more of a spectrum that ranges from free play on one end (no adult direction or support) through guided play and games (adult supported but child directed) to playful direction (adult direction and adult support with playful elements) at the opposite end (Figure 1). This conceptualization of play as a spectrum allows for the characterization of play on three dimensions: varying levels of structure (from little in the case of free play to much in the structured games that have strict rules); adult support (from little during free play to much in the scaffolding within guided play); and direction (from little in child-directed free play to much in adult-guided playful instruction). A continuum also allows for a new codification of play types as opposed to the more familiar

object play, physical play and social-dramatic play (Whitebread, *et al.* 2017). Sponseller (1974), and later Bergen (1988), also proposed a similar schema for play.

THE BENEFITS OF PLAY

There is now a considerable body of research that suggests behaviors along the spectrum of play can foster important outcomes for young children (Yogman *et al.* 2018). From the Vygotskian perspective, play is essential to development, promoting self-regulation and abstract reasoning (Vygotsky 1978). Play provides children with opportunities to experiment with abstract ideas and concepts that they may not be able to explore outside of pretence, promoting cognitive development (Vygotsky 1978). Therefore, at the most basic level, play creates a foundation of self-regulation and abstract reasoning for later development, which are two key components of social-emotional, physical, and cognitive development. Below, we briefly review the literature and highlight the most prominent benefits of play across different developmental domains (Zosh *et al.* 2018).

Research on children's executive functions (i.e. composite or higher order cognitive processes, such as working memory, cognitive flexibility, and inhibitory control; Rothlisberger, *et al.* 2012) has highlighted the cognitive benefits children accrue from playing games that exercise working memory, attention, rule switching, and recall (Blakey & Carroll 2015; Diamond *et al.* 2007; Passolunghi & Costa 2016; Rothlisberger *et al.* 2012). This includes games like Simon Says, musical chairs, hop scotch, or sociodramatic play (Carlson *et al.* 2014; Diamond *et al.* 2007; Kelly *et al.* 2011; Rothlisberger *et al.* 2012; Traverso *et al.* 2015), which encourage children to wait, switch rules, attend closely, and sustain their attention (Albertson & Shore 2009; Leong & Bodrova 2012; Shaheen 2014; Thibodeau *et al.* 2016; Toub 2012). Even board games can improve mathematics and number knowledge (Ramani & Siegler 2008; Scalise *et al.* 2017; Siegler & Ramani 2009).

Play can fuel many aspects of social-emotional development. For example, opportunities to play with peers facilitates and maintains friendships by creating a shared play culture, learning to achieve goals together, developing self-regulation skills, and learning to understand others' perspectives (Blatchford & Baines 2010; Foley 2017; Ramani 2012; Ramani & Brownell 2014). Simply having access to recess or free play during the school day has resulted in social-emotional benefits, such as fewer externalizing behaviours and fewer poor social-emotional behaviours (Veiga *et al.* 2016). Children also associate positive emotions with play (Howard *et al.* 2017). Physical activity that has rules, is social, and requires attention to detail is critical (Buck *et al.* 2008; Hillman *et al.* 2009; Sibley & Etnier, 2003). Play with rules or social interaction has greater benefits for academic success than physical activity without those properties (Best 2010).

PLAY IS CHANGING

Despite affording many benefits across cognitive, social-emotional, and physical domains, play is less prevalent today than it was in the past (Miller & Almon 2009). This decline in play is evident from the early years and is, at least in part, the result of changing political and societal priorities that emphasize the importance of children mastering core content areas (like mathematics) at the expense of

fostering general skills that prepare children to learn effectively. The decrease in play time, has been accompanied by a commensurate increase in time preparing for standardized testing (Bassok *et al.* 2016; Miller & Almon 2009). Between 1998 and 2010, there were increases in standardized testing, literacy and mathematics instruction, and a huge drop off in time given over to art, music, free play, or creative activities (Bassok *et al.* 2016). This increased emphasis on mastery learning early in development often neglects the core elements needed for mastering any topic, such as reflecting on the lesson, putting the lesson in a meaningful context, or providing an environment for the curriculum to be experienced in a joyful way – all of which play provides (Hirsh-Pasek & Golinkoff, 2011; Neuman & Dwyer, 2009). It is less clear how play and its benefits are understood in wider community-contexts, which is all the more important given the pressures on play in kindergarten. Candy Chang’s ‘Before I Die’ project (2013), anecdotally reported that community members were quick to share individual and collective reflections on life and death on a public chalkboard wall. We wondered if communities would do the same for their memories of play, affording the opportunity to better understand how the wider community values the contribution of playful learning to children’s development.

