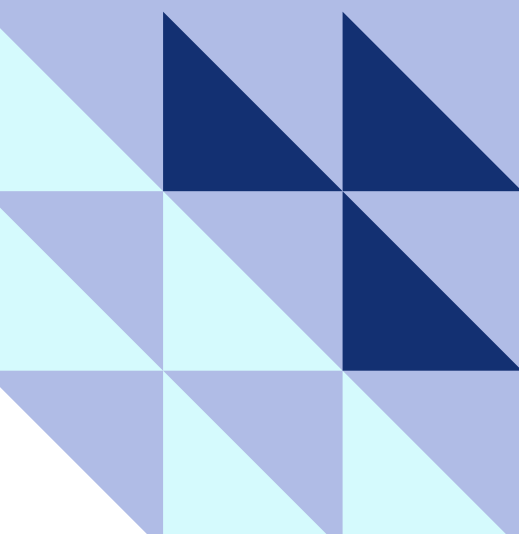




Systems Of Cross-sector Integration and Action across the Lifespan (SOCIAL) Framework:

THE EDUCATION SECTOR

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Key Acronyms, Terms, and Definitions

- **SOCIAL Framework:** *Systems Of Cross-sector Integration and Action across the Lifespan (SOCIAL) Framework.*
- **SIL:** An acronym referring to both Social Isolation and Loneliness.
- **SILC:** An acronym referring to Social Isolation, Loneliness, and Social Connectedness.
- **HiAP:** Health in All Policies.
- **IDEA:** Inclusion, Diversity, Equity, Access
- **Social Connection:** The (i) structure, (ii) function, and (iii) quality of relationships with others. Social connection includes not only the size and diversity of one's social network and roles, but the functions these relationships serve, and their positive or negative qualities.
- **Social Connectedness:** The degree to which an individual or population falls on the continuum of social connection.
- **Social Isolation:** Having objectively few social relationships, social roles, and group memberships, and infrequent social interaction.
- **Loneliness:** A subjective unpleasant or distressing feeling of isolation. A perceived discrepancy between one's actual and desired level of social connection.
- **Belonging:** Feeling like an accepted member of a group and having good relationships with members of the group
- **Stakeholder:** Individual or group of individuals with an interest in any decision or activity of an organization or topic area.
- **Student:** Person engaged in learning, often one enrolled in a school, program, or college.
- **Educator:** Person who provides education or instruction; a teacher.
- **Social-Emotional Learning (SEL):** Educational method that aims to foster social and emotional skills within learning in school
- **Alternative Education:** Education that takes place outside of traditional educational spaces and in environments that may not award degrees.
- **Digital Literacy:** Individual's ability to use and communicate through digital platforms.

INTRODUCTION

The benefits of social connection and conversely the risks associated with disconnection (e.g., isolation and loneliness) are well documented. This evidence cuts across scientific disciplines including medicine, sociology, psychology, epidemiology, neuroscience, communication, and anthropology, and spans multiple scientific methodologies including prospective longitudinal, cross-sectional, experimental, and randomized controlled trials. This has led to a rich yet complex and dynamic literature leading to questions about how best to promote health and reduce health risk at a population level. The weight of the evidence has prompted the development of a systemic framework to address social connection by the Foundation for Social Connections' Scientific Advisory Council, chaired by Dr. Julianne Holt Lunstad.

THE SOCIAL FRAMEWORK

As described in depth in [Report 1](#), The Systems Of Cross-sector Integration and Action across the Lifespan (SOCIAL) Framework aims to facilitate and accelerate progress toward a society that values social connectedness across the lifespan and in all societal domains. Drawing upon, merging, and expanding upon the socio-ecological model and the Health in All Policy (HiAP) framework (Figure 1), the SOCIAL framework illustrates how every sector of society and every level of influence can contribute to social connection and reduce social isolation and loneliness.

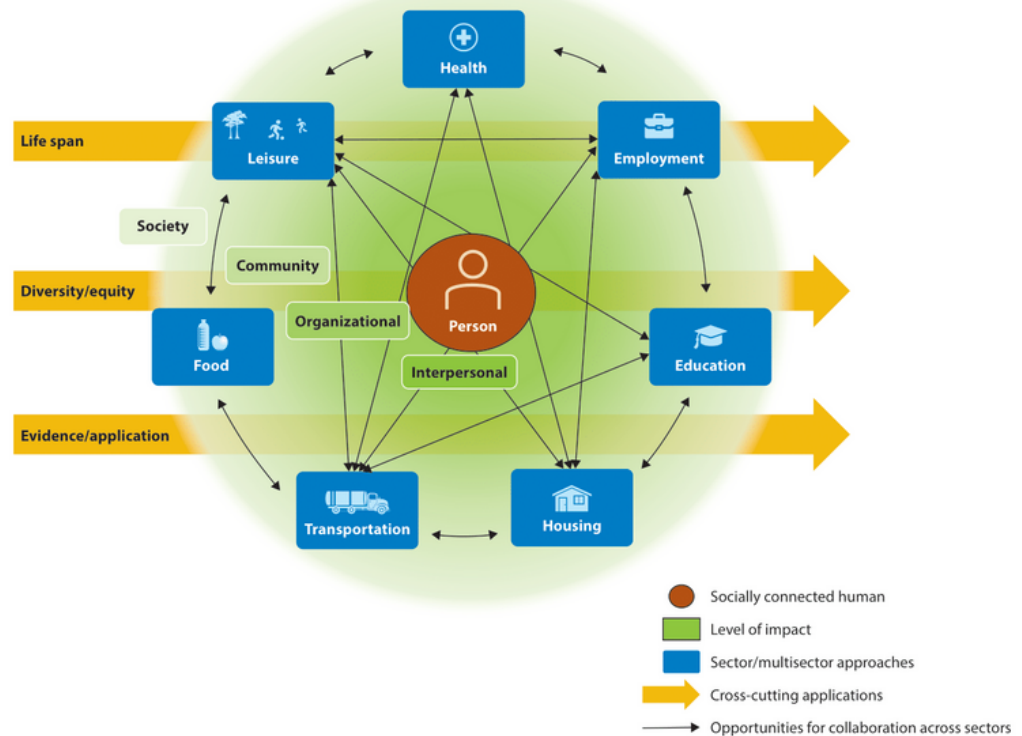


Figure 1 Conceptual representation of the SOCIAL Framework (source Holt-Lunstad, 2022)(65).

Key Components of the Framework: The SOCIAL framework has four main components. Each component guides us in understanding the level of impact, which sector is involved, how to collaborate across sectors, and themes that are present throughout.

- **Level of influence.** Depicted in green in Figure 2, illustrates the selected levels of individual, interpersonal, organizational, community, and societal stratification of the socio-ecological model. (For additional resources on the socio-ecological model see [here](#)).
- **Sector of Society.** Depicted in blue in Figure 2, illustrates the selected sectors included within the Health in All Policy (HiAP) model. (For additional resources on the HiAP model see [here](#)).
- **Cross Cutting Themes.** Depicted by the gold arrows in Figure 1, illustrates selected areas of focus (e.g., life span, diversity and equity, and evidence and application) that span across the levels and sectors represented in the framework.
- **Opportunities for collaboration across selected sectors.** Acknowledges and encourages approaches that are transdisciplinary.

Levels of influence across socio-ecological model

Sectors	1 Individual	2 Interpersonal	3 Institutional/ organizational	4 Community	5 Societal
+ 1. Clinical and population health	1.1	1.2	1.3	1.4	1.5
2. Transport	2.1	2.2	2.3	2.4	2.5
3. Housing	3.1	3.2	3.3	3.4	3.5
4. Work	4.1	4.2	4.3	4.4	4.5
5. Nutrition	5.1	5.2	5.3	5.4	5.5
6. Environment: water and sanitation	6.1	6.2	6.3	6.4	6.5
7. Education	7.1	7.2	7.3	7.4	7.5
8. Leisure: arts and entertainment	8.1	8.2	8.3	8.4	8.5

← Lifespan →

Figure 2 The SOCIAL framework is illustrated in a table format to facilitate systematic identification of areas in which to focus efforts (Holt-Lunstad, 2022)(65).

