



# Research on the Effectiveness of Clymb: An Emotional Wellness Software for School-Age Children



## **Emotional Intelligence and Social-Emotional Learning**

Emotional intelligence (EI) is the ability to identify and manage emotions. Social-Emotional Learning (SEL) is the process through which children acquire EI, develop empathy for others and gain problem solving skills. SEL can be broken down into five core competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. SEL and EI are correlated with many signs of success for youth, including high grades, optimism, positive behavior, strong coping skills, and decreased substance abuse (Taylor et al. 2017). Oberle and Schonert-Reichl (2017) found that 83% of students who participated in explicit SEL programs demonstrated improved academic performance, with Durlak et al. (2011) finding an 11% increase in grades.

SEL also has a notable economic impact. For every dollar spent on evidence-based SEL interventions, an average of \$11 dollars are returned to the United States economy (Belfield et al. 2015). According to Rikoon et al. (2016), this return is seen through factors like increased labor market activity and decreases in the state's criminal justice system costs. Although SEL programs can be effective at different ages, Taylor et al. (2017) found that when children start SEL interventions at a young age there are greater long-lasting effects. Fostering long-term effects of SEL is particularly important because effective social-emotional learning programs can be a factor in narrowing the achievement gap between affluent students and their economically-disadvantaged peers (Rikoon et al., 2016). Funding SEL programs is an investment in the lives of children and their communities as a whole.

### **Clymb**

Clymb is an emotional health software for school-age children. Clymb meets young people through technology where they're most interested and empowers them with coping skills they can carry around in their pockets.

Children take an initial SEL assessment based on the Delaware Social-Emotional Competency Scale (DSECS-S) and then do daily check-ins that measure their mood and SEL competencies. Based on a sample of over 31,000 elementary, middle, and high school students in Delaware, DSECS-S was found by Mantz et al. (2018) to be a valid and reliable measure of social-emotional competency. Mantz et al. evidenced that the competency score was valid because it positively correlated with academic performance and negatively correlated with suspensions and achievement.

When youth check in on Clymb's platform, they select an emoji to describe their mood. An emoji is a small pictogram or image used to express an emotion, object, or idea. Using emojis is a proven effective tool to gather data from youth. Oleszkiewicz et al. (2017) found that children ages 4-8 with no reported phone or social media use are able to accurately identify emotions from emoji. Other studies including Setty et al. (2019), and Massey (2021), and Mackenzie et al (2020) to be an innovative tool to gather accurate data about children's emotion and attitudes. Mackenzie emphasized the potential of emoji to facilitate expanded research with children due to children's strong understanding of the symbols leading to increased accuracy and engagement.

Using information from the initial assessment and the check-in, Clymb's algorithm recommends three resources that the youth can engage in to support their emotional wellbeing. Personalized SEL is critical because each student has different strengths and weaknesses in their emotional intelligence based on factors like cultural background, disability status, and economic context. Lessons that are critical for some youth could be boring and redundant for others. Clymb gives agency to youth by letting them assess their own competencies and then choose what activity they would like to complete. By giving children three content options to choose from, children are given a voice

in what content they find interesting and what skills they would like to address. As Downes and Cefai (2016) state, student voice is critical in creating and administering SEL programs because it gives students intrinsic motivation to participate and lessens the feeling that teachers or authority figures are forcing them to participate.

In Clymb's library, there are articles about SEL and videos with Coping Cues, Mindfulness Stretches, Energizing Exercises, Growth Mindset Statements, and Mindfulness activities. Each video contains an activity relevant to one of the five SEL competencies so that youth can learn to regulate their emotions and build SEL skills simultaneously. The videos use simple language emphasized with engaging images and text so that it is accessible to multiple age groups. Scripting videos with simple direct language is important to reach young listeners, English language learners, and individuals with lower emotional intelligence. Froiland and Davidson's (2020) study notes that there is a positive correlation between emotional intelligence and listening comprehension (Froiland, Davidson). When content is accessible to more users, it is more likely to reach the people who would most benefit.