METHOD

This pilot project was designed to foster inter-generational community engagement around play and playful activities as part of the Philadelphia Playful Learning Landscapes and the LEGO Foundation PlayFutures initiatives to facilitate opportunities for play ‘in everyday spaces’ (Hassingier Das *et al.* 2018). Playful chalkboard walls were constructed in two neighborhoods in Philadelphia (USA), and community members were encouraged to respond to the prompt, “When I was little, I loved to play...” by anonymously writing on the chalkboards next to the prompt, “I played...” (Figure 2) The current study analyzed the playful responses to the prompts.

FIGURE 2: BLANK CHALKBOARD WALL AND BASKETS OF CHALK



Participants

Participants were those who passed by one of the two field sites. The participants provided responses anonymously. Members of the research team were occasionally present to clean and document the installation, but otherwise and

purposively, did not actively observe respondents writing or directly interact with them.

LOCATIONS

Playground site.

The first chalkboard was situated on a fence of a children's playground in the Fairmount Park area of Philadelphia, USA, where the median household income is \$62,721, and 18% of the population live below the poverty line. This playground serves visitors throughout the greater Philadelphia community, including preschool field trips, and is free to individual and family visitors. During the year data was collected, of the approximately 180,000 visitors to the playground. 26% lived below the poverty line (according to zip code data provided by the playground staff), and 47% were African American or Black, 43% were European American, White non-Hispanic, or Caucasian, 10% were Hispanic or Latino, 6% were Asian or Pacific Islander, with 5% self-describing as 'other'. The chalkboard wall was 8 feet high by 20 feet wide, and was installed on both the parking lot and gated playground side of a fence. During the five-week period, 227 responses were recorded. Thirty-five responses were drawings, and the remaining 192 were phrases or words. Due to the anonymous nature of data collection, demographics about the responders are unknown, however, based on research staff informal observations and conversations with park staff, respondents are likely a mixture of diverse populations of young children, young teenagers from the adjacent neighborhoods who live in walking distance to the park, as well as parents and other caregivers.

Bus stop site.

The second chalkboard was installed on the corner of an elementary school entrance and a city bus stop in the Belmont neighborhood of Philadelphia, PA where the median household income is \$17,250, and 58.4% of the population live below the poverty line. The school where the chalkboard was located has a 96.3% African American population, and 99.5% of students live 130% below the poverty line. The chalkboard was 6 feet high by 20 feet long on each side of the corner, to accommodate the height of the fence. During the five-week period, the research team captured 175 responses. Twenty responses were drawings, and 155 were phrases or words. Once more, demographics about respondents cannot be determined, and based on research staff discussion with the elementary school staff, respondents are likely a mixture of school students and teachers, as well as community members waiting at the bus stop.

PROCEDURE

Chalkboard walls.

At both locations, the black chalkboard walls featured the prompt, "When I was little, I loved to play...". On each wall, 28 lines read, "I played ..." and baskets of chalk were left on the chalkboard for respondents. Lined prompts created organization, but it was expected that responses would cover the entire wall. These chalkboard designs were based on Chang's '*Before I Die*' installations (Chang 2013), with prior approval from the artist.

Data collection.

During a five-week period, chalkboards were visited nine times by members of the research team for documentation. The responses were photographed and erased during visits. Written or drawn responses on the chalkboard walls were transcribed from the photographs when interpretable. Content that was not deemed pertinent was not transcribed, e.g. non-English or non-Spanish words, tagging, guerilla advertising, political graffiti, proper names, inappropriate content, or nonsense words.

Coding.

Coding schemes were developed (drawing on Gosso *et al.* 2007; and Smith & Lillard 2012) and two of the authors, both of whom were experienced coders, classified the responses (Table 1). The coders coded 100% of the responses transcribed from the chalkboard; coders had extremely high reliability (Kappa = 0.945) for coding the same or similar categories for each response in order to create the *play categories* variable.

Developmental dimensions.

