
Building Blocks of Emotional Learning Through Building Responses to Life Events

Angela Kong

Stanford University

akonog2@stanford.edu

Laura Mediorreal

Stanford University

laura97@stanford.edu

Ryan Foulke

Stanford University

rfoutke@stanford.edu

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the owner/author(s).

CHI'19 Extended Abstracts, May 4-9, 2019, Glasgow,
Scotland, UK.

© 2019 Copyright is held by the author/owner(s).

ABSTRACT

Understanding the relationship between life occurrences and emotional responses is a challenge for everyone. By building solutions to emotional issues, young learners can learn to adequately respond to life events and understand the emotional reactions of others. To address this challenge, we propose Building Blocks of Life: a collaborative conversation tool in which children aged 7-8 design and construct Lego objects in response to the life events of a role-playing character represented by an adult. Learner draws random life event cards, which contain building objectives to help the learner create lego objects that could help a character deal with the event. After each creation, the adult, who is assuming the role of the character, will use emotion pieces to draw an emotion face in response to the learner's creation. The adult can discuss with the learner why the character may feel a particular emotion in response to the Lego object. We present a constructivist experience where the learner can reflect on their actions and the character's emotional responses to help them understand emotional responses. The goal is to help learners associate their objects to possible real-life solutions and these solutions to other's emotional reactions. Meanwhile, adults will be able to easily facilitate emotional communication by using this tool.

KEYWORDS

Coping Mechanisms; Constructivism; Socio-Emotional Learning

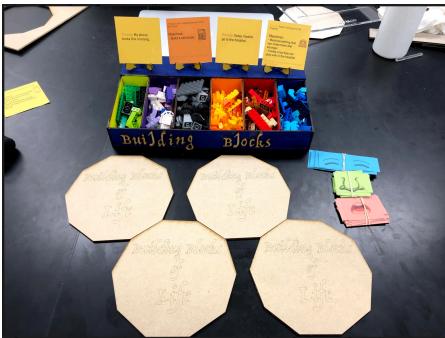


Figure 1. One-dimensional representation of emotional events pieces divided by emotional category.



Figure 2. Emotional Learning Toolkit that will be used by adults.

INTRODUCTION

In recent years, research has highlighted the importance of emotional competence for children [7]. Despite an influx of social emphasis on emotional learning and mental health today, young children in the U.S. have a limited emotional vocabulary and express difficulty with engaging in healthy responses to emotional situations [2, 7]. We seek to address this with *Building Blocks of Life*: a collaborative learning experience that enables children to address life's events and allows specialized adults to facilitate emotional conversations with children. Through the use of action prompts and emotion pieces, kids associate their contributions to helping another person to the emotional reaction of that person. Empowering kids with the skills to understand reactions and talk about emotions with adults allows them to react in a healthy form to both positive and negative events in life. This is an opportunity to experiment with building solutions and understanding reactions that they could face in real-life.

BACKGROUND

Building Blocks of Life provides an environment where children ages 7-8 can safely learn how to assess and respond to events in their environment. It is a tool between a learner and a trusted adult where the adult assumes the "character" in a storyline. The story is formed by that learner drawing a series of event cards. In response to each event, the other learner will construct appropriate responses to the event using Lego pieces. After the learner creates a response, he or she will present it to the adult who is assuming the role of a character. The adult will change the emotion pieces to show how the character could feel in response to the learner's creation.

In designing our tool, we were influenced by several previous research focused on the long-term effects of emotional awareness on an individuals' life. Hotulainen and Lappalainen note that the socio-emotional behavior of children in pre-school had long term effects on how participants viewed themselves and shared their emotions in adulthood [2]. Additionally, research shows that young children are more likely to initiate and sustain friendships when they are exposed to situations that emphasize reciprocity, cooperation, and play [7]. Through emphasizing inter-player communication, Building Blocks of Life provides an environment where kids use action prompts to build concrete solutions and see responses to their solutions. This allows them to distinguish emotional events, determine the causes of emotions and regulate these emotions through social interaction which will illustrate emotional competence [4].

