



All the lonely people

Education and loneliness

Trends Shaping Education Spotlight #23

Everyone feels lonely some of the time. However, chronic loneliness can impair learning, affect physical and mental health, and is even linked to early death. Loneliness is thus not only a personal matter; it is a public health concern.

Schools provide spaces and opportunities for friendships. By bringing together students from different backgrounds, education can help forge connections across social groups, strengthen social skills and provide access to activities that are meaningful over a lifetime. It can also build skills needed to prevent or break the negative thought processes associated with chronic loneliness.

What is loneliness?

Loneliness is a subjective emotional state, characterised by a longing for human contact. It is the discrepancy between a desired and actual level of social contact (Perlman and Peplau, 1982; Weiss, 1973).

There is an important distinction between being alone and feeling lonely, and it is possible to feel lonely even in a crowd. Rather than actual contact, it is the perception of being isolated that matters most (Tiwari, 2013).

Who feels lonely?

Everyone can feel lonely, from the very young to the very old. Loneliness is most prevalent at two life stages: 1) in adolescence and early adulthood, when youths establish their identity, and 2) during old age (80+), marked by decreased mobility and the loss of loved ones (Qualter et al., 2015). Although prevalence rates vary across countries, the risk can be significant. One US study found that almost two-thirds of college students reported feeling “very lonely” within the last 12 months (ACHA-NCH, 2018).

Loneliness is also more common at specific times or conditions. New mothers, for example, can feel lonely if isolated at home with their baby. Loneliness is also more common in individuals with lower

education or income, economically inactive, and those with a disability or diagnosed mental health condition.

Isolation due to the COVID-19 pandemic also contributed to an increase in reported loneliness. Now that lockdown is easing in many places, it will be important to monitor the evolution of these trends.

“Even before the pandemic, a combination of circumstance and choice left me with fewer close ties than I wanted. Every day I forage for connection, and some days I go hungry.” (Bushey, 2020).

The danger of chronic loneliness

The impact of loneliness depends on its duration and severity. Occasional loneliness, although unpleasant, can prompt reconnection with others (Qualter et al., 2015), thereby reducing the loneliness experienced.

In contrast, chronic loneliness is linked to a number of negative outcomes, including increased anxiety and depression (Hawkey and Cacioppo, 2010), poorer general health (Qualter et al., 2013), reduced academic performance (Benner, 2011), and a higher risk of mortality (Holt-Lunstad et al., 2015).

Loneliness in Japan

In Japan, loneliness leading to social challenges and even kodokushi (solitary deaths), is a major public concern.

In terms of Education, it seems that the Ministry of Education, Culture, Sports, Science, and Technology ([MEXT](#)) has thus far tackled loneliness indirectly, through measures against bullying, suicide, and in support of mental health care for students.

On 12 February, 2021, Japan announced a bold new plan to combat loneliness and isolation directly, with the Regional Revitalisation Minister charged with leading the response ([the Japan times](#)). MEXT is predicted to contribute the education perspective to this effort. New measures against loneliness and isolation will be released soon.

For more information:

<http://www.asahi.com/>

In a recent neuroimaging study, social cues evoked midbrain craving responses similar to hunger after acute social isolation for individuals with high levels of chronic loneliness (Tomova et al., 2020). However, the causal mechanism underlying this is still unclear.

Loneliness in school

School is a common place to meet friends and build relationships outside of the family. In PISA 2018, 75% of students agreed or strongly agreed that they can make friends easily at school.

However, in 2018 over 15% of 15 year old students agreed or strongly agreed that they “feel lonely at school”. This ranges from a high of almost a quarter of students in Lithuania, Turkey and the United States, to less than 8% in the Netherlands.