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REPORT 2

The Education Sector: Learning Through the Lifespan

BACKGROUND

As explored and presented through the SOCIAL Framework, there are opportunities to recognize social isolation and loneliness and advance social connection, through all sectors of society. Education is a particularly important sector to recognize and address, given the opportunities for social interaction and the number of hours spent in educational settings by the most vulnerable members of society (i.e., children). Educational settings also allow program developers to reach the most at-risk members of society that would be unlikely to participate in programs delivered in other contexts, such as community or medical settings. Notably, the experiences of younger students in educational settings often influence the development of their social skills and thus the quality of their social connections throughout their lives. For students of all ages, educational settings provide the opportunity to form connections. Despite these environments offering many possibilities for students and educators to connect, many students and teachers report loneliness in the school system (1).

Participation in the educational system continues for many after they complete secondary school. While not all young adults choose to attend college, about 70% of young adults in the U.S. enter post-secondary educational institutions. Additionally, the percentage of individuals choosing to pursue graduate degrees throughout adulthood continues to grow (207). Outside of the formal, degree-conferring education system, during different stages of their lives, adults attend trade schools, specialty schools, and participate in other learning opportunities in places such as community centers, online platforms, and workplaces that are self-paced or include virtual classroom participation. All of these education and learning environments are key spaces in which SILC (social isolation, loneliness, and connection) can be recognized, where different strategies can be taught or implemented, and connections can be fostered so that all Americans have the support necessary to be socially engaged in society.

PURPOSE

The aim of this report is to explore how social isolation, loneliness, and connection play a role in the education sector. We will discuss evidence-based interventions, identify gaps in the research base, and explore untapped opportunities to address social isolation and loneliness and advance social connection in the education sector through programs and policies. The SOCIAL Framework serves as a guide to identify gaps and opportunities to aid in the establishment of systemic strategies.

For the purposes of this report, the education sector is defined as K-12 education, postsecondary education (college, graduate school, doctorate degrees), and other non-degree conferring or non-traditional learning and continuing education opportunities for adults. The report will focus on understanding and providing solutions for students and educators experiencing disconnection, isolation, and loneliness in order to advance social connection for all.

The following sections will address the questions of who should take action, what potential actions should be taken, and how policy can be applied at each level of influence to effect change. This section is organized by the socioecological levels of influence as depicted in the columns found in Figure 2 above, thus highlighting the individual, interpersonal, community, and societal level opportunities to facilitate social connection. In each section, key questions are posed for consideration by stakeholders who are implementing or evaluating strategies and policies for SILC.

SOCIAL ISOLATION, LONELINESS & SOCIAL CONNECTION IN THE EDUCATION SECTOR

K-12 Education

Research suggests that social isolation and loneliness have a significant impact on students in K-12 education. For example, the stress caused by undesired social isolation has been linked to increased risk for anxiety, depression, and low self-esteem (2–4). Social isolation can also interfere with academic performance, including academic engagement and achievement (5,6). These effects are particularly strong in adolescence, when peer acceptance is critical to well-being (7). Further, extended social isolation has adverse effects on long-term mental health, and the negative psychological effects of isolation can develop months or years later (8).

Loneliness, which is defined as a negative emotional experience arising from a perceived discrepancy between actual and desired level or quality of social contact, has also been linked to a host of negative outcomes. For example, a recent review of 63 studies involving 51,576 students found that loneliness was linked to higher levels of stress, fear, boredom, anxiety, depression, and related mental health problems (9). Loneliness can also contribute to lower levels of academic engagement and achievement among children and adolescents, (10,11) as well as lower levels of academic self-belief and greater school dissatisfaction (12). In addition, loneliness has been linked to social inequalities, such that more disadvantaged children have been found to have higher levels of loneliness, which in turn contributes to disparities in academic achievement (12).

If social isolation is a significant source of stress for children and adolescents, then positive social contact can be an important protective factor. For example, positive peer relations have been linked to lower rates of loneliness (13), stress, and mental health problems (14), as well as higher levels of prosocial behavior (15), emotional well-being, and positive beliefs about the self (16). Positive peer relations can also promote academic achievement (17,18), reduce the likelihood of grade retention (19), and buffer or reduce the effects of loneliness on academic outcomes (16,20,21).

Teacher-student relationships are similarly protective, with research linking positive relationships with teachers to greater academic engagement and achievement, (22,23) as well as lower levels of mental health problems (24) and higher levels of social competence and well-being (25). Additionally, mentorship from other adults (such as older adult volunteers) in schools has been found to improve students' social and emotional skills and academic achievement (26–28).

Postsecondary Education

College can be a difficult transitional period for many students, and the period is associated with social changes including distance from familiar and familial relationships, unfamiliar responsibilities, and new routines, which can contribute to loneliness (29). Studies indicate that college students transitioning into new environments view their peers as more socially connected than they are, which increases their own feelings of isolation (30). In addition to some students experiencing social isolation and loneliness, college students are reported as experiencing fairly high levels of mental health conditions (31). An analysis of literature between 2009-2019 found that 22% of students experienced depression and a 2012 survey of 400 university and college counseling centers nationally found that 41.6% of students have anxiety disorders (32). With reports of high social isolation, loneliness, and mental health disorders during the COVID-19 pandemic, the ongoing and long term consequences on social isolation, loneliness, and mental health are still being explored and understood (33).

Research has also uncovered high rates (1 in 5) of social isolation and loneliness among graduate and professional healthcare students, linked with other significant academic and mental health outcomes (34). Doctoral students who report feeling socially isolated have higher attrition rates than students who do not report social isolation, with lack of social connection being cited as a prime reason for attrition (35). This phenomenon is similar among medical students, with social isolation being considered a signal for early dropout in medical school programs (36).

Feelings of isolation often occur alongside mental health concerns, with 49% of medical students reporting experiences of burnout and 11% of medical students reporting feelings of suicidal ideation (34).

Studies indicate that the prevalence of poor mental health among students in other graduate programs is high in related populations, including master's and doctoral level graduate programs (35).

Similar to K-12 students, research finds that positive social connection can serve as a protective factor. For example, positive instructor support for students' beliefs and perceptions about themselves in the learning context has been found to increase the likelihood of degree attainment among college students (37). Uncertainty over the quality of one's social and academic bonds leads individuals to question their social ties and their fit in an educational setting; in contrast, feelings of belonging typically support student retention (37). College programs that have taken active steps to address social isolation and loneliness among students have reported graduating higher percentages of students as compared to programs that have not taken explicit steps (38). When social belonging interventions are provided to aid the student transition to postsecondary settings, they have proven beneficial during and beyond the university setting. For example, adults who participated in belonging interventions as college students were reported as having greater career success and satisfaction later in life (39).

Alternative and Continuing Education

Education also takes place outside of traditional educational spaces and in environments that are not degree-focused. Some alternative settings for K-12 students include homeschooling environments, English as a Second Language (ESOL) courses, and community or religious learning classes. Students may participate in-person or remotely in education courses that are self-paced or as part of a class. Courses may be offered on learning sites geared toward particular groups, such as NeverTechLate, a platform for older adults to learn tech skills, or on platforms for adults such as Coursera, LinkedIn Learning, and Google Certification Programs. Individuals who participate in these learning settings may experience social isolation and loneliness as much as students in traditional settings; data from 2018 found that 1 in 5 Americans report often or always experiencing social isolation and loneliness (SIL) (40). There are opportunities to identify these students experiencing SIL, foster social connection in these learning spaces, and connect them to other resources to address SIL.

Educators

Although research is more limited on the experience of educators, there is evidence that loneliness affects educators as well as students with significant consequences. For example, loneliness has been associated with higher levels of stress (41) and burnout (42) among educators, as well as lower levels of self-efficacy (43) and job satisfaction (44). Similarly, self-reported social isolation among teachers has also been linked to higher levels of stress (45).

Lessons from the COVID-19 Pandemic

In addition to all the other challenges created by COVID-19, children and adolescents have suffered from increasingly prolonged restrictions on social contact, including widespread school closures, which relegated students to learning at home in isolation from one another. Recent research on this topic has reported elevated anxiety, anger, confusion, sadness, fear, helplessness, and PTSD in children and adolescents as a result of social distancing associated with the COVID-19 pandemic (46,47). Many researchers have concluded that children and adolescents are likely to experience high rates of depression and anxiety even after the enforced isolation ends, and this risk is likely to increase with each week or month that students are isolated from one another (9). In addition, the COVID-19 pandemic also increased perceived loneliness among teachers (48).

This list of consequences of the pandemic includes academic achievement. Estimates are that students could lose between 0.3 and 0.9 years of education due to school closures during the pandemic, and these estimates are more severe the longer that the pandemic continues (49). In addition, close to 7 million students could drop out of school, and these academic deficits will have consequences for later educational opportunities and lifetime earnings. Students from low-income and underrepresented families are particularly vulnerable, and there is a widening gulf across economic and social classes (50). The effects of poverty on educational attainment can be magnified by social isolation and mental health problems, with a disproportionately high toll on marginalized or underserved communities (51,52).