Responses were coded for the social, cognitive, and physical development; the coders individual codes resulted in Kappas ranging from 0.958 – 1.00. An aggregate index of development was calculated. Hopscotch, for example, involves physical activity (e.g. jumping, hopping, gross motor control), the application of cognitive function (e.g. flexibility, working memory, and inhibitory control) and requires social competency (e.g. self-regulation and behavioural control, while often being played with others); hopscotch received a code of 3 in the aggregate index. Scores for this *developmental dimension* variable ranged from 0 – 3.

Cost.

Approximate *cost* that would be required to engage in the play type written on the wall was estimate to range from free (0), through small one-time investment or negligible recurring cost (1), and moderate one-time investment or small regularly occurring cost (2), to high one-time investments or moderately regularly occurring costs (3) (Table 1). The expert coders coded 100% of responses for cost of play and had high reliability of their codes (Kappa = 0.962).

TABLE 1: CLASSIFICATION OF PLAY TYPES

Category	Definition (as necessary)	Examples (as necessary)
Art		
Adventurous Work	Productive activities in the culture that are especially adventurous	Astronaut, cowboy, detective, construction worker
Animals	Animal words or animal behaviors	
Board Games	Such as typical board games and games for sale with pieces	
Building		
Daily Life	Broadly construed as typical routines of children's lives	School, house, or caretaking behaviors such as feeding, dressing, bathing, or taking to school
Digital technology		Video games, watching television
Fantasy	Actions related to nonexistent cartoon, legend, or fairy-tale characters	Dragons, princesses, Harry Potter
Identity	Namely physical, cognitive, or economical changes to one's self	
Music		
Place	Indicating pretend geographic locations	Amusement parks, tropical islands, distant lands
Play Fighting	Including threat, weapons, persecution, fight, or flight	cops and robbers, army
Playground Games	Games typically only played in a playground, gymnasium, neighborhood lot setting that are not organized sports	Foursquare, tag, wall ball, squish the lemon, kickball, dodgeball
Playground Activities	Using equipment typically only found on a playground	Slides, see-saws, monkey bars, hula hoop, jump rope
Sports	Names of organized sports	Football, volleyball
Transportation		
With other people		"with my brothers"
Work	'Productive' adult activities	Farmer, hunter, teacher
With dolls, plush toys, or action figures		

RESULTS

The frequency of responses is described below in terms of play categories, development dimensions and estimated cost/investment. Thereafter, the interactions between each are considered in exploratory analysis.

PLAY CATEGORIES

Full sample.

The majority of responses (Table 2) fell into the categories of playground games (31.1%; tag, hide & seek, red light green light), playground activities (8.3%; jump rope, playground equipment), and sports (17.1%; basketball, soccer, softball). The next most common categories were art (7.2%; painting, crafts), digital technology (6.5%; video games), and work (5.2%; hospital, restaurant).

TABLE 2: PLAY TYPES, BY STUDY SITE

Play Type	Full Sample	Bus Stop	Playground
Playground Games	31.1%	48.3%	18.1%
Sports	17.1%	19.2%	15.3%
Playground Activities	8.3%	6.4%	9.3%
Art	7.2%	3.5%	10.2%
Digital Technology	6.5%	8.1%	5.1%
Work	5.2%	2.3%	7.4%
Music	3.4%	2.9%	4.2%
Transportation	3.1%	0.6%	5.1%
Animals	2.8%	0.6%	4.6%
Board Games	2.8%	3.5%	2.3%
Fantasy	2.8%	0.6%	4.6%
Place	2.8%	0.6%	4.6%
Daily Life	2.1%	1.2%	2.8%
Building	1.3%	0.0%	2.3%
Adventurous Work	1.0%	0.0%	1.9%
With animals	1.0%	1.7%	0.5%
Play Fighting	0.5%	0.6%	0.5%
With other people	0.5%	0.0%	0.9%
Identity	0.3%	0.0%	0.5%

Research sites.

Playground games were recorded far more often at the bus stop (48.3%) than at the playground (18.1%). Playground activities and sports were mentioned in similar amounts at both locations (Table 2). Art, animals, fantasy, place, transportation and work were reported more often at the playground site. Although digital technology was mentioned more often at the bus stop (8.1%) than the playground site (5.1%), the difference was not large.

DEVELOPMENTAL DIMENSIONS

Full sample.