Clymb's content categories are proven to have a positive impact on youth. Coping Cues, which typically contain a mindfulness activity, explain how youth feel in a challenging situation and provide explicit instruction in how to navigate that situation. Katz (1997) notes that coping skills help protect students from potential risks and accordingly Mishara and Ystgaard (2006) argue that SEL curricula need to address general adaptive coping strategies that can be applied in many situations in order to be effective. Clymb's "Coping Cues" describe broad situations and feelings like panic or self-doubt so that youth can apply the lessons in a variety of contexts.

Mindfulness is featured prominently as a coping strategy because it is proven to have positive effects in youth including improved cognitive functioning, self-esteem, self-regulation, and sleep (Weare 2012). The “Mindful Stretches” are inspired by yoga positions. Yoga has been shown to significantly improve self-regulation and decrease behavior problems among elementary school students (Rashedi et al. 2021). “Mindful Stretches” contain slow restorative movements and “Energetic Exercises” feature brief aerobic exercises. According to Williamson et al. (2001), elementary aged students experience a significant reduction in negative mood and increase in positive mood after completing brief aerobic exercises. For individuals who report depressed mood before exercising, the increases in positive mood are even greater (Lane & Lovejoy, 2001).

## **Implementation**

When Clymb is implemented at a school or organization, there are two levels of leadership implemented at the site. Clymb Champions are in charge of a small group or class of students and Clymb Leads can direct Clymb Champions and the organization’s use of Clymb overall. Having one Clymb Lead at each organization is critical for the success of the program. As Haymovitz et al. (2017) note, having consistent organizational leadership for an SEL program helps raise awareness and foster integration of the program. Anecdotally, these research findings have been echoed in Clymb’s partnership sites.

Once children have logged into Clymb, the software is straightforward and self-directed. Teachers can use content from Clymb’s resource planning to supplement their SEL instruction, but using the platform is a brief independent activity. This is useful because Rime-Kaufman and Hulleman (2015) found that the lack of teacher and program planning limits the success of an SEL program.

Because many teachers and childcare professionals are experiencing burnout, having an individual digital SEL program removes that potential burden that could impede youth outcomes.

Clymb recommends that youth use the software at least three times per week to complete the check-in questionnaire and view a video or read an article. As of November 2022, Clymb has 203 activities on the software. If youth use software at the recommended rate, it would take them more than a year to see the entire catalog.

## **Results**

Clymb was initially piloted with over 400 youth in grades K-8 in 2018 with very positive results. The results were derived from the Strengths and Difficulties Questionnaire (SDQ), which is a widely used twenty-five question survey designed to assess the behavior of children and adolescents. The questionnaire asks questions about emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behavior. According to Goodman et al. (1998), the questionnaire is a valid method of assessment both for self-reported and parent or teacher rated assessments. Because the SDQ measures both strengths and weaknesses, it is appropriate for the general population, not just children experiencing behavioral challenges (Di Riso, et al., 2010). The SDQ has been used in over 6000 publications. The students were given the survey before and after the 5 month pilot period to measure changes in their behavior. 55% showed improved social-emotional competency, 48% had diminished hyperactivity, and 33% reported better emotional control and relationships, and 43% displayed improved conduct. 60% of youth who ranked as abnormal on the emotional symptoms scale improved to normal and 57% of the youth who ranked as abnormal on the total difficulties scale improved by 1 or 2 rankings, going from abnormal to normal or borderline.

Youth also reported that they enjoyed engaging with Clymb in a later 2019 pilot. 87% said they would use it again and 84% said the content was very interesting. Furthermore, 64% reported feeling more focused after doing a Clymb activity.