The struggle to move in-person education online during the pandemic was due, in part, to the fact that many instructional techniques commonly employed in K-12 education did not transfer well to an online environment. Research finds that, for example, students often

pay more attention to their devices (or one another) than to the teacher (53,54) when instruction is conducted via lecture or whole-class discussion. This is exacerbated in an online environment where (a) students have many more potential distractions at their fingertips as compared to an in-person setting; and, (b) it is far more difficult for teachers to monitor and manage student behavior as compared to an in-person classroom (55). Indeed, research has demonstrated that well-designed online instruction improves student learning compared to an in-person lecture (56). Unfortunately, the flip side is also true: poorly organized online instruction can negatively impact educational outcomes and result in much higher levels of student dropout (57–59). These findings suggest that there is a great deal of risk when moving K-12 education online without training and support for instructors in deploying more engaging, student-centered forms of instruction (as described below).

Postsecondary students were also significantly challenged by the COVID-19 pandemic. The most common response to the COVID-19 pandemic for postsecondary institutions was transitioning to remote and online education, which many college students experienced as a stressor due to their unfamiliarity with the modality (33). COVID-19 prevented students from socializing face-to-face, with many students reporting connecting with family and friends less frequently than before the COVID-19 pandemic (33). Remote learning also prevented students from participating in academic and networking opportunities like internships, research, or study abroad (33).

In conjunction with remote learning, many institutions required students to move out of their on-campus living arrangements in order to follow social distancing guidelines (33). The option of on-campus living arrangements at postsecondary institutions can provide students the opportunity to connect with one another in meaningful ways. Students living on-campus have been reported as more socially connected than students living off-campus, who report higher levels of social isolation and disconnection (60). The change in living arrangements caused by the COVID-19 pandemic likely decreased social connectedness among students.

Difficulty adjusting to online school and off-campus living was also reflected in the academic and mental health outcomes of students. Evidence indicates that 33% of college students reported that their academic futures were significantly at risk due to COVID-19 (33).

Students reported concerns about finances, securing employment after college, and severe impacts on their grades. Additionally, many students reported feeling down and depressed, anxious, or hopeless as a result of the COVID-19 pandemic (61). Evidence suggests that an increase in mental health concerns like depression and anxiety, and the lack of social connection resulting from the COVID-19 pandemic, may interfere with students' long-term mental health outcomes, ability to complete college, and ability to obtain employment after college (61).

As of August 2022, most K-12 schools and postsecondary programs have returned to in-person learning environments. However, it is clear that the impact of the COVID-19 pandemic on students' experiences of social isolation and loneliness will linger, and lessons learned from providing education and socialization in remote environments are important to consider for current and future solutions to address SILC.

ADDRESSING SILC ACROSS LEVELS OF INFLUENCE

7.1 Individuals

Efforts to foster social connectedness and/or address SIL may benefit by focusing on the individual. Efforts focused on the individual need to take into consideration individual differences that contribute to risk for (or protection from) social isolation and loneliness, such as socio-demographic attributes (age, gender, race/ethnicity, education, and income), and background factors such as personality, culture, history, and immigration status.

Who are the key stakeholders who should be concerned about and responsible for taking action to improve social connectedness on the individual level?

Key stakeholders are those who reach individuals and can take action focused on social connection and/or SIL that are directed to and can be used by individuals. These include the following:

Students. Individuals who are isolated and/or feel disconnected or lonely, or who know of others who are lacking social connection, can play an integral role in addressing SIL on an individual level. Students can utilize resources and services that address SIL and advocate for diverse and accessible solutions.

Educators. Educators experiencing social isolation and loneliness, and who are aware of other educators and students who are lacking social connection, can play an integral role in addressing SIL on the individual level. Educators can provide assistance and advocate for solutions to combat social isolation for themselves and their students.

Administration & School Staff. Administrative staff can offer solutions to students experiencing social isolation and loneliness. This may include school board members, principals and vice principals, and guidance counselors.

Parents & Family Members. Parents, guardians, children, and other family members can provide resources and connect their family members experiencing SIL to approaches, like those mentioned below.

What are potential approaches to improving social connectedness on the individual level?

There are a number of actions that individuals can take or can be provided to individuals to mitigate the negative impact of social isolation, loneliness, or related forms of stress.

Mindfulness Techniques. Mindfulness is one of the most widespread and thoroughly studied approaches to reduce stress and promote well-being. Mindfulness is often practiced through sitting meditation during which the individual can focus on their breathing, conduct a body scan, invoke feelings of love or gratitude, or repeat a chant or mantra. Mindfulness can also be practiced while walking, running, doing yoga, or other activities where the individual focuses exclusively on the present moment. A regular mindfulness practice can build emotion regulation, reduce anxiety and emotional exhaustion, and, in adult populations, can enhance job satisfaction (62–64) the latter of which is a key issue with K-12 educators, as it predicts both teacher retention and the well-being of teachers and their students (65); notably, job satisfaction among K-12 educators has declined during the COVID-19 pandemic (66,67). The benefits of a regular mindfulness practice, such as improved emotion regulation, can subsequently promote more positive social relationships (68). More recent research has begun to explore the direct effects of mindfulness on social isolation and loneliness, finding positive effects in a range of populations, including, for example, first-year college students (69–71).

Cognitive-Behavioral Therapy. Cognitive-behavioral therapy (CBT) has also been deployed to mitigate some of the negative impacts of social isolation and loneliness. CBT is an individual form of therapy that is designed to help people change unhelpful patterns of thought and/or behavior; for example, individuals may attempt to notice persistently negative or self-defeating patterns of thought and orient toward more positive thinking (72). Research has found positive effects of CBT on social isolation and loneliness in a variety of settings and populations (73,74). CBT has also been found to have positive effects on psychological symptoms such as anxiety and depression when deployed in K-12 settings, although the effects are small (59). CBT can be expensive to implement in K-12 settings, and is not always available, particularly for underprivileged youth, suggesting that less expensive, more scalable and accessible approaches are needed (75). Recent advances include Internet-based and mHealth versions of CBT,

which have been found to be effective in limited trials (76–78), and these may be promising directions for K-12 settings.

Social-Emotional Learning. As opposed to efforts aimed at mitigating stress associated with loneliness, social-emotional learning (SEL) in K-12 settings provides an opportunity to promote the self-regulatory and social-emotional competencies needed for youth to build social connections with peers. The last two decades has seen increasing availability of SEL programs that incorporate classroom, home, whole-school and even whole-district components in various configurations (79). SEL programs attempt to target the underlying skills (e.g., emotion regulation, problem solving) that not only reduce negative experiences such as social rejection, but ideally also promote social connectedness with peers and teachers (80,81). The targeted skills of most SEL programs, such as self-awareness, self-management, social awareness, and decision making, are interrelated and theorized as synergistic foundations for promoting social and academic success in school (82). Although research has found positive academic and social-skill outcomes for SEL programs, research finding positive effects on peer relations or social acceptance has been scarce, and reviews suggest effect sizes are small for broad categories such as “positive social behavior,” (83,84) which captures daily behaviors such as getting along with peers. This may be due to the emphasis within most SEL programs on individual-level skill-building and competencies, with less focus on peer relationships within and beyond the classroom. For example, one study found significant effects for a widely distributed SEL program on conduct problems, hyperactivity, emotion management, and skills for learning after two years of implementation, but not empathy, prosocial behaviors, or peer relations (75).

Perhaps the closest proxy to measures of positive social relationships are studies examining impacts on classroom or school community, loosely lumped under school bonding or school connectedness. There is evidence that comprehensive SEL programs can positively influence these outcomes, but so far this evidence exists primarily at the elementary school level (85–88). Indeed, most SEL programming is concentrated on and found to be more effective in the early elementary years, with diminishing returns in middle and high school (79,80). Thus, it remains unclear whether curricular approaches that attempt to teach students specific social-emotional skills are able to actually modify behaviors that contribute to positive change in the

quality of peer relations and, in turn, to reduce social isolation and loneliness.

Digital Technology Training. Many platforms provide digital technology training for older adults, and there is some evidence that this training can improve family ties and connections to others (89,90). As older adults spend more time on electronic devices (between 2009 - 2019, the Pew Center saw a half an hour increase in screen time among older adults per day), it is increasingly important that older adults have the skills to use technology for social connection so that it does not become a means for further isolation (91).

How is policy relevant to social connectedness for individuals?

Although policy often affects change on the community (school or institutional) or societal (federal) level, certain policies can be focused on improving SIL and advancing social connectedness by providing resources directly to individuals.

Policies that K-12 schools, academic institutions, and other classes and education platforms can institute to improve social connectedness on the individual level can include:

- Implementing social-emotional learning programs that have evidence for enhancing peer relations, and providing adequate professional development, training, and support for educators to conduct this programming, particularly for K-12 students. If evidence-based programs do not demonstrate positive effects on peer relations or related forms of social connection, then alternative approaches should be developed and evaluated.
- Removing barriers to and increasing access for screening, treatment and outreach for social and mental health services for students and educators.
 - K-12 schools can expand ways that students and educators can receive services and by normalizing the use of mental health services. In addition, evidence-based universal school-based mental health promotion programs are practically non-existent and would be a useful target for future research.
 - Postsecondary and graduate institutions can 1) offer these services if they do not already, 2) increase funding to expand access, and 3) remove caps on the number of visits that students can make to the counseling centers to ensure access.

- Higher education institutions can enact policies that support educators' abilities to access mental health support and offer health insurance that includes mental health benefits.

7.1 Individual Summary

Key Stakeholders

Students, Educators, Administration & Other Staff, Parents & Family Members

Potential Approaches to Consider

Mindfulness Techniques, Cognitive-Behavioral Therapy, Social-Emotional Learning, Digital Technology Training

Questions to Consider:

- How will I measure the success of interventions focused on the individual?
- What are key considerations that impact the individuals I am seeking to serve?
- What are some challenges that individuals are facing that I should consider?

7.2 Interpersonal Relationships

Efforts to foster social connectedness and/or address SIL can benefit by focusing on and targeting the variety of relationships that exist in educational environments. These relationships make up individuals' social networks and are known to influence human behavior and contribute to feelings of social connectedness or isolation and loneliness. Thus, approaches that target interpersonal relationships are important to consider.

Who are the key stakeholders who should be concerned and responsible for taking action to improve social connectedness on the interpersonal level?

Within a school environment, a variety of social relationships exist. While not exhaustive, the following list of stakeholders are particularly important for solutions that act upon the interpersonal level. These include the following:

Students. Individual students may work to improve their interpersonal relationships with friends, peers, teachers, and administrators. Students may work to improve interpersonal relationships by creating and participating in peer support groups, clubs, and volunteer opportunities. Additionally, students can advocate within their schools and school systems for initiatives that expand social connectedness.

Educators. Educators can work to improve interpersonal relationships between students, with students, and with other educators. Educators can develop classroom activities that require students to connect, like appropriately designed small-group activities (see below). Educators have the ability to reach students experiencing social isolation and loneliness by providing direct emotional and instrumental support. Other school staff such as librarians, custodians, and programming staff also have the opportunity to contribute.

Counselors. School and university counselors can identify and screen students for SIL, provide direct mental health support for students, and partner with stakeholders across the community to advocate for and advance policies and programs in schools to advance social connectedness. As a paper published on the role that school counselors can play during the COVID-19 pandemic illustrates, school counselors are poised to support students' mental health

and advance cultures of connectedness in schools (92).

Parents, Family Members, & Caregivers. Parents and guardians play a key role in the education of their children and in supporting them when facing SIL. For K-12 students, parents and guardians may wear many different hats such as providing education through homeschooling, serving on PTAs and advocating for decisions made by schools, working together with teachers, counselors, and other school staff to meet their children’s social and emotional needs, and volunteering in classrooms. Other family members and caregivers for older parents can all play a role in recognizing SIL in their family members, supporting them through their familial relationships, and helping them access available support and resources.

What are potential approaches to improving social connectedness through interpersonal relationships?

There are a variety of approaches that can be used to address social isolation and loneliness and improve social relationships in educational settings.

Cooperative or Peer Learning. Cooperative or peer learning is a small-group instructional technique that can promote positive social, behavioral, academic, and mental health outcomes for students. Cooperative learning can be used with any curriculum in any subject area at any grade level from preschool to graduate school. Cooperative learning is specifically structured to provide students with a positive social experience while they are learning, and these social experiences, in turn, promote positive peer relations and peer support and reduce peer rejection (17,93,94). These positive peer relations create a cascade of beneficial effects on student behavioral and mental health, including reductions in bullying and victimization, substance use, stress, and mental health problems (14,94–97). In a recent cost-benefit analysis, it was determined that cooperative learning yields \$22.54-\$101.39 in benefits per dollar invested as a result of reduced risk for substance use in early adolescence. In addition, cooperative learning can promote prosocial behavior (94) and social-emotional skill development (78) along with academic engagement and achievement (17). Finally, cooperative learning can reduce prejudice and enhance cross-ethnic peer relations (17,97) and can reduce disparities in social and academic outcomes for students of color (98). Thus, in contrast to curriculum-based programs, cooperative learning can be seen as an experiential approach to

building social-emotional skills and, in turn, to develop positive social relationships that can be especially efficacious for socially marginalized groups. To be effective, however, cooperative learning must be implemented according to its core design principles; less complete implementations are not as effective (17).

Peer-To-Peer Mentoring. Peer-to-peer mentoring has also been established as a useful mechanism to reduce social isolation and loneliness and promote positive social outcomes across age groups and settings (99), including both students (100) and teachers (101,102). Mentoring also provides a variety of additional benefits. For example, recent meta-analyses have found career benefits associated with peer mentoring in academic workplaces, both among public school teachers (103,104) and university faculty (105). Other meta-analyses and reviews have established the academic benefits of school-based mentoring at elementary, secondary, and postsecondary levels (106); for example, a meta-analysis found positive effects of peer mentoring for struggling readers in elementary school (107) as did a review of mentoring programs for college students (108). Reviews and meta-analyses of community-based mentoring programs that pair youth with adults from the community have also found positive behavioral and academic outcomes for youth of various ages (109).

Advisory Programs and Trauma-Informed Instruction. In a similar vein, there are specific approaches designed to enhance teacher-student relationships. For example, advisory programs are often implemented in middle and high schools to establish long-term, supportive relationships between a teacher and an advisory (i.e., a group of students); a teacher meets with their advisory on a regular basis, and the focus can be on building relationships as much as enhancing academic outcomes (110). While these programs have no evidence of direct effects on social isolation or loneliness, they have been found to promote positive social-emotional and academic outcomes for students (111–113). As another example, trauma-informed instruction trains teachers to recognize trauma in their students and respond to behavioral issues with compassion and support rather than in a punitive manner (114,115). As with advisory programs, trauma-informed instruction has no evidence of direct effects on social isolation or loneliness, but has been found to have

some limited positive social-emotional and academic outcomes for students (116,117).

Family-Based Programs. Family-based programs have demonstrated the ability to help families become less coercive and more nurturing (118). Family-based programs focus on providing education to families, improving the quality of family relationships, and teaching key family management skills. These programs attempt to transform the way parents manage and monitor child behavior, the way the family negotiates conflicts and solves problems, and the affective quality of the family environment. By improving parenting practices and family relationships, these programs can promote positive outcomes by reducing salient risk factors and promoting more effective family functioning. Although there is no direct research on social isolation and loneliness, several systematic reviews and meta-analyses have found family-based programs to be effective at preventing or reducing a wide range of behavioral problems among children, including externalizing and disruptive behavior, attention-deficit/hyperactivity, and oppositional defiant disorder, while also promoting social competencies, parenting quality, and academic performance (119–121). Reviewers have drawn similar conclusions with regards to adolescents, finding significant reductions in behavioral problems such as delinquency, violence, substance abuse, depression/anxiety, and HIV risk, as well as enhancements to family and peer relations and social-emotional skill development (121–124).

Volunteering. Compelling evidence suggests that volunteering contributes to feelings of connectedness and also benefits well-being (125,126). For volunteers, increased connection within community groups can, among other things, increase social capital by strengthening relationships that result in higher rates of reciprocal support. Additionally, volunteering can also influence and reduce the SIL of those who receive support through volunteering efforts, with some evidence of these reductions among older adult participants (127,128). The AARP Experience Corps provides a model for intergenerational volunteering that benefits both the volunteers and students. This, and other intergenerational volunteer programs like the Generation XChange, have captured effects of volunteering that include improved social-emotional scores and increased classroom engagement for students and improved self-reported health, feelings of happiness, and increased social interaction for volunteers (26–28).

How is policy relevant to social connectedness at the interpersonal level?