The majority of responses were found to facilitate social (79.3%), physical (62%) and cognitive development (94.8%). Social development was evidenced by play that was undertaken with someone else or in teams (e.g. soccer) or required practicing self-regulation or negotiating with peers (e.g. tag). Physical development was fostered by activity that required physical persistence leading to the development of gross motor skills (e.g. jump rope) or required physical exercise (e.g. basketball). Almost all responses stimulated cognitions that required switching between different rules (e.g. hopscotch), planning (e.g. tic tac toe), persistence (e.g. musical instruments), or memory (e.g. hide and seek).

When codes were summed, 58.7% of responses encapsulated a varied suite of dimensions suggesting that play was socially, cognitively, and physically stimulating (Figure 3). Just over half of responses benefitted all three dimensions of development, simultaneously requiring social interaction, physical activity, and cognitive processing (e.g. team sports).

Research sites.

The dimensions of development that play supported differed by site. At the playground, 77.7% were socially stimulating, 53.0% were physically stimulating, and 92.9% cognitively stimulating; and at the bus stop, 85.9% were socially stimulating, 72.4% were physically stimulating and 97.1% were cognitively stimulating. Overall, 48.4% of responses at the playground and 70.6% of those at the bus stop varied in ways that would enrich children's, social, physical, and cognitive growth (Figure 2).

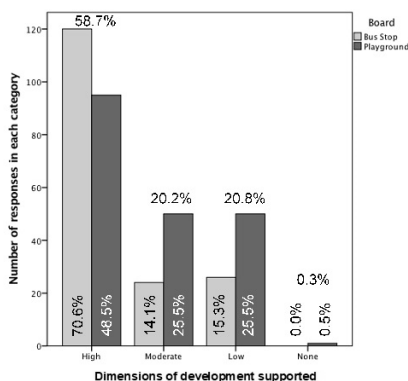
COST AND INVESTMENT

Responses were then examined in terms of the estimated cost and investment. For example, *kick the can* requires no equipment beyond a can whereas playing the cello requires a costly musical instrument and possibly regular music lessons as well.

Full sample.

The cost of play was evenly distributed across the free, low, and moderate cost categories. That is, about 29% of the responses were free, 29% were low cost, 29% were moderate cost, with the remaining 12% of responses being high cost (Table 2). Typical responses ranged from being free (e.g. kick the can, hopscotch), low cost (e.g. jacks, crayons), and moderate costs (e.g. dolls, sports) and high cost category (e.g. video games, musical instruments – although, there were few high cost activities).

FIGURE 3: DIMENSIONS OF DEVELOPMENT, BY FIELD LOCATION

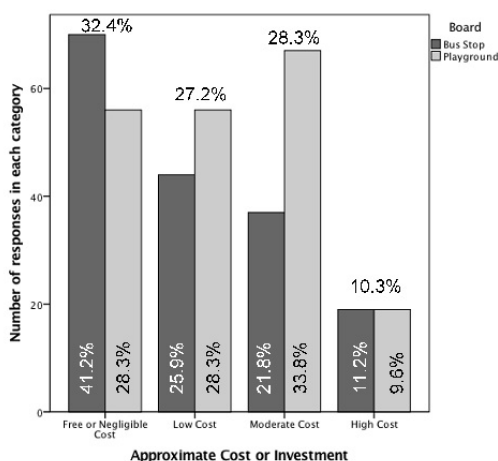


Note: Visual representation of responses for the full sample and divided by research site that have high (3 dimensions), moderate (2 dimensions), low (1 dimension), and no dimensions of development supported. Percentage for each site in the bars, percentage collapsed across all sites above bars.

Research sites.

The cost of the play differed by location (Figure 4). Whereas an even distribution across the free, low, and moderate cost activities was reported for the playground site, $X^2(2, N = 179) = 1.352, p = 0.51$; the play activities that were reported were significantly more likely to fall into the free category for the bus stop site, $X^2(2, N = 151) = 12.01, p = 0.002$. For both sites, responses were least likely to fall into the high cost category.

FIGURE 4: COST OF INTERVENTION, BY FIELD LOCATION



Note: Refer to Table 3 for explanations of cost categories

EXPLORATORY ANALYSES

Developmental dimensions by play categories.

Does play that supports more developmental dimensions tend to fall into particular play categories? Playground activities (89.2%), playground games (75.0%), and sports (98.5%) were found to highly likely to support cognitive, social and physical development concurrently.