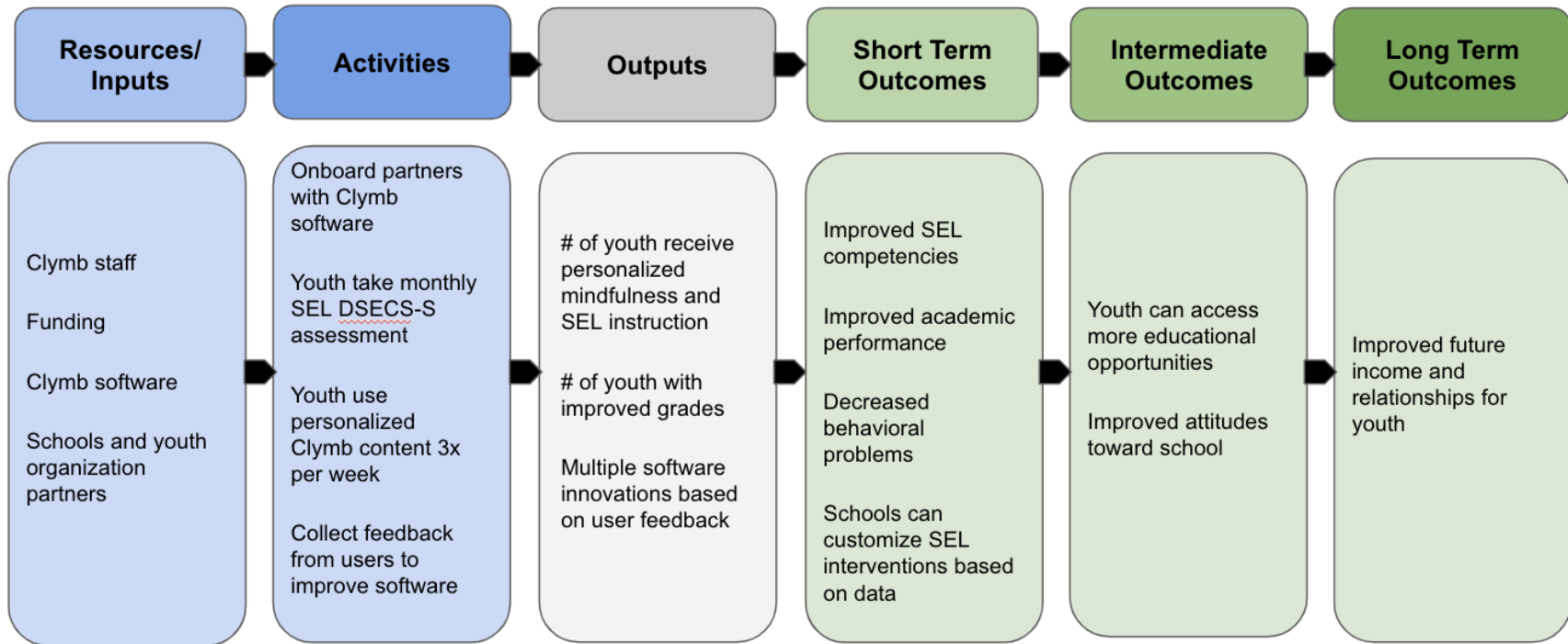
## **Conclusions**

Children need emotional health support, particularly with the effects of the COVID-19 pandemic. In order for children to cope with the stress and loss of the pandemic, they need to develop evidence-based coping strategies and refine their emotional intelligence. Before the pandemic, emotional intelligence was an important predictor of success, but now it is even more important. Feinberg et al. (2021) found that the pandemic has caused a notable deterioration in child mental health. With varying severity, environmental, social, and economic crises are expected to occur more frequently in current youth's lifetimes (Banholzer, et al., 2012). Emotional intelligence allows youth to identify how they are feeling and appropriate coping strategies help them navigate through challenging situations with resilience. Youth need preventative instruction in SEL and coping strategies so that they can have access to them before they need them and when stressful situations arise.

Clymb is designed to address these challenges and promote emotional wellness in youth. Its content is based on research-based strategies that are proven to elevate mood in youth. Clymb's check-ins and algorithm make sure that youth are given content that is relevant to how they feel in that moment.



## Clymb Logic Model (November 2022)





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