Creating High Quality Early Childhood Learning Centers

Introduction

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At the forefront pinnacle of national agendas around the world is Early Childhood Education (ECE).

- Why create high quality early childhood learning environments?

The reason for this is a considerable, and rarely disputed, body of evidence that consistently demonstrates that children who attend high quality early care settings benefit significantly. The most commonly cited findings are that children who are educated at very young ages are able to perform at a higher academic level, engage more appropriately with peers and authority, have a lower risk of incarceration, and have a greater chance of finishing high school and attending the university, than young children who do not receive early education (Gorley, 2011). Beyond the individual benefits, many experts have proposed that society profits from early childhood education through the reduction of poverty, greater employability and social mobility. Nonetheless, these benefits only occur when children have attended "high quality" early learning centers (Heckman, 2011).

- What are the features of a high quality early childhood learning environment?
- How are these features integrated within a high quality early childhood learning environment?

A high quality early learning environment is founded on the Building Blocks for Learning Brizard, 2016). These building blocks are the rubric for encouraging the healthy development of the child. Healthy development affords the child the opportunity to acquire knowledge and master skills to make them ready for school as well as provide them with a positive mindset for success in life. With these skills, learners can persevere independently transforming the worlds in which they live, learn, and play. To create a high quality early childhood learning environment, the foundations for the building blocks rest on:

- Leadership and teacher preparation, professional development and evaluation
- Support and guidance for effective school culture and climate
- Design and implementation of curriculum, assessments and pedagogical supports (e.g., stress reduction and self- regulation through mindfulness and contemplative practice)
- Systems of support and intervention for students (Brizzard, 2016).

Since the goal of these settings is to provide opportunities for the development of the whole child, notions about the learning environment must extend beyond the social and curricular aspects of early education. For this reason, the physical environment must be investigated (Mathews & Lippman, 2015). The premise of this paper is when programmed, planned, and designed in relationship to the building blocks for learning, the spatial design becomes, yet, another building block. As the social environment is prepared for developing effective practices for teaching and learning, the built environment must be equipped and prepared to mediate and actuate these practices. The consequences are a fully integrated learning environment. In the following sections, Brizzard's building blocks for learning will be examined as they pertain to early childhood education. From this, healthy development, school readiness, and growth mindset will be described as a means for programming strategies Early Childhood Learning Centers (ECLC). Lastly, this paper will examine Activity Settings and Break-Out Spaces, to illustrate how the spatial design can be conceptualized for ECLCs to reinforce the building blocks for learning.

The Building Blocks for Learning

The building blocks for learning as described by Brizzard (2016) are composed of five levels. For the learner to be successful in school and life, they must climb the building blocks acquiring the skills from

each level (Fig. 1). The learner starts at level 1, the foundation, which is healthy development. Moving vertically, as they master the skills they can ascend to the next level. They journey begins with healthy development to level 2, school readiness; from level 2 to level 3, mindset for self and school; level 3 to level 4, perseverance, and, finally, to level 5 is independence and sustainability. Even though skills of the different levels may occur simultaneously, prior to climbing to the next level, given that the focus of this paper is on early-childhood learning environments, the first two rows and growth mindset from level 3 will be examined.

Adapted from Brizzard, K. B. S. (2016) Building blocks for learning: A Framework for Comprehensive Student Development. Turnaround for Children.
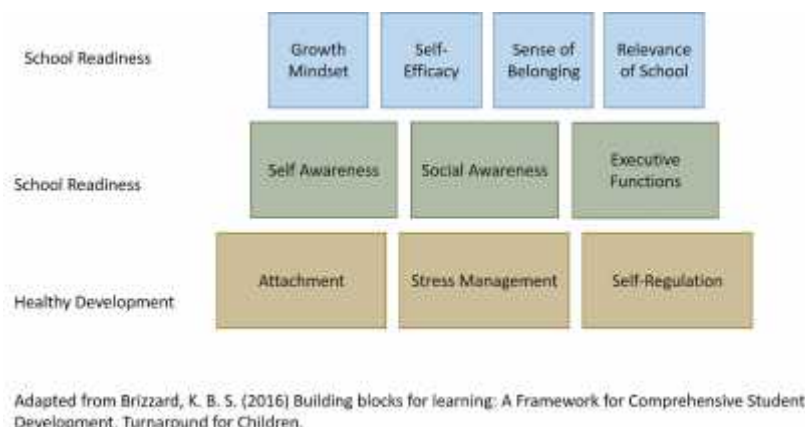
Fig. 1. Building Block for Learning