Cost or investment of the play categories.

Does the cost of play differ by play categories? Art was evenly distributed across free, low cost, and moderate cost (Table 3); art is as likely to be free or low cost (e.g. sidewalk chalk, crayons) and moderate cost (e.g. paint, canvas). Playground activities and playground games both were judged to be both free and low cost, along with board games and place play; the bulk of playground activity and physical game responses were free (e.g. playground equipment, red light green light) or low cost (e.g. jump rope, hula hoop). Fantasy play was primarily free (e.g. play pretend) or moderate cost (e.g. ninja turtles figures). Sports were mostly moderate cost (e.g. basketball), as were animals, transportation, and work; meaning the bulk of the sports responses required some monetary investment, whether for basic equipment (e.g. hoop, ball, net), for lessons or team fees, or the costs associated with traveling games or expensive equipment (e.g. helmet, padding, skates).

Digital technology and music were high cost, representing things like video games and musical instruments.

TABLE 3: PLAY TYPES, BY COST CATEGORIES

Play Type	Cost of Play				Cases
	Free	Low Cost	Moderate	High Cost	
Playground Games	64.17%	27.50%	5.83%	2.50%	120
Fantasy	63.64%	0.00%	36.36%	0.00%	11
Board Games	45.45%	45.45%	9.09%	0.00%	11
Place	36.36%	63.64%	0.00%	0.00%	11
Art	36.36%	36.36%	27.27%	0.00%	11
Playground Activities	28.13%	59.38%	9.38%	3.13%	32
Animals	18.18%	0.00%	81.82%	0.00%	11
Sports	11.94%	17.91%	70.15%	0.00%	67
Music	7.69%	7.69%	0.00%	84.62%	13
Digital Technology	0.00%	12.00%	0.00%	88.00%	25
Transportation	0.00%	10.00%	80.00%	10.00%	10
Work	0.00%	0.00%	100.00%	0.00%	18

Notes: (1) Only categories with 10 or more responses were included in table; (2) Bold refers to cost thresholds into which more than 20% of category responses fell.

Developmental dimensions by cost.

Is play that supports more developmental dimensions more or less expensive than play that supports fewer developmental dimensions? Overall, nearly one half of the play responses that concurrently facilitated development across all developmental dimensions were free (44.7%), and the remaining were low (28.8%) or moderate cost (26.1%); in other words, the bulk of highly enriching play is affordable to the majority of children (Table 4). The responses that covered two dimensions of development (e.g. social and cognitive, or physical and social, or cognitive and developmental) were evenly distributed across cost thresholds. Responses that supported one dimension of development were mostly moderate cost (26.3%) or high cost (46.1%).

TABLE 4: NUMBER OF DEVELOPMENTAL DIMENSIONS, BY COST CATEGORIES

Number of developmental dimensions	Cost of Play				Cases
	Free	Low Cost	Moderate	High Cost	
High	44.65%	28.84%	26.05%	0.47%	76
Moderate	27.03%	33.78%	37.84%	1.35%	74
Low	13.16%	14.47%	26.32%	46.05%	215

Note: See text for definitions of 'developmental dimensions' and 'cost'.

DISCUSSION

Playful chalkboards can be used to provide insight into community play, through an adaption of Candy Chang's 'Before I Die' project. We explored community play memories in two United States neighborhoods, with contrasting socio-economic profiles. This community-based initiative sought to unpack whether community members would spontaneously share memories of play and, if so, what kinds of play would they report, and would these differ across two unique sites. Results indicated that community members did spontaneously share their memories of play, that there was diversity in their responses, and that responses differed by location. The exploratory analyses indicated that play that support multiple developmental dimensions was both prevalent and inexpensive. These results are intriguing when set against the evidence base which suggests that free play, recess, and child-directed play that fosters multiple dimensions of child development are rapidly disappearing in middle and low-income communities. Interestingly, these types of play are highly prevalent in the memories of these communities. Therefore, it is important to reflect on neighbourhood differences, the implications for creating opportunities for play, and awareness of the consequences of play for communities.

How Did People Love to Play?