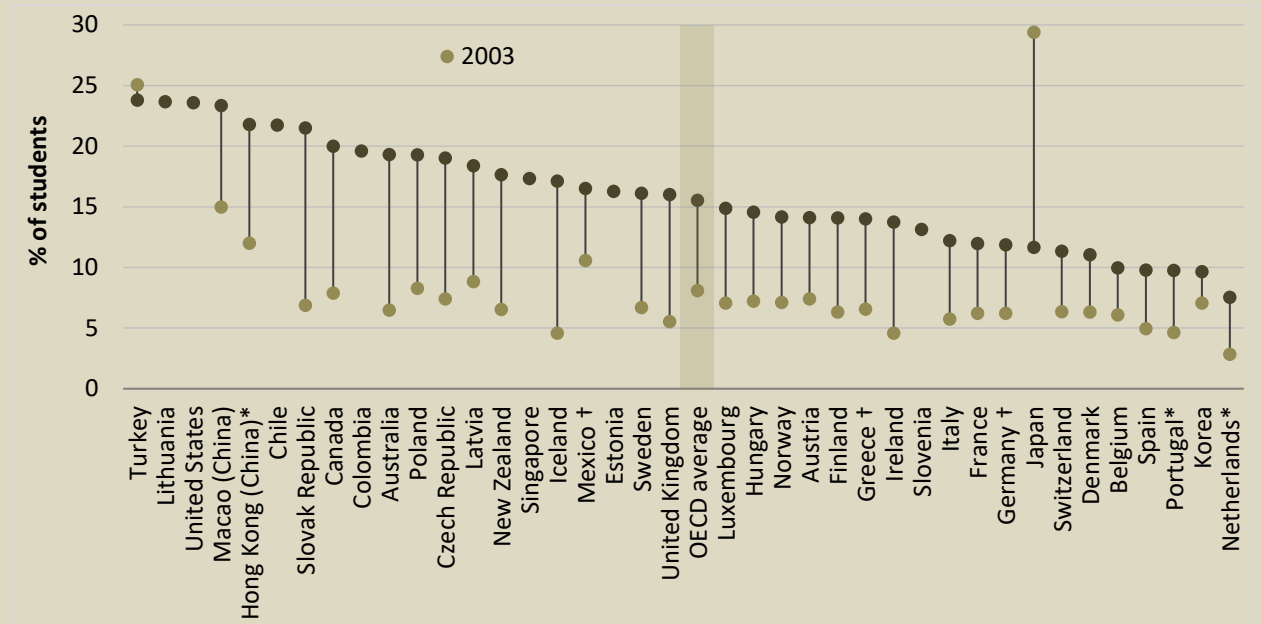
On average, reported loneliness increased in OECD countries from 8-15% between 2003-2018. The biggest increases were seen in the Slovak Republic, Australia and Iceland. Japan, however, had a large decrease in the same time period.

In addition, children with special needs can be more vulnerable to feelings of loneliness than other students (Luftig, 1988), due to difficulty reading and processing social cues important for developing social relationships.

On an individual level, chronic loneliness can activate a self-reinforcing cognitive cycle. In this cycle, a lonely individual is hyper-vigilant and primed to give a negative interpretation to social cues. This in turn elicits behaviours from others that confirm the lonely person's perceptions

Figure 1. Feeling lonely in school (2003-2018)

Percentage of students who agree/strongly agree with the statement "I feel lonely at school"



Note: No symbol means at least 75% of the population was covered. Dagger (†) means at least 50% but less than 75%. * means that the data did not meet the PISA technical standards but were accepted as largely comparable.

Source: OECD, PISA 2003/2018 Databases.

and feelings of disconnection, and leads to further social withdrawal (Cacioppo and Hawkey, 2009).

This vicious cycle can lead to a number of negative consequences such as decreased academic performance (Benner, 2011; Rosenstreich et al., 2015). It is also linked to higher risk of bullying

victimisation in adolescents (Acquah et al., 2016). Being bullied in turn accelerates the risk of depression, anxiety, low self-esteem and sadness among adolescents (Kochel, Ladd, and Rudolph, 2012; Løhre, 2012). On average across OECD countries, 23 % of students reported being bullied at least a few times a month (OECD, 2019a).

Impact on schools and systems

Reported loneliness contributes to having a weaker “sense of belonging” in school (OECD, 2019a). On the system level, students in disadvantaged, rural and public schools were more likely to report a weaker sense of belonging at school than their peers in advantaged, city and private schools, respectively.

In PISA 2018, a one-unit increase in the school-level index of sense of belonging at school (i.e. the school's average of students' sense of belonging) was associated with an increase of 25 score points in reading, after accounting for the student-level index and the socio-economic profile of students and schools (OECD, 2019a).