There is ample opportunity to encourage and facilitate interpersonal level interventions through policy and procedural solutions.

Policies that K-12 schools, academic institutions, and other alternative education classes and platforms can enact to improve social connectedness on the interpersonal level include:

- Providing professional development and training opportunities for educators and administrators to implement cooperative/peer learning and/or implement technology support for peer learning (e.g., PeerLearning.net).
- Developing school policies and programs that encourage personal relationships between students, and between staff and students, including peer-to-peer mentoring and advisory programs.
- Providing educators and administrators with training in trauma-informed instruction to promote a healthy and supportive environment for at-risk students.
- Providing funding or reallocating existing funds to employ more school counselors and foster counselor-student relationships. This should be prioritized in historically underserved and predominantly low-income or BIPOC school districts, where police officers often outnumber or replace counselors trained in trauma-informed care and child development (129).
- Hiring teachers to reflect the student body demographics, as BIPOC teachers can often act as mentor figures known as “othermothers” or “otherfathers” to BIPOC students which provides these students with a support network and fosters their sense of belonging in school (130,131).
- Investing in volunteering programs for students.

7.2 Interpersonal Summary

Key Stakeholders

Students, Educators, Counselors, Parents, Family Members & Caregivers

Potential Approaches to Consider

Cooperative or Peer Learning, Peer-to-Peer Mentoring, Advisory Programs, and Trauma-Informed Instruction, Volunteering

Questions to Consider:

Entities interested in implementing social connectedness interventions at the interpersonal level should ask themselves:

- What is the quality of the interpersonal social connection being made? Are there measures in place to evaluate this?
- What is the user experience/how will it be measured?
- How can delivery of the intervention or program be scaled up and sustained over time?
- What are the costs and benefits for the various programs or interventions that are available?

7.3 Communities

Efforts to foster social connectedness may benefit from recognizing that individuals are situated within various formal and informal communities within the education sector. On its most basic level, an educational institution consists of a community of students, educators, and staff. Other communities that form in traditional and alternative educational environments include student or educator-led clubs, interest and study groups, and educator study groups and societies. In some cases, these communities function in a virtual environment, while others exist in person. There are important opportunities to complement individual and interpersonal interventions that focus at the community level.

Who are the key stakeholders who should be concerned and responsible for taking action to improve social connectedness in communities?

School Administrators and Leaders. In the K-12 environment, principals, assistant principals, and superintendents play central roles in coordinating curricula, funding programs, and shaping school learning environments. At the postsecondary level, deans and provosts oversee campus programs and conditions. Many college campuses have Deans of Students, Offices of Student Affairs, and Student Health and Wellness teams who are responsible for the overall well-being of students. These stakeholders can play a particularly important role in recognizing that many students are experiencing loneliness, isolation, and lacking belonging and connection, and responding by championing policies, programming, and cultures that address these issues.

District Boards of Education. Often elected by constituents within a specified district, local district boards of education set policies, procedures, and make other important decisions for K-12 public schools located in their districts. District boards of education influence the operations and priorities of multiple K-12 schools, and their communities, throughout a district, and can use this influence to address issues of social isolation and loneliness among students and educators.

Parent and Parent Teacher Associations. PAs and PTAs exist in many K-12 schools to advocate for the needs of families and students as well as organize activities for families in a school's community.

In this role, PAs and PTAs have the opportunity to advocate for school policies that influence entire school communities around SILC.

State Departments of Education. Departments of Education oversee the operation and administration of public schools within their state, set learning standards and qualifications for educators and students, and establish accreditation, assessment, and other accountability programs. They may also offer centralized services for the entire state, such as continuing education (132). Additionally, in some states, departments are entrusted with the responsibility to create or dictate educational curricula (133). These Departments of Education can establish standards and guidelines to support schools and districts in addressing social isolation and loneliness among students and educators.

Online Learning Platforms. Platforms that offer online courses, such as [Coursera](#), [LinkedIn Learning](#), [NeverTechLate](#), and others have the opportunity to create communities and encourage connection among their virtual student communities.

Student Activities and Organizations. Student led-governments, clubs led by students or other staff (such as sports team coaches), and non-profit programs that work in schools have the opportunity to create cultures in their communities - from a small club to an entire student body.

What are potential approaches to improving social connectedness at the community level?

Focus on Evidence-Based Programs. School and district leaders, Boards of Education, and State Departments of Education can set local or statewide goalposts on SEL skills and social connectedness in K-12 classrooms. Such standards must emphasize the importance of evidence-based programs that have demonstrated an ability to reduce social isolation and loneliness and/or enhance social connection and peer relations. In addition, to be worthy of time and money investments, programs must demonstrate scalability, sustainability, and a significant cost-benefit. Such investments made at the local or state level could thus be expected to yield significant returns in reducing the impact of SIL. Additional information on evaluating the quality of evidence for programs can be found below.

Virtual Courses for Non-Degree Conferring Students.

Participation in synchronous virtual courses alone has been shown to be effective in increasing feelings of connectedness and reducing feelings of isolation for older adults (134). Further, there are opportunities for those who offer virtual courses to create community and further opportunities for connection for students. A case study for a learning platform geared toward older adult students that provides opportunities for students to become ambassadors in their communities and become more active participants in the platform found that these participants felt highly engaged through the classes and made connections with former colleagues and friendly local faces through these classes (135).

Providing Spaces to Gather. Creating and providing gathering spaces within a community can serve to strengthen social connection (136). Ensuring that these spaces are safe and accessible are crucial in order to create gathering places. There are opportunities for schools and institutions to create these safe gathering spaces for students and for educators to strengthen their community connections. These spaces can also be made available to members outside of the education communities and bring different communities together.

Foster Belonging. Evidence suggests that experiencing belonging is particularly important for college and university students for their mental wellbeing and success in higher education environments, while conversely, belonging uncertainty negatively influences success (particularly for historically underrepresented students) (37,137,138). Programs and roles are beginning to be developed and implemented throughout learning environments by students, educators in individual courses, and in campus or school-wide programming that encourage environments of sharing, belonging, and connection among students and educators (139,140). Additionally, research has found that students' feelings of belonging may be greater if they interact with other students who come from different backgrounds than their own, therefore fostering this kind of interaction may be an area for those convening students to consider (141).

Normalize SIL. Research has shown that stigma is one of the key factors that prevents individuals experiencing mental health conditions from seeking support (142). In addition, findings suggest that individuals experiencing loneliness are also socially stigmatized and perceived more negatively than non-lonely peers (143).

Communities have an opportunity to counteract this stigma and instead normalize the experience of SIL and disconnection, encouraging community members to change their perspectives on those experiencing SIL. Campaigns that encourage connection and empower individuals to reach out for support run by [The Jed Foundation](#) have been viewed by millions of individuals. In addition to providing interventions for SIL and opportunities to connect, this work alone may help individuals feel more comfortable in seeking support and relevant services.

How is policy relevant to social connectedness in the community?

Policies that K-12 schools, academic institutions, and other alternative education classes and platforms can implement to improve social connectedness on the community level can include:

- Set requirements or benchmarks for instructional techniques (cooperative/peer learning), peer-to-peer mentoring programs, and/or advisory programs.
- Create safe spaces for gathering in-person or online, including opportunities for others in the community.
- Develop roles and hire administrators dedicated to fostering connection and coordinating the implementation of evidence-based programs. Similar actions can be taken on the local or state boards in the K-12 environment to advance evidence-based programs and curricula through schools in the district or state.
- Create formal policies in the postsecondary space that socially integrate students, such as including graduate and doctoral students in cohorts or requiring participation in orientation and onboarding programs with the purpose of peer connection (144) that are centered on an evidence-based approach such as cooperative/peer learning.

Policies that can be enacted or implemented on the local, state, or federal level can include:

- Provide funding for repairs and improving the safety of buildings and environments.
- Enhance accessibility such as including more ramps, elevators and placing accessible modes of transportation in primary areas so students do not have to remove themselves from the group in order to maintain access.
- State-supported culturally-sustaining K-12 curricula that affirm cultural identities and support students' abilities to connect (145).

- Create policies that address inequities within school systems such as no tolerance policies for hate crimes and discriminatory language and identify potentially exclusionary practices within institutions.
- Create partnerships between community-based organizations and schools to identify, screen, and refer students at risk for SIL to appropriate services or programming.
- Develop policies that set requirements for virtual learning post COVID-19 – usability, teacher interaction, teacher presence, immediacy, synchronicity, community - that improve social connectedness through virtual learning environments (146).

7.3 Community Summary

Key Stakeholders

School Administrators & Leaders, District Boards of Education, Parent and Parent Teacher Associations, State Departments of Education, Virtual Learning Platforms, Student Activities and Organizations

Potential Approaches to Consider

Focus on Evidence-Based Programs, Virtual Courses for Nontraditional Students, Providing Spaces to Gather, Foster Belonging, Normalize SIL

Questions to Consider:

Entities interested in implementing social connectedness interventions at the community level should ask themselves:

- What is the prevalence of social disconnection in my community today?
- How can community members be encouraged to advocate for and foster a better environment for social connection?
- Do I have evidence of interventions that could improve social connection in my community?
- How will I measure the success of interventions in my community? Do I have a sustainability plan for the intervention?

7.4 Society

Efforts to reach as many individuals and communities as possible should include addressing SIL and social connectedness on the societal level. Societal factors such as norms and policies create a climate in which social connectedness is encouraged or inhibited. Strategies at this level include efforts to promote societal norms of inclusivity, encourage acceptance of diversity, and reduce stigma for underrepresented groups, as well as specific policies within the education sector that may promote social connection or remove existing barriers to its promotion.

Who are the key stakeholders who should be concerned and responsible for taking action to improve social connectedness in society?

National Organizations. According to data from 2016, nearly 70% of the over 3.8M public school teachers in the United States are part of teachers' unions or other associations (147). These organizations, such as the American Federation of Teachers (AFT), with 1.7 million members and over 3,000 local branches, and the National Education Association (NEA), have tremendous national reach and influence to disseminate information to their members and affect change in the education system through lobbying and collective bargaining (124-126). Additionally, these and other national organizations for educators, such as the Association for Supervision and Curriculum Development, Association of American Educators, and National Education Association - and those for educators and families like the National PTA - can coalesce around policy issues and provide teaching resources, best practices, grant funding, and other programming for educators, which can include access to evidence-based SEL programs and ways to encourage connection in virtual and in-person environments that can benefit both students and educators.

Accrediting Bodies. National and state accreditation agencies are responsible for ensuring that the education or training provided by postsecondary institutions such as universities, medical and other graduate programs, and continuing education programs meet quality standards of education (150). Through setting evaluation criteria and evaluating institutions based on those criteria, there may be opportunities for accrediting bodies to include standards on SILC training and programming, particularly for training future clinicians,

educators, and others that can be on the frontline for addressing social isolation and loneliness.

Virtual Learning Platforms. In 2021, Coursera had 82 million registered users and in 2020, LinkedIn Learning had more than 27 million users (151,152). Along with other wide-reaching platforms, these virtual learning sites reach huge swaths of the population and can create content, programs, or norms on the platforms that advance connection and promote awareness of SIL.

Media Outlets. Major media outlets and broadcasting corporations have the potential to influence the social norms that foster social connectedness and promote awareness of social isolation and loneliness.

Television Programming. Education and awareness can be promoted through television programs. Sesame Street, which was estimated to have been viewed by 86 million children in the United States in 2018 throughout its tenure and has over 1 billion views on YouTube, uses educational curriculums based on formative research to advance children’s cognitive, educational, and social competence (153–155). Additionally, new technologies are being developed, such as [ThinkHumanTV](#), that promote social-emotional learning for youth and young adults through programming that takes place while youth are watching movies.

Government Entities. Federal government entities are responsible for crafting policies and laws, and interpreting and implementing those policies, which can increase social connectedness on the national scale. Key stakeholders in the governmental sphere include:

- Congress (e.g., the Senate Committee on Health, Education, Labor, and Pensions, House Committee on Education and Labor, Congressional Community College Caucus).
- Executive branch (U.S. Department of Health & Human Services, Department of Education, Department of Labor).

What are potential approaches to improving social connectedness on the societal level?

Promote Awareness. Mass media awareness campaigns are one method for stakeholders to promote social connectedness in society. Research suggests that media awareness campaigns can influence

perceptions, attitudes, and health behaviors (156). However, it is important to note that systematic reviews have found that there is mixed evidence on the effectiveness of mass media campaigns; the most successful seem to be those that are long-running, intensive, and specifically targeted to a population (157). With that in mind, educational institutions and other forums where education and learning take place can promote public awareness campaigns, which can be modeled on existing campaigns like:

- The UK's "Let's Talk Loneliness" campaign is a nationwide campaign that provides a space for individuals to learn about how they can take action to feel more socially connected and less lonely as well as help others who may be struggling (158).
- Far from Alone, created by the Humana Foundation, is a national campaign focused on reducing the stigma of loneliness through building community and driving conversations around this topic (159).

Media Narratives and TV Programming. Content created and distributed by the media and broadcasting networks can go beyond awareness campaigns to depict healthy social interactions and relationships, depict and normalize the experiences of isolation and loneliness, and teach skills that can protect individuals from experiencing isolation and loneliness such as children's programming that teaches social and emotional learning skills. These efforts can also potentially shift public attitudes and norms of behavior. The Science and Entertainment Exchange, hosted by the National Academy of Sciences, is an example of how content can provide storylines in film and TV that provide subtle, but powerful, messages based on scientific evidence (160). [All the Lonely People](#), a documentary by the Clowder Group about loneliness and resiliency, is an example of how the media can bring this topic into the mainstream and destigmatize loneliness.

Advocacy. Advocating for social connectedness and addressing isolation and loneliness as policy priorities for the education sector has the potential to create systemic changes that address these issues. For example, a U.S. Minister of Loneliness, modeled after the United Kingdom's, could affect change in all sectors of society, including the education sector. Similarly, a role could be established in the Department of Education dedicated to addressing SILC through all federally funded educational institutions and programs.

How is policy relevant to social connectedness at the societal level?

On the societal level, there are opportunities to improve social connectedness through various state and federal agencies and legislative bodies:

- Establishing or continuing to measure meaningful and evidence-based benchmarks and guidelines for effective social and emotional development of students. CASEL outlines components of state and federal policies that advance these goals. Below we outline additional considerations when evaluating the nature of evidence for specific programs.
- Implement data collection processes consistent nationally to capture, measure, and track K-12 SEL and/or SEL skills over time.
- Provide comprehensive employee wellness programs to support educator and staff access to mental health services.
- Provide funding for afterschool programming in K-12 environments and funding for volunteering (including intergenerational volunteering) and peer mentoring programs for other types of educational programs that receive state or federal support.
- On the federal level, establish an Inter-Departmental and Agency National Coordinator of Social Isolation and Loneliness, modeled after the UK's Minister of Loneliness. The inter-departmental agency would lead and coordinate administrative efforts, identify and leverage current federal and state resources, promote awareness, and make recommendations to cabinet officials and the White House to encourage and facilitate social connection throughout all sectors of society, including the education sector. Relatedly, the U.S. Department of Education can create an office or administrator dedicated to advancing social connection and addressing social isolation and loneliness.

7.4 Society Summary

Key Stakeholders

National Organizations, Accrediting Bodies, Virtual Learning Platforms, Media Outlets, Television Programming, Government Entities

Potential Approaches to Consider

Promote Awareness, Media Narratives and TV Programming, Advocacy

Questions to Consider:

Entities looking to promote social connection and/or address societal SIL should consider the following questions:

- What is the political feasibility of the approach?
- Is there bipartisan support? What is the funding support/priority like?
- Large-scale approaches can have complex stakeholders. Am I engaging with the most relevant ones in a meaningful way i.e., seeking feedback, organizing together, etc.?
- What is the evidence base for the various potential solutions?
- Are there robust evaluation techniques and a strategic plan? How am I measuring success? Who will be performing this evaluation and when?
- Have I considered follow-up strategies?

CROSS CUTTING CONSIDERATIONS WITHIN THE FRAMEWORK

The themes presented in this report cut across all levels of the SOCIAL framework. This section provides some cross-cutting perspectives and themes to consider.

A Lifespan / Life Course Approach

Social connection is crucial for an individuals' health throughout their lives. Thus, as demonstrated in Figure 3, the levels of influence in the socio-ecological model (individual, interpersonal, community/organizational, societal) can be further distilled into each developmental stage. This exercise identifies the risks and circumstances that contribute to social isolation and loneliness at different stages of life and raises considerations for evidence and solutions to address SIL and advance social connection in ways that are best suited to each life stage.

Levels of influence across socio-ecological model

Sectors	Individual	Interpersonal	Community / Organizational	Societal
Health	1.1	1.2	1.3	1.4
Transport	2.1	2.2	2.3	2.4
Housing	3.1	3.2	3.3	3.4
Work	4.1	4.2	4.3	4.4
Nutrition	5.1	5.2	5.3	5.4
Environment	6.1	6.2	6.3	6.4
Education	7.1.1 Infancy 7.1.2 Childhood 7.1.3 Adolescence 7.1.3 Adulthood 7.1.4 Middle Adulthood 7.1.5 Older Adulthood	7.1.1 Infancy 7.1.2 Childhood 7.1.3 Adolescence 7.1.3 Adulthood 7.1.4 Middle Adulthood 7.1.5 Older Adulthood	7.1.1 Infancy 7.1.2 Childhood 7.1.3 Adolescence 7.1.3 Adulthood 7.1.4 Middle Adulthood 7.1.5 Older Adulthood	7.1.1 Infancy 7.1.2 Childhood 7.1.3 Adolescence 7.1.3 Adulthood 7.1.4 Middle Adulthood 7.1.5 Older Adulthood
Arts & Leisure	8.1	8.2	8.3	8.4

Figure 3 The SOCIAL Framework can be further segmented within each focus area by stages of life (Holt-Lunstad, 2022)(65).

7.1.1 Infancy Infancy is a developmental period where attachment bonds are formed that can influence relationships and health outcomes throughout life. Thus, an awareness of the effects of poorly formed bonds in infancy and their effects later in life are important. Certain practices, such as skin-to-skin contact have been found to be vital for regulation and social bonding, resulting in better short and long-term health outcomes (161,162). Despite infants' inability to verbally communicate, social development begins through attachments formed during infancy, with heavy reliance on the relationships formed with their primary caregivers. With the most important stage of brain development being the first three years of life, the initiation of social development in infancy through attachment and the development of communication milestones heavily informs social development throughout the remainder of the lifespan (163). A lack of social connection in infancy can not only hinder emotional development, but also has the potential to affect the physical growth of the brain (164).

7.1.2 Childhood. Early childhood experiences are widely known to have long-term consequences on health. Strategies focused on social connection and SIL should pay close attention to the developmental implications of intervening in young populations. Social interaction is very important at all stages of life, but may be especially important with children and youth as social connection and SIL can influence developmental processes and could continue to impact them later in life. Many children have their first social experiences in a school setting through the development of first friendships and the opportunity for connection during school hours at lunch or recess. Additionally, who children are friends with can influence their success throughout life. Connections formed between children from low and high socioeconomic statuses can influence income mobility (a predictor of health and wellbeing) for children from lower-SES backgrounds later in life (165). Educators and caregivers may have the opportunity to assist in fostering social connection and influencing the developmental processes experienced by children. The lack of social connection among children may predispose them to depression (165) and other long-term physical health outcomes (166), emphasizing the need for additional research and additional solutions for addressing SIL in this critical life stage to prevent additional adverse health consequences.

7.1.3 Adolescence and Young Adulthood. As individuals progress through adolescence and early adulthood, many experience rapid changes in their social environment and relationships that come with their own sets of potential new opportunities for social connection, as well as potential experiences that lead to social isolation and loneliness. These may include:

- Transitioning to independence from family of origin
- School challenges (e.g., performance, focus on achievement, anxieties related to bullying/school violence)
- Mental health disorders (e.g., most susceptible/vulnerable, most likely to be diagnosed around this time)
- Physical & emotional development (e.g., hormone/biological changes, puberty, brain development/impulsivity; emotional development/regulation)
- Family dynamics/dysfunction/structure (e.g., communication, single-parent, family support, parenting styles)
- Identity exploration and realization (challenges related to being a minority in terms of race, sexual orientation, gender, etc.)

Further distinctions may also be considered between adolescence and “emerging adulthood” (aged 18-25) –a developmental period associated with identity development, strong peer influence, and moving towards adulthood (167).

Adolescence is a transitional period that can greatly impact feelings of connection. It is important that adolescents are properly supported by their caregivers and their peers. Additionally, because youth in the nation experience many risk factors for disconnection, additional research around and utilization of protective factors for adolescents could ultimately benefit their long-term health and wellbeing (168).

7.1.4 Middle Adulthood. Circumstances including lack of partnering, parenthood, and caregiving that may be more common in middle adulthood have specific SIL considerations. These considerations are important when thinking about the risks and circumstances of educators and students in the middle adulthood stages of their lives.

- Living/being alone after the dissolution of a relationship may increase loneliness, and divorce in middle adulthood may affect loneliness into older age.
- Parenthood may also increase social isolation as new parents are often no longer participating in the same activities or social networks as they were before their child was born (169). The experience of pregnancy and childbirth may also increase levels

of loneliness among new parents (169). There is evidence that parental loneliness may be different from other forms of loneliness and can have direct and intergenerational impacts on parent and child health (170). Further, parents who face more challenging parental issues, such as a child with a chronic illness or disability, are more likely to be negatively impacted by loneliness (171). Adults may also provide care for aging relatives, parents, or a partner. Caregivers may experience SIL as a result of withdrawing from previous activities and social networks in order to care for their family members (51) which can negatively impact health. Thus, effective family-based interventions and support for caregivers may be essential opportunities to prevent and mitigate the risk of SIL and associated health consequences.

- At the same time, due to adults' common roles as parents of children and young adults, and caregivers for older adults, there are opportunities for adults to recognize and support family members experiencing SIL.

7.1.5 Older Adulthood. The older adult phase of life, 65+, often includes losses and life changes that influence an individual's experiences of SIL that are important to consider in designing solutions that work for older adults. Living alone, chronic disease, death of family or a loved one, and physical limitations can contribute to the isolation and loneliness of older adults (167,172,173). As age increases, so too does the risk for physical, functional, and cognitive decline, which are risk factors for SIL. Perceptions of control have been shown to predict change in loneliness in older adults, highlighting the subjective nature of loneliness (16,12). Another important consideration is older adults' technological literacy and the digital divide. In 2022, 61% of older adults owned a smartphone and 75% used the internet as compared to 83% of middle adults (age 50-64) who owned a smartphone and 96% used the internet (160,161). Technology can provide a key opportunity for connection, especially for individuals with mobility and transportation challenges, addressing this digital divide and providing technology skills for older adults who are not yet engaged is an important consideration.

Key Questions to Consider

- Are my strategies appropriate and inclusive of all ages or stages of life?
- Are my strategies sensitive or tailored to potential developmental characteristics that may influence the acceptability, accessibility or effectiveness of solutions?
- How can I expand my current strategies to include other age groups, or intergenerational approaches?

Inclusion, Diversity, Equity, and Access (IDEA)

Inclusion, diversity, equity, and access (IDEA) are essential to the SOCIAL framework. IDEA has the potential to both improve the outcomes of social connection and SIL interventions as well as protect against existing health disparities (174). The concepts of inclusion, diversity, and equity are particularly important in recognizing inequities that still exist in the K-12 educational system and that should be addressed in order to improve social connection and SIL. For example, despite landmark judicial victories such as *Brown vs. Board of Education*, our educational system remains racially segregated, even more than would be expected based upon neighborhood segregation (176–178). Similarly, school-based friendship networks also tend to be racially segregated (179–181). This segregation can create an incomplete understanding of other ethnic or racial groups among White students, which can easily evolve into racial prejudice.

Racial segregation and prejudice in schools give rise to discrimination and related forms of social exclusion, and these negative social processes impact students of color in the United States on a regular basis (182,183). For example, in a national survey, over 80% of Latino youth reported that discrimination and related negative social experiences were a chronic problem (184); more recent surveys found that these negative social experiences exist at similar rates online (185). The chronic stress created by racial discrimination can challenge students' abilities to learn and contributes to chronically low levels of graduation among students of color in America's public schools (186,187). For example, in 2015-2016, the graduation rates for Black (76%), Latino (79%), and American Indian/Alaska Native (72%) students were all lower than that for White students (88%) (188).

A powerful framework for addressing racial prejudice is Contact Theory (189), which specifies the conditions under which social

contact can lead to true social integration among members of different ethnic groups.

These conditions are:

- individuals are brought together as equals, with differences in social status being explicitly minimized;
- pairs or groups of individuals must be given a common goal to direct their interactions, and must be incentivized to work together to achieve their goal;
- the social contact must involve an extended amount of face-to-face interaction time, preferably including mutual disclosure to assist in discovering areas of commonality; and,
- those in positions of authority (i.e., teachers) must explicitly encourage and support positive, collaborative interactions and discourage any hints of ingroup vs. outgroup bias or prejudice.

When these conditions exist, inter-group contact leads to reduced prejudice, and individuals develop more favorable opinions of members of other groups (190). In contrast, when these conditions do not exist, intergroup contact will increase, rather than reduce, intergroup tensions (191).

There are few disseminated interventions that incorporate Contact Theory; one notable example is cooperative or peer learning, which closely mirrors the conditions put forth by Contact Theory. As noted above, cooperative learning can reduce prejudice and enhance cross-ethnic peer relations (17,97) and can reduce disparities in social and academic outcomes for students of color (94). For example, cooperative learning has been found to promote more cross-race interaction, greater cross-ethnic academic support, and more frequent cross-ethnic friendship choices (192–194). In this way, cooperative learning can promote inclusion, equity, and respect for diversity. Educational settings wishing to promote IDEA should explore cooperative/peer learning and/or other methods to support intergroup contact according to the principles of Contact Theory.

Another important IDEA consideration is language. Language barriers have been identified as important predictors of health outcomes (195). With evidence that older adults face challenges accessing and adopting information through online learning tools, inclusive language should also include digital and technological vocabulary and explanations that can be accessed by all regardless of their digital

literacy (196). Campaigns and interventions focused on social connection or SIL should provide content in a variety of commonly spoken languages and include definitions and explanations for digital vocabulary to ensure equitable access.

Key Questions to Consider

- Are my strategies or approaches inclusive? Are there groups that may be over or under-represented in my current strategy?
- Who do I want to reach that my current efforts may be missing?
- Do some groups benefit more from my strategy than others?

Modality

Modality refers to the methods, tactics, and mediums used by an intervention. The modality through which an intervention is delivered can affect the acceptability, accessibility, and scalability of solutions, factors that influence the success of these strategies. These include whether an approach is delivered in-person or remotely, individually or in a group, and whether it involves peers, family members or professionals. Researchers are still exploring which modalities are most effective, for whom, and in which contexts. For example, some studies suggest that group activities may be more effective than one-to-one social support for some groups (197,198).

Interventions that use the modality of technology have become increasingly popular in the last few decades. Technology affords new opportunities that in-person interventions do not (e.g., reaching harder-to-reach populations, abilities to scale), however, these opportunities also come with challenges and the need for further investigation. Researchers continue to investigate how technology may contribute to disconnection and continue to evaluate the efficacy and appropriateness of tech-based interventions for different types of approaches and populations to advance social connectedness.

Within the education sector, research conducted during the COVID-19 pandemic suggests that K-12 and postsecondary students struggled with isolation due to in-person school closures and online learning may have also contributed to experiencing further disconnection. On the other hand, evidence suggests that digital technology training and interventions delivered on technology platforms may be particularly effective for older adults (89,90). Researchers continue to evaluate the efficacy of various tech-based interventions, and more research is needed to understand all the dimensions at play here, in addition to

the impact of technology on forming relationships and connection (199–203).

Key Question to Consider:

- How might the acceptability, accessibility, scalability, and effectiveness of my strategy or approach differ across modalities?
- What are the opportunities for and barriers to fostering social connection through learning environments depending on their modalities?

Evidence / Application

In deciding which approaches or programs to implement to address social isolation and loneliness, decision-makers must take into account the scientific evidence that is available. In evaluating this evidence, we suggest following the lead of the Standards Committee of the Society for Prevention Research (SPR), which set forth detailed criteria by which policymakers and service delivery organizations can weigh the accumulated evidence for various programs (204). The Committee defined criteria by which programs can be judged to be efficacious (i.e., able to deliver significant effects under tightly controlled conditions), effective (i.e., sufficiently documented as to be deliverable by third parties and/or under non-optimal conditions) and ready for dissemination (i.e., systematically organized and supported to ensure program fidelity in large-scale, real-life implementations).

To be considered efficacious, the Standards Committee requires that at least two randomized trials be conducted, which serves to establish that effects can be replicated. The Committee also requires that the research use psychometrically sound measurement instruments (multiple measures for key outcome variables are recommended), valid data collection procedures, and appropriate statistical procedures for data analysis. Finally, the Committee requires that all trials demonstrate consistent positive effects on the outcomes of interest, without serious negative (iatrogenic) effects, and that researchers conduct at least one long-term follow-up to establish whether effects are maintained over long periods of time; the Committee recommends that follow-ups be at least 6 months after the conclusion of the program.

Once a program has been found to be efficacious, additional work must be done to establish that the program is effective. The leap from efficacious to effective requires that a program be implementable

in community settings using delivery personnel that are not part of the core program development staff, so that findings more closely resemble the degree to which a program can be expected to produce effects under less controlled conditions. This sort of real-world demonstration is the first step in taking the program to scale. In addition, program effects must be demonstrated to be “practically significant” rather than just “statistically significant”, which implies that effects (often measured as mean differences) are large enough to warrant the investment of time and money to implement the program.

Finally, a program that is both *efficacious* and *effective* can be deemed to be *ready for dissemination* if clear evidence exists regarding its ability to be implemented with a high degree of fidelity and with similar effect sizes across multiple trials in real-world settings. The program developer must provide an infrastructure for adequately managing and supporting the training of large numbers of implementation staff, including provisions for technical assistance when needed, and cost-benefit information must be made available, including a list of conditions and resources needed to support the long-term sustainability of the program.

It is this last category that should serve as the key guidepost for those looking to implement approaches or programs to address social isolation or loneliness. Without sufficient evidence that a program is *ready for dissemination*, decision-makers in governmental or K-12 sectors risk allocating time and money to programs that won't generate a sufficient impact on this critical issue.

Identified Areas for Additional Research

- Some areas identified that suggest the need for additional research include:
- Understanding the relationship between the quality of online learning for K-12 students and experiences of loneliness, isolation, and disconnection during and post the COVID-19 pandemic.
- Exploring whether curricular SEL approaches that attempt to teach students specific social-emotional skills can modify behaviors that contribute to positive change in the quality of peer relations and, in turn, reduce social isolation and loneliness.
- Developing evidence-based systems and learning environments on university campuses that advance belonging and connection.

- Measuring the prevalence of loneliness and social isolation among participants in alternative education platforms and programs.
- Better understanding the experiences of educators and the development of evidence-based, systematic approaches in primary, secondary, and post-secondary environments that recognize and address educators' SILC.

WHAT ARE POTENTIAL FUNDING STREAMS?

Government Budgets. Government funding for interventions may come from annual government budgets. Budgets have the potential to provide the consistent flow of funds year to year for interventions thereby making them more sustainable; however, if such interventions are not prioritized, then they will likely be underfunded which will reduce their abilities to be successfully executed.

Government Grants/Contracts. Those interested in implementing solutions may seek funding from the U.S. Department of Education, and the Centers for Disease Control and Prevention, as they offer grants to state governments, local governments, and nonprofits. The U.S. Department of Education recently announced over \$220M to support student recovery of academic and mental health (205). The CDC supports local, state, territorial and tribal nation education agencies to improve and promote the well-being and health of the nation's youth.

Governors, State and Local Agencies. Local boards of education, city councils, health and human services departments, Governor's offices, boards of directors at higher education institutions, or equivalent organizations may provide funding for policies or programs that can improve social connection in the education space.

Foundations. Grant databases, like YouthGiving and Grants.gov, may be helpful in identifying potential grantmakers and funders. Additionally, America's Promise Alliance lists grants and funding opportunities related to improving education spaces. Some potential funders and foundations are listed below:

- The Annenberg Foundation
- Bill & Melinda Gates Foundation
- The NEA Foundation

CONCLUSION

Robust scientific evidence has shown that social connection promotes positive physical, behavioral, and mental health outcomes, while social isolation and loneliness significantly increase the risk for a variety of negative outcomes. Additionally, as discussed in the report, SILC has been linked to student academic performance, self-beliefs, and achievement, which can influence individuals throughout their entire lives.

Strategies focused on promoting and strengthening social connection and reducing SIL through educational environments hold tremendous promise for improving health and well-being for both students and educators. Individuals, researchers, educators, policymakers and the many other stakeholders have developed evidence-based strategies that target SILC and are ready for dissemination, providing a pathway forward. While this evidence demonstrates significant promise, gaps within the research literature and the limited scope of some evidence-based programs also suggest untapped opportunities to accelerate progress.

Social Framework in Action

We hope that the SOCIAL Framework and this report on the Education Sector serve as helpful resources for the existing evidence, approaches, and policies and that they have sparked ideas for new evidence-based approaches, policies, and future areas of investigation. We would love to learn about how you may take action based on the information reviewed in this report. Please share more by completing this [brief form](#).

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