Results indicate that most often people loved to play in ways that are socially, cognitively, and physically stimulating – supporting multiple dimensions of development, sometimes referred to as whole-child focused play (Hirsh-Pasek & Golinkoff 2011). These are the types of play commonly found on the playground or during recess and are easy to self-organize during the 80% of waking hours that children are not in school (Meltzoff, Kuhl, Movellan, & Sejnowski 2009). Despite well-documented benefits, this sort of play seems to be waning in modern childhood (Bassok *et al.* 2016; Brandon 2002; Bodrova *et al.* 2003; Hassinger-Das *et al.* 2017; Hirsh-Pasek *et al.* 2009; Miller & Almon 2009; Murline 2000; Steinhauer 2005; Zigler & Bishop-Josef 2004).

The Cost of Play

The exploratory analyses revealed that play that supported more dimensions of development are also the least expensive play (e.g. tag, Double Dutch). Importantly, play that fosters social-emotional, physical, and cognitive development does not require expensive equipment, just an environment that allows for or encourages social interaction, physical activity, and cognitive processing. Simply, learning that includes elements of joy, agency, flexibility, and imagination does not need to rely on costly toys (Gray 2017; Hassinger-Das *et al.* 2017; Hirsh-Pasek *et al.* 2009; Vygotsky 1978; Weisberg *et al.* 2013). In the current study, exploratory analyses indicated that the majority of play responses that support the acquisition of a range of valued outcomes were free or low cost; the high amount of inexpensive play reported in the current study is striking, at a time when expensive educational toys are aggressively marketed (Hirsh-Pasek *et al.* 2009). There is a disconnect between the play encouraged by companies currently marketing 'educational' toys and the play people wanted to share on the playful chalkboards. Notably, the overwhelming number of inexpensive and multi-

dimensional forms of play reported in the current study suggests that there are not necessarily financial barriers for children to access play that fosters multiple core dimensions of development. This finding is critical, as when we examined differences in responses between the sites serving the mixed-income and low-income communities, there was evidence that more of the responses in the low-income site, relative to the mixed-income site, were both less expensive and afforded more dimensions of development.

Call to Action: Putting Play Back in the Environment

Play responses that support multiple dimensions of development were reported with higher frequency at the low-income bus stop location rather than the higher income playground location. Although we can speculate that respondents at the lower-income site had less access to expensive play and created playful activities out of the resources they had, we do not yet know whether the members of the communities in which children live actually recognize the benefits of play. Future research should seek to understand how communities interpret the meaning and significance of play, taking cognizance of cultural differences. Specifically, we have evidenced a richer recall of play for personal development in lower income communities: this may be an underappreciated and rarely acknowledged strength of under-resourced communities. However, this benefit cannot be fully understood without knowing if the community recognizes the benefits of play or encourages play. Given the many benefits of play, how can we harness the power of community engagement to leverage the benefits of play? Ongoing work in our research group explores whether something as simple as a public chalk board can help change perceptions and increase opportunities for playful learning in everyday spaces (Grob *et al.* 2017; Schlesinger *et al.* under review).

It is critical to increase children's access to play, and opportunities for play, in a way that fosters social-emotional, physical, and cognitive development. Although learning academic content (e.g. addition and subtraction) early in development may appear as means to increase the likelihood of later academic success, young children cannot benefit from rigorous academic curricula that they are not developmentally ready to process (Brandon 2002; Hirsh-Pasek *et al.* 2009; Steinhauer 2005). Fostering the whole child, in particular simultaneously developing child's social, physical, and cognitive skills, can result in children prepared to thrive in academic environments. Play that encourages social interaction, physical activity, and cognitive processing nurtures multiple dimensions of development in ways that are not found in other childhood activities. Encouraging or simply providing room for children to create their own play worlds, experiment with abstract concepts, and develop self-regulation is key for developing children who are adaptable, critical thinkers, and are prepared to flourish in an uncertain future. Placing children in environments in which they are only exposed to academic content for long periods of time does not result in children who are eager and able to learn compared to children who take play breaks during the school day (Bjorklund & Green 1992; Bjorklund & Pellegrini 2000; Pellegrini & Bohn 2005). Providing children with educational toys that teach content are not likely to help children develop patience, attention, self-regulation, and the memory strategies that are necessary for thriving in academic and future work

environments (Blakey & Carroll 2015; Diamond *et al.* 2007; Passolunghi & Costa 2016; Rothlisberger *et al.* 2012; Traverso *et al.* 2015).

LIMITATIONS

This study had limitations. The first is that it was an anonymous study. Participants were not interviewed or directly observed, and were not asked to reveal demographic information, including their age. Although the authors have general information about the demographics of people who frequently write on the chalk boards from informal conversation with playground and school staff, this information did not come from research observations, and cannot link the ages or racial identities of respondents with their responses. Critically, this study did not capture differences by cohort. That is, we cannot speculate for example, that respondents of all ages used to jump rope, that only today's children wrote 'video games', and that only adults used to play basketball when they themselves were children. In future research, we plan to observe community members as they write on the chalkboard in order to capture more information about how community members of different ages and demographics respond to the prompt, and the content of conversations people have together in front of the playful chalkboards (Schlesinger *et al.* under review). We also do not know how many times one person responded. Those who wrote on the chalkboards were willing to respond to the prompt in a public space, and able to write or draw an image to convey their thoughts. There is no reason to believe this constrains the sample to a greater degree than other modes of undertaking research (Rosenthal 1987).

This study only captures a word or phrase about play memories, limiting the information we can glean from the responses. Other similar research – such as that which was used to develop the play type categories applied in the current study – involves more expansive research that involves asking adults to recall their nostalgic memories of play from childhood and talking through these meaningful childhood narratives that shape adult identity (Baxter 2016; Cross 2015; Gosso *et al.* 2007; Smith & Lillard 2012). Future research observing the conversations that people have at the chalkboard, or inviting people to discuss their chalkboard memories in greater detail, will help expand our understanding of people's public play memories (Schlesinger *et al.* under review).

As the responses are public, there is a possibility that spectators could have been influenced responses or that they were shaped by the 'snowball effect'. Rather than a response being completely original, it may either be influenced by or copied from an existing response, or be moulded in response to peer pressure from those standing next to the respondent. These factors could have limited the variability in responses. Additionally, with the exception of the researcher cleaning the chalkboards, and staff or community members who work near the locations regularly checking for damage, there was little monitoring. Therefore, respondents had the freedom to respond to the prompt in whatever way they wish, as well as to use the provided chalk for other purposes, e.g. to publicize community issues, play games, create artwork, or to communicate their frustrations on other matters of local importance to them. Although, only responses that addressed the prompts in some way were included in analyses, we may have included responses that were not meant to address the prompts (e.g. interpreting tic-tac-toe games as

commentary on play), or excluded responses that did address the prompt, although we did not consider that it did (e.g. because we could not interpret the handwriting). Additionally, we will have lost other responses because of wet weather, responses being erased or crossed out by other visitors, and when they was little free space on the chalkboard.

CONCLUSIONS

Two very different neighborhoods in the same United States city shared their favourite ways to play, highlighting in variability in play types experienced and the dimensions of development that were embedded within. Overall, inexpensive forms of play that enhance multiple foundational dimensions of development were prevalent. Communities varying in resources and socio-economic composition freely responded to opportunities to share their play memories. Despite the societal and political pressures to ‘close the achievement’ gap through education and saturating children’s time with structured activities, it is clear that play is an effective vehicle to enrich multiple dimensions of development. Consideration should be given to embrace and harness the opportunities this affords. Play that simultaneously stimulates social, physical, and cognitive development simply requires giving children the time and freedom to create their own play, not costly interventions, in both middle and low-income communities. We must embrace time for play that helps children be adaptable, motivated, creative, and critical thinkers who have the tools to thrive in an uncertain future.

The current study capitalized on the Playful Learning Landscapes model by placing a playful installation into two neighborhoods. The Playful Learning Landscapes theoretical model focuses on transforming the environment where families live with the goal of encouraging behavioural change. This project capitalized on the model by installing a stimulus for adults and children that the community interacted with, and may have resulted in intergenerational conversations about play. Intergenerational conversation, that is conversation between members of two generations – typically children and caregivers – is critical for fostering positive outcomes for both children and adults (Hassinger-Das *et al.* 2018). Our future research will continue to examine whether the chalkboard wall has affected behavioural change among the community, focusing on intergenerational conversations, highlighting an aspect of the Playful Learning Landscapes theoretical model missing in the current study. Additionally, attuned with the Playful Learning Landscapes theoretical model, our future research will examine how multiple installations such as the chalkboard wall combined with other installations, service neighborhood change with the overall goal of creating cities that are attuned to the needs of children and families in specific communities (Hassinger-Das *et al.* 2018).

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The authors have no conflicts of interest to disclose.

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