Feelings of loneliness can also spread through friendship groups (Bzdok and Dunbar, 2020), and are connected to the broader school climate. In PISA 2018, for example, students reported a stronger sense of connectedness to their school when they perceived their relationships with peers as being co-operative.

Loneliness in a digital world?

Digitalisation has often been accused of contributing to the breakdown of human interaction. However, it is now clear that digital friendships tend to supplement,

rather than replace, traditional friendships (Mesch, 2019).

Digital environments can also bring together people from different cultures, bridging geography and time zones in way previously not possible. They can help combat loneliness and exclusion in children who are socially anxious, neurodiverse differently abled, and LGBTQ+.

However, technology has a dark side too. Excessive use is associated with lower life satisfaction and social well-being (Kardefelt-Winthers, 2019). Social media can promote unrealistic and unattainable expectations of the “ideal life”. This

connects to longer term trends: Over the last 30 years, young people report increased pressure to be perfect to gain social approval (Curran and Hill, 2019).

In addressing these issues, understanding the types and uses of the media, by whom, in what context and for what purpose are all crucial. Moving beyond a narrow potential diagnosis caused by technology to addressing a group of symptoms that manifests itself in the interactive media environment is key. Medical practitioners can then seek to treat the underlying condition, rather than only the media use (Bediou, Rich, Bavalier, 2020).



The big picture

Loneliness and age

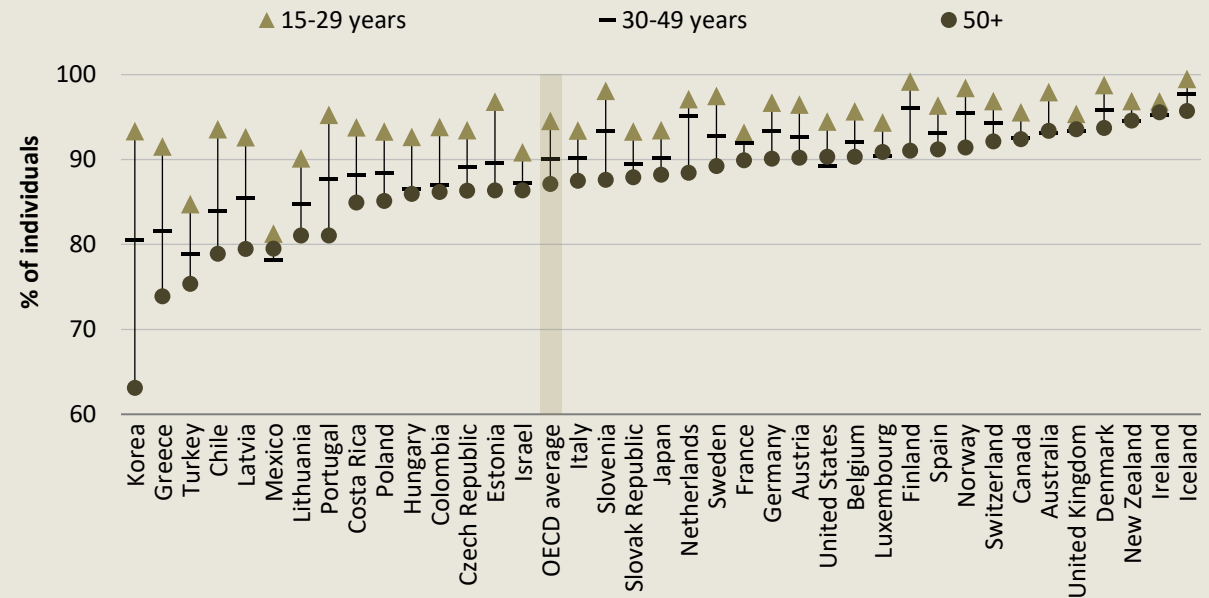
Comparing rates of loneliness over time is difficult, as comparable data across the lifespan is limited. However, a number of trends, such as subjective well-being and amount of social support (e.g. relatives or friends that can be relied upon to help in times of need) are linked to loneliness.