In addition, by bringing attention to a situation which affects someone's affective state, children can learn to model and positively react to unforeseen challenges [3]. Building Blocks of Life seeks to provide both structure and creativity for learners while allowing adults to engage in emotional conversations that can be fun. While the events in the tool are curated based of situations young learners actually encounter, the Lego creations to make the character feel better are entirely

left to the learner. Furthermore, the character responses to the learner's creation are based on the adult's decision which may instigate powerful conversations about emotional responses and feelings. For example, an event that the learner draws the life event "Sunny lost his dog," he may create a stuffed animal out of Legos to make Jorge feel better. Consequently, the adult may use the emotional figures to create a smile or frown face representing Sunny's emotional response to the learner's stuffed animal.

Finally, learners can experiment with constructing different solutions to life's events and see how their creation affects a character. This will allow the learner to understand the effects of their actions as well as learn how to react positively in response to certain emotions. According to Papert, the constructionist models allow children to physically see their problem-solving processes more clearly [5]. By using Legos blocks, children will be able to design solutions to life events in a form that will encourage them to explore their emotional behaviors underlying their constructions [6]. The character's emotional pieces, managed by the adult, will also increase their opportunity to engage in social interactions as a means to practice their response strategies to other's feelings [7].

Furthermore, exposure to real life events and feelings can normalize negative emotions (sadness, depression,

loneliness, etc.) that are stigmatized among kids, the prompts will better equip mature discussion among peers in the future [2,1]. By providing a structured and safe environment for kids to engage with life events, Building Blocks of Life fosters constructivist-learning experiences that could help children develop greater emotional awareness and healthy responses to life.

DESIGN PROCESS

Our two main technological tools are the box of life prompts/objectives and the emotional learning toolkit. Below, we expand upon their purpose, relevance, and design process:

Developing Life Prompts

In developing life prompts, we chose events that are commonly experienced by 7-8 year old learners, ranging across a spectrum from the more negative such as "Today I lost my dog" or "I don't understand math and I feel dumb" to the more positive such as "I got into my school play" or "I am turning eight and am hosting my first birthday party!" While we initially only included negative events so learners could practice developing healthy and positive responses, we decided to include events across a spectrum to create a more accurate sample size of the average learner's life.

Creating Prompt Objectives

In response to the life prompts, learners then use Lego blocks to build an appropriate response with the goal of either helping the character feel better or celebrate their success positively. On the back of each life event card, we provide structured objectives that learners can opt in to use if they are unsure of what to build. For example, if character Nicole has a Life Event such as "I lost my phone today," the objectives include: "Build *your* phone that you can lend to Nicole to call her parents to pick her up" or "Build something of your imagination to replace her phone." Both of these provide examples of what the kid can start building, serving as a form of glass-box scaffolding. Eventually, we hope the student will not need to look at the objectives, since the act of coming up with a response to unforeseen life events is an important skill we hope to develop in our game.

Giving Emotional Figures to enable communication

We created characters across a diverse spectrum of race, background, and interests, so learners who do not feel comfortable disclosing personal events may use these character cards as prompts to enable communication. In designing each character's portraits, we intentionally chose diverse characteristics across a wide array of learners, so that the learner will come across at least one who is different than themselves in order to further develop theory of mind – the concept that other people's perspectives, beliefs, and feelings may be different than one's own. For example, if the character Elif draws a life prompt such as "I am struggling with math and feel dumb," the learner is

encouraged to remember that Elif has recently moved to the United States from Egypt, and Elif's needs may be different than the learner. The empathetic learner may use the Lego blocks to create a Muslim tutor wearing a hijab for Elif to feel a sense of belonging or more comfortable with her identity in a Western world. Our hope is that the emotional figures will provide a safe space for learners to exercise empathy and learn how to respond healthily to events that happen in real life. We also provide blank character cards so that students, as they become more comfortable with sharing and responding to life events, can project their own lives on the cards.

Emotional Learning Toolkit

Finally, after the learner builds a response using Lego blocks, the trusted adult will use the emotional learning toolkit to rearrange the character's face in response to what the learner has built. Our emotional learning toolkit consists of different arrangements of eyes, noses, and mouths that the trusted adult should mix and match. Possible responses may include: feeling touched, happy, amused, confused, grateful, pleased, relieved, etc. Since our learning goal is to help learners build *healthy and helpful* responses to emotional events in life, the emotional learning toolkit is an important tool to

foster communication between learners and trusted adults on what may constitute a healthy and productive response.

FUTURE WORK

In the future, we would like to create greater depth in the type of life events that can be drawn in the game that is personalized on the cultural context and age group of the learner. In addition, we want to develop other forms of creating that is not only based on Legos but other forms of buildings, such as painting, drawing, or digital connection to apps such as Osmos. Finally, we intend to create an even tighter coupling between character descriptions and life prompts.

CONLUSION

Building Blocks of Life addresses the lack of social-emotional learning in the education of youth and allows kids to develop their ability to cope, handle, and process emotional events that may happen in their lives or in the lives of the people around them. The use of life event prompts, role playing adults and emotion pieces creates a fun and constructive environment where learners are able to reflect on empathy and emotional responses. This tool allows adults to communicate and teach the learner about emotions and empathy without the learner associating Building Blocks of Life as a burdensome task but a game instead. Learners will be able to differentiate how peers react to their help as well as understand healthy ways to handle a spectrum of positive and negative events. From the perspective of the learner, Building Blocks of Life is just a fun game, however, it is a learning experience that will equip them with the tools to approach life challenges within their own lives and in the lives of all of those around them in a healthy form.

AKNOWLEDGEMENTS

We would like to thank Jenny Han, Jocab Wolf, and Veronica Lin and Wayne Grant for their support.

REFERENCES

- [1] Joo Ann A. Abe and Carroll E. Izard. 1999. The Developmental Functions of Emotions: An Analysis in Terms of Differential Emotions Theory. *Cognition & Emotion* 13, no. 5, 523–49. DOI:<https://doi.org/10.1080/02699399379177>
- [2] Risto Hotulainen, and Kristiina Lappalainen. 2011. Pre-School Socio-Emotional Behaviour and Its Correlation to Self-Perceptions and Strengths of Young Adults. *Emotional & Behavioural Difficulties* 16, no. 4, 2011, 365–378. DOI: <https://doi.org/10.1080/13632752.2011.616342>
- [3] Gail E. Joseph and Phillip S. Strain. 2003. Enhancing Emotional Vocabulary in Young Children. *Young Exceptional Children* 6, no. 4, 2003, 18–26. DOI: <https://doi.org/10.1177/109625060300600403>
- [4] Paul C Maccabe, Michelle Altamura, Kimberly E Ward, and Barbara A. Rothlisberg. 2011. "Empirically Valid Strategies to Improve Social and Emotional Competence of Preschool Children." *Preschool Assessment and Intervention*, no. 5, 2011, 513–540. DOI:<https://doi.org/10.1002/pits.20570>

- [5] Seymour Papert. 2000. What's the Big Idea? Toward a Pedagogy of Idea Power. *IBM Systems Journal* 39, no. 3–4, 2000, 720–29. DOI: <https://doi.org/10.1147/sj.393.0720>
- [6] Mitchel Resnick and Brian Silverman. 2005. Some reflections on designing construction kits for kids. In Proceedings of the 2005 conference on Interaction design and children (IDC '05). ACM, New York, NY, USA, 117-122. DOI:
<http://dx.doi.org/10.1145/1109540.1109556>
- [7] Betsy L. Schultz, Rita Coombs Richardson, Catherine R. Barber, and Daryl Wilcox. 2011. A Preschool Pilot Study of Connecting with Others: Lessons for Teaching Social and Emotional Competence. *Early Childhood Education Journal*, 2011, 143-148. DOI:
<https://doi.org/10.1007/s10643-011-0450-4>