Healthy development and school readiness are essential for creating effective early learning centers. Healthy development includes attachment, stress management, and self-regulation. These are learned skills that develop when the child is situated in a supportive environment. A supportive environment entails the child having positive relationships with adults. From these experiences, the child learns to cope with and manage difficult situations. Additionally, the child learns to manage their emotions so that they can engage in tasks to accomplish goals (Brizzard, 2016).

Located just above the foundational skills is school readiness. School readiness includes self-awareness, social awareness/relationship skills and executive functions. In other words, these are the needed social-emotional and cognitive skills that contribute to the child's readiness to effectively and fully participate in school (Brizzard, 2016). With the acquisition of these skills, the child can successfully negotiate themselves within the various settings of the learning environment and co-construct knowledge with others, as they develop identities of themselves.

Although Mindset of Self and school complete Level 3 of the building blocks for learning as crafted by Brizzard (2016), these capacities may be acquired concurrently as the learner appropriates skills associated with healthy development and school readiness. The features of this row are growth mindset, self-efficacy, sense of belonging, and relevance of school (Brizzard, 2016). By developing a growth mindset, the child not only understands, but realizes that achievement is a direct result of effort and hard work (Dweck, 2015), learners can acquire a sense of conviction that they are capable of success. With the shift to a growth mindset, learners understand the relevance of school and realize that education is a pathway for achievement.

In addition, learners develop place attachment / sense of belonging. Place attachment is the emotional bond between learner and their learning environment (Low & Altman, 1992). Place attachment situates learning in context and acknowledges the reciprocal relationship that occurs between behavior and experiences (Lippman, 2010). Embedded in a specific time and place, the transformations of the learners' result from their transactions with their learning environments (Lippman, 2013). Hence, learners are shaped by their experiences, and, their experiences, in turn, impact them.

From Building Blocks of Learning to Programming Early Childhood Learning Centers

Describing a Supportive Environment for Healthy Development

Supportive environments for infants, toddlers, and young children lead to their healthy development. Healthy development results from the personal attachments that children make within their immediate social environment. These attachments shape and influence their behaviors and motivations. Since behaviors are a result of the child's reaction to external and internal stimuli, a supportive environment begins with attentive caregivers. Furthermore, caregivers model the desired behavior as well as are responsible for understanding the children with whom they teach (Arndt, 2012). With the knowledge that they acquire about the children, they can identify the reasons why the child transacts in particular ways, and work with her/her to realize why s/he transacts with others in specific ways and situations.

Furthermore, the caregiver(s) is the person(s) with whom the child can turn to in times of need. When assistance is needed and given, children are being transformed from their transactions. These transactions shape their development and sense of attachment with their caregivers (Arndt, 2012). Positive transactions with attentive caregivers can lead to the child feeling safe and secure. Hence, creating stable and dependable attachments affords the child capacity to develop positive relationships with others.

Fig. 2. Bold Park Community School, Perth, Australia (Photographer; Peter C. Lippman)

Given this, learners who have developed stable attachments are best able to explore independently, identify potential stressful situations, and, by building on past experiences, determine how to resolve them. Therefore, a supportive environment affords the child opportunities, the confidence to take risks and learn resiliency. For healthy development, the physical features of supportive learning environments may include clear site lines through the spaces, areas of prospect and refuge, areas that the child can shape to feel safe and secure (Fig. 2), classrooms, and spaces, within as well as outside classrooms where the child can meet with caregivers to work through stressful situations (Lippman, 2010).

Preparing the Environment for School Readiness: Self-awareness, Social awareness and executive functions

Healthy development is dependent on a supportive social environment. Building on this notion, a

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supportive environment is also essential for school readiness. School readiness entails that the child develops an identity / self-awareness. It also entails learning how to share and negotiate with others so that they may acquire higher order executive functions such as concept development, hypotheses testing, and problem solving (Williams, Huang, & Bargh, 2009). Furthermore, appropriating an identify is on-going; for, Identity is the result of the individuals' experiences in their social and physical environments. These experiences of working with others, sharing thoughts, and mastering skills transforms the child (Lippman, 2010; Lippman, 2006; Wenger, 1998).

While each child is developing an identity of himself or herself, they are also recognizing, the emerging identities of their peers. The recognition of others having identities is social awareness. Social awareness results from knowledge acquisition which is co-constructed. Hence, knowledge is a human product, which is socially and culturally constructed (Ernest, 1999; Gredler, 1997; Prawat & Floden, 1994). Knowledge acquisition, learning, is socially constructed, does not take place only within an individual, nor is it passive (McMahon, 1997), but rather occurs when individuals are engaged in social activities.

Fig. 3. Eni Nido, ZPZ Architects, (Photographer: ZPZ Architects)

To engage learners, the environment must be structured, or as Montessori termed prepared, to support these social activities. Within the prepared environment the child feels well emotionally and is not distracted. To do this, these places are provided with distinct learning zones that clearly inform the learners of the activities and actions which can occur (Lippman, 2010). Furthermore, in these learning zones, the resources, tools, and materials are visibly categorized, clearly labeled, and easily available. Hence, a successful learning environment must be structured with defined learning zones and classification systems (Fig. 3).

Growth Mindset and Place identity

School Readiness results from an active learning environment (Lave & Wenger, 1991). Not only does an active learning environment provide opportunities for learners to engage in meaningful activities from which identities emerge, but these places also support a growth mindset. A growth mindset is a perspective that grounds learning in activity–actions, goals, and motivations. Within a growth mindset learning environment, the view is that all situations are viewed as learning opportunities and intelligence can be developed from hard work (Dweck, 2015). Accepting that hard work leads development is a shift in how learning is conceived. Learning is transactional and transformative (Lippman, 2013). Hence, a learning environment that is viewed as transactional realizes that the child influences his/her social and physical environments, and these environments, in turn, also shape them.

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Building on these notions, creating an activity based learning environment is paramount for affording these transformations. Additionally, in these settings learners are connected by social activities which can bring about a shared set of ideas about place. This shared set of ideas about place may be described as place-identity. Furthermore, place-identity is the individual's incorporation of place into the larger concept of self (Proshansky, Fabian & Kamonoff, 1983). Therefore, the child learns to see themselves distinct from, yet related to the built environment. Place-identities are rooted in the experiences they have in the built environment working with the resources, tools, and materials that define the learning areas (Fig. 4). Hence, positive experiences result from transactions in a setting where the child has been able to work through the tasks-at-hand (Lippman, 2010).

Fig. 4. Experimentation

From Programming to Planning Early Childhood Learning Centers

As indicated, entwined with the building blocks of learning is situated learning theory. This perspective stresses the relevance of where, when, and how opportunities take place for learners (Brown, Collins, & Duguid, 1989; Greeno, Collins & Resnick, 1996; Putnam & Borko, 20000). According to Putnam and Borko (2000), situated learning theory recognizes that:

- cognition is situated in social and physical contexts.
- cognitive development occurs as a result of the shared negotiations and shared cognitions with others in the built environment.

Additionally, this perspective acknowledges that learning is embedded within the physical environment. To provide authentic and optimal learning experiences for the child, the built environment must be planned to engage learners (Brown et al., 1999). Situated learning theory acknowledges that the transformations that take place are not arbitrary, but occur within purposefully designed settings. This is why, the built environment must be thoughtfully, responsibly, and appropriately crafted (Lippman, 2015). Although there is limited research as to how to design learning environments that support the building blocks for learning, Tharp and Gallimore (1997) offer the concept of activity settings.

Activity Settings

The spatial design of Early Childhood Learning Centers (ECLC) should be grounded in research on the built environment and its relationship to the building blocks of learning. The concept of activity settings and breakout spaces, are being presented as researched salient features of the built environment which supports learning, the learner, and the things to be learned. In this paper, the distinct and differentiated learning areas of the classroom are described as "Activity Settings", whereas the fixed spaces located outside of or adjacent to classrooms, as "Break-Out Spaces". Both Activity Settings and Break-Out Spaces are learning zones that should be planned to afford independent, one-to-one, or small social groupings of children who can work inside or outside of the classroom room

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(Lippman, 2015; Mathews and Lippman, 2015). Activity settings are features within a classroom that affords healthy development, school readiness, and a growth mindset; for these learning zones in the classroom:

- provide access to peers of equal greater or lesser skill;
- have influence over the sorts of [transactions], verbal and otherwise, that occur in the daily routine of the child;
- afford learners to actively explore the allowable range of activities permitted in the settings;
- support opportunities to create and redesign their activities and respond to their self-generated changes;
- encourage low levels of adult direction and monitoring and provide considerable latitude in what children do and how they do it (Tharp & Gallimore, 1997, p. 182).

In the educational realm, the Activity Settings of an ECLC classroom commonly include block, reading, writing, math, science and creative play areas. In order to differentiate the various learning areas, the following proven strategies may be used:

- built-in cabinetry to identify specific learning areas, i.e. block corner and/or a reading corner with accessible and relevant materials;
- a water trough to define an art area;
- pin boards and vertical writing surfaces, i.e. chalk boards and/or white boards which may be used on different wall locations in the rooms allowing learners to display their work reinforcing their self-awareness.
- sliding cavity doors between spaces that can connect and disconnect learning zones.
- moveable tables, chairs, and soft seating can be used to further define the areas within and between the corner settings encouraging them to develop self and social awareness (Fig. 5).

Fig. 5. Early Learning Center, Holy Cross College, Perth, Australia (Photographer: Acorn Photo)

Finally, activity settings must be organized to afford the spaces-in-between where learners can view what others are doing peripherally. From the periphery. The space between activity setting, the child can decide whether to become directly and/or fully engaged in another activity (Lippman, 2015).

Fig. 6. Early Learning Center, Holy Cross College, Perth, Australia (Photographer: Acorn Photo)

Based on conversations with teachers who work at Holy Cross College in Perth, Australia in classrooms that have been designed with these salient features, they feel that the spaces provided the appropriate cues which allowed them to take immediate ownership and organize their settings. Additionally, while spaces were highly differentiated, the building is a place learning flows, is fluid, and is flexible (Fig. 6). For example, utilizing cavity sliding doors rather than folding walls, between classrooms afforded multiple benefits:

- Although cavity sliding doors might be considered difficult to manipulate due to their weight, when closed these features provide the added benefit of sound isolation that can significantly improve the acoustic conditions within the classroom.
- Whether the doors are opening or closed, the walls that conceal the doors, the corner activity settings are always maintained;
- corners provide refuge, opportunities for cooperative group work, as well as additional opportunities for independent tasks (Lippman, 2013).
- Children have been observed using these corner Activity Settings, and appear focused on the tasks at hand, as well as can view and hear what is going on around them.
- These Activity Settings are learning zones which are created by the teachers and students. Depending on the class needs these areas can be transformed. Such flexibility allows teachers and students to take ownership of their classrooms.
- Another benefit of the sliding doors is that teachers can spontaneously choose, at any time, to connect classrooms and extend learning to the Break-Out Spaces (Mathews & Lippman, 2015).

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Break-Out Spaces

Break-Out Spaces are defined learning areas outside of or adjacent to the classrooms. Although not studied extensively, the use of Break-Out spaces can be viewed as key features of a supportive learning environment, because it can promote improved student learning and well-being by: 1) informing learners of where and what particular transactions are suitable in these areas 2) reifying the notion that learning is not confined to a space, but rather can extend beyond the walls of the classroom and 3) affording additional classroom space flexibility for teachers and students. Break-Out Spaces can be particularly useful design elements. Depending on the size of the space, they are classified either as Break-Out Rooms, Hollows, Niches and Nodes (PEHKA, 2012) which are each defined below.

Break-Out Rooms: These are semi-private small meeting or project rooms. These spaces vary in size depending on the needs of the ECLC. These rooms are generally planned to facilitate independent, one-to-one and cooperative groupings. Most importantly, these learning zones enable learners to separate themselves from the larger class and focus on the specific task-at-hand. Break-Out Rooms are fully enclosed spaces which may be located within the classrooms or outside and attached to classrooms.

Break-Out Niches: Break-Out Niches are semi-public learning areas that are designed to provide opportunities for formal and informal interchanges.   A Break-Out Niche may be recesses/alcoves/corners in and/or next to walls outside of classrooms or along corridors. Niches differ from the Break-Out Room because they may be carved out spaces in walls or are fixed cabinetry. For example, a hallway may have a hollowed out area, similar to a cave, that includes chairs and table or this could be wooden hut with chairs and a table. These features extend learning opportunities beyond the classroom. Within these differentiated learning areas, the child can work independently as well as in a small group. Furthermore, these spaces provide opportunities for a few small social groupings to work concurrently on tasks adjacent to one another (PEHKA, 2012).

Additional distinct learning zone of the Break-Out space may be accomplished with **Break-Out Hollows** (PEHKA, 2012). These areas can be designed into an existing niche. For example, a Break-Out Hollow can be a learning zone built into cabinetry, such as a seat, or a small opening in a wall or cabinet. Generally, given their small size, Break-Out Hollows support independent work (Fig. 7).

Fig. 6. Early Learning Center, Holy Cross College, Perth, Australia
(Photographer: Acorn Photo)

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Break-Out Nodes: Break-Out Nodes are the most salient feature of the school setting around which breakout rooms, niches, and hollows may be organized (Lippman, 2013) These are public areas located as the heart of the ECLC. This type of space promotes opportunities for independent, one-to-one, small group and large group transaction that can occur alongside one another (Fig. 8). This learning zone is unique, because it must be planned to support formal gatherings of more than one class as well as encourage informal get-togethers to occur. For example, the nodes might be designed as a sunken floor under a set of stairs or grand staircase /amphitheater (Mathews and Lippman, 2015).

Fig. 8. Early Learning Center, Holy Cross College, Perth, Australia (Photographer: Acorn Photo)

Perhaps most importantly, the inclusion of the Break-Out spaces, as discussed with teachers at Holy Cross College in Perth, Australia and Gateway Schools in New York City, aid in the effective control of environmental chaos and can reduce ambient noise levels, both of which have been noted to negatively impact student learning. These places can reduce crowding levels by providing additional learning zones. Although students may be set apart from the main activity occurring in the classroom, they can still be involved in the activity. For example, spaces with glass within walls and doors allow for the necessary site lines for visual contact between students and teachers. This in turn affords teachers greater flexibility as they can support independent and small group work, enhancing student freedom as they work through the task-at-hand, while still providing visual surveillance over these learning areas. Furthermore, anxiety levels in very young students can often be mitigated by enabling children with a learning setting where they can easily "check in" visually with their teachers (Mathews and Lippman, 2015). Lastly, students can use Break-Out spaces as a shelter from unwanted external stimulus (Lippman 1995). Thus, providing learners with a secure setting for needed refuge in order to counteract the effects of stress during the school day.

Lastly, the use of defined Activity Settings encourages learners to move about the space and to become either independently engaged in a learning opportunity or to collaborate with others. An important distinction in the purpose of Activity Settings and Break-Out Spaces is that Activity Settings are choreographed to encourage movement, whereas Break-Out Spaces are often planned to disrupt movement and contain learning to enclosed areas. The reason for this is to allow for enhanced focus on the task-at-hand. In addition, the Break-Out Space often installed outside of classrooms or in school hallways offers the benefit of a "stimulus shelter"-places of respite where learners may become engaged independently with work, or simply relax. Both types of spatial arrangements create needed differentiation of the classroom space and can ameliorate many of the negative effects of excessive noise and crowding.

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Conclusion

Over the century, there has been a great deal of investigation into what makes a "high quality" early childhood learning center. Consequently, many policies and legal mandates are based on these findings. To date, the majority of research and subsequent policy is related to social and curricular aspects of education. To achieve this, quality centers typically have highly trained, professional teachers, low teacher: student ratios, high parent involvement, consistent daily schedules of attendance and a developmentally appropriate curriculum that centers on the needs of the learners (Slot, Leseman, Verhagen, & Mulder, 2015). Essentially, high quality ECLCs integrate the building blocks for learning, because these elements, healthy development, school readiness and growth mindset, are crucial to the preschool education. Underpinning the building blocks, I have argued that an important aspect of the ECLC, which has been long neglected, is the built environment.

In order for the design to have a positive impact on the learner, Activity Settings and Break-Out Spaces must be designed as integrated places within the ECLC. Understanding how these elements may be integrated in the built is essential for crafting these activities based learning environments; for, these are learning zones that must support the diverse ways that children transact with one another. In addition to providing a variety of developmentally appropriate Activity Settings, the classroom space as a whole must afford opportunities for large group meetings, small group work, and independent learning. While Activity Settings may be viewed as separate learning areas, these areas which define a specific activity also create the spaces-in-between (Lippman, 2015). These spaces-in-between allow learners to seamlessly transition from one task to another as they can travel from their initial setting to another and/or simply stop to inspect the actions of others. By doing this, the child can appropriate knowledge without disrupting the flow of the transactions taking place and watch the identities of the peers emerge.

Ironically, Montessori and Reggio Emelia Schools recognize the value of the built environment for the learner and the learning environment. As indicated, Montessori understood the built environment as being prepared where everything has a place, while Reggio Emelia understood the physical setting as the Third Teacher (Lippman, 2010). Regrettably, even with this awareness, the way the built environment is designed is not part of the framework of the building blocks for learning. Furthermore, designers must continually validate the reason why the built environment is central to learning. If the built environment is going be considered a building block for learning, as this paper highlights, the design must be based on research and evidence. In the case of an early childhood learning center, this means researching further the concepts of healthy development, school readiness, and growth mindset. It also means gaining an understanding of what actually occurs in an ECLC, which are the transactions which take place routinely. To do this means embracing a responsive design approach (Lippman, 2010). The challenge for the design professional is to make this paradigm shift which can provide them with true knowledge about the spatial designs for ECLCs, rather than what is deemed *best practice.* Given this, how can you make this paradigm shift for creating places that are always and in all ways supportive of the learner, the learning, and the learning environment?

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Biography:

For the last 25 years, **Peter C. Lippman Assoc. AIA, REFP** has been researching, writing about, designing and creating activity-based learning environments for the future. His work is fuelled by a desire to create places that are responsive to the needs of its users and encourage knowledge acquisition and life-long learning. Peter's approach is unique to the practice of architecture. Grounded in the research, Peter applies social science research methodologies to the programming, planning, and design of learning environments. Peter's research background enables insight to trends in educational principles that reaches beyond the normative theories presupposed by contemporaries. This approach supports the creation of dynamic places where the physical environment is understood as a vehicle of the transformative work of teaching and learning.