See Figure 2 →

On average across the OECD, perceived social support declines with age. This is particularly notable for countries like Korea, Greece, Turkey, Chile and Latvia. This pattern is likely to be stronger for the most elderly (80+ years) as they experience shrinking social circles and the death of peers. As our societies age and elders are more and more capable of living autonomously until an advanced age, weak social connection and support could lead to increased loneliness.

Figure 2. Older people have less social support

Share of people reporting that they have relatives or friends that can help them in times of need, by age, 2010-2018 pooled data



Source: OECD (2020), *How's Life? 2020: Measuring Well-being*, <https://doi.org/10.1787/9870c393-en>.

Role of education in preventing and responding to loneliness

Schools play a key role in providing the space and opportunity to develop skills to prevent and combat loneliness. They can also help identify, protect and respond to students experiencing chronic loneliness.

Encouraging students to talk about loneliness helps to reduce stigma and raise awareness of warning signs and prevention strategies. It can also help to challenge myths, for example, that you can't be lonely in a crowd, or that popular students cannot be lonely. These are unhelpful and damaging assumptions that can prevent students from reaching out and teachers from identifying students that need help.

Providing space, support and building skills

There are four main approaches to prevent and reduce loneliness (Masi et al, 2011):

- 1) improving social skills (e.g. teaching children how to initiate maintain and end interactions, conflict resolution, and social problem-solving)
- 2) enhancing social support (e.g. for children with recently divorced parents or other family trauma)
- 3) increasing opportunities for social interaction (design of space, instructional strategies)
- 4) addressing abnormal cognition (e.g. impaired executive function, emotional regulation, biases in attention and cognition such as non-realistic appraisals and self-defeating attributions).

Despite the number and variety of loneliness interventions among children and adolescents, there is only one meta-analysis of their effectiveness.

The one meta-analysis focused specifically on children and youth (Eccles and Qualter, 2021) revealed that the different types of interventions were moderately effective. However, serious gaps in the evidence base exist. For example, interventions often targeted youth considered by others to be "at risk", but rarely those who reported loneliness themselves. Nor were chronic and occasional loneliness distinguished.

The authors argue that future interventions should combine universal programmes for occasional loneliness and targeted interventions for chronic loneliness. They should also focus on effectiveness, including the longer-term outcomes of the interventions (Eccles and Qualter, 2021).



Building a culture

The success of programmes depends on individuals as well as the underlying context. Darling-Hammond et al (2020) argue that all interventions must be delivered as part of a school culture that works to support holistic student well-being, including positive relationships and interactions, trust, and thoughtful development of student agency.

One interesting example is the Buddy Bench, which is a special bench in the play area for anyone looking for a friend. Originating in Norway and Germany, this initiative has been shown to be effective in the UK (Arthur, 2004) and the USA (Griffin et al, 2017).

However, some school heads report that it served to isolate lonely children in their school, further exposing them to ridicule or bullying. This again, speaks to the importance of the broader school context and culture.

Overall, as the causes of loneliness are nuanced and individual, more work connecting specific therapies and interventions is needed.

Helping teachers help students

Particular teaching and classroom practices can help cultivate a positive climate, for instance deliberate efforts to enhance cooperation and build self-esteem and relational skills.

As part of a broader shift in teachers' roles from one focused on the delivery of academic content towards more holistic care, teachers increasingly agree that student well-being is important (Figure 3).

More generally, positive teacher-student relationships are associated with greater student well-being at school, including student sense of belonging (OECD, 2019a).

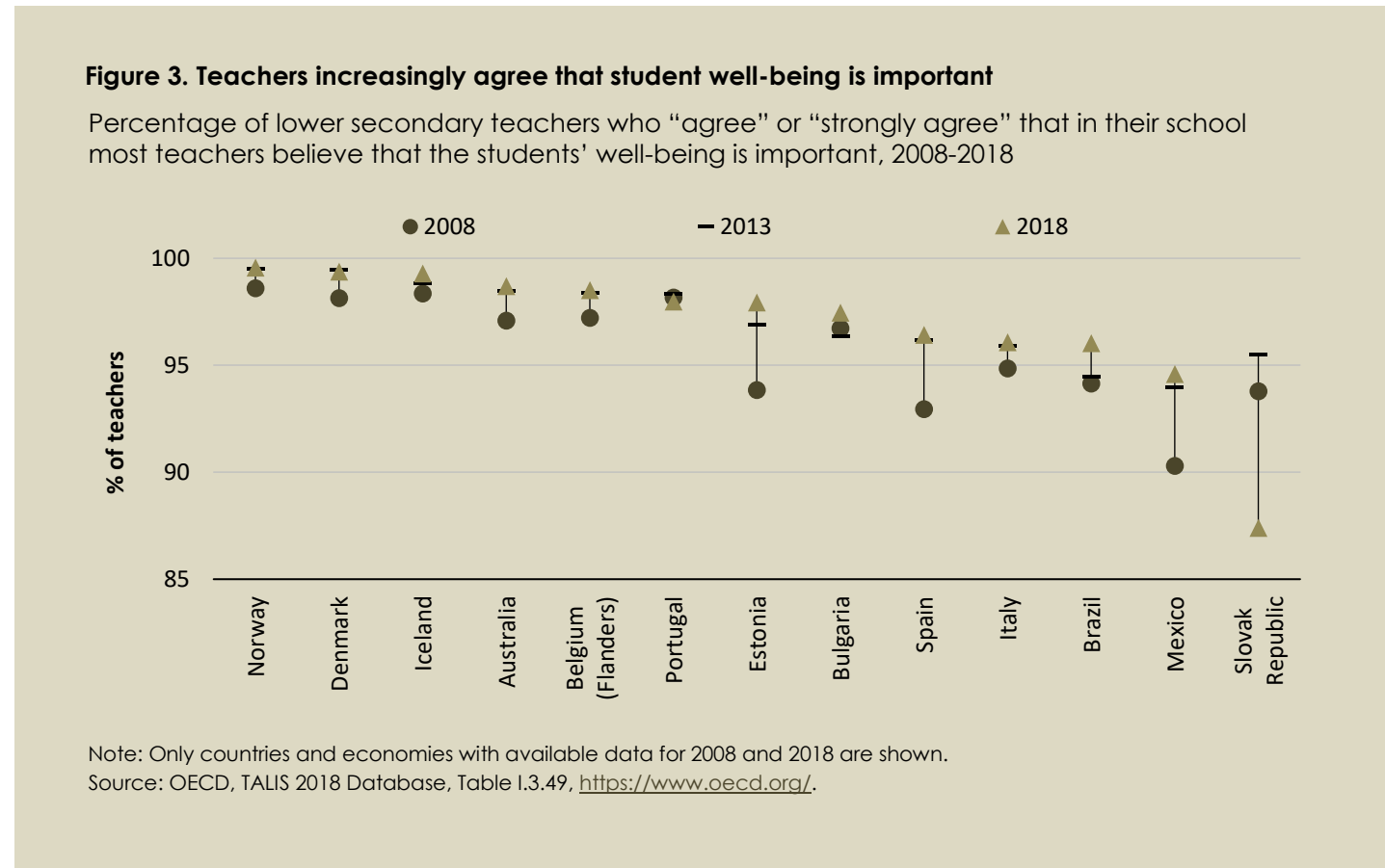
However, a number of studies suggest that it is challenging for teachers to identify loneliness in children and adolescents (Geukens, et al., 2021). These authors highlight a Dutch programme, *Join Us*,

which aims to provide information, raise awareness, and encourage lonely students to talk about their feelings.

This is an important first step. Teachers must also feel equipped to help, however. Galanaki and Vassilopoulou (2007) highlight a number of studies suggesting that teachers themselves are not always

very confident in their ability to help lonely students.

They highlight calls for more support and targeted teacher training and on-going professional development on identifying and helping lonely students, as part of a focus on student emotional well-being.



Connecting to others outside school

Volunteering and connecting to community clubs and cultural associations can also develop networks and relationships. Sports programmes are one popular example, with participation in sports associated with higher levels of perceived social competence and lower levels of loneliness (Haugen, et al., 2013).

Participating in these initiatives not only hones specific abilities (e.g. athletic skills in sports clubs or creative skills in theatre societies), it also builds socio-emotional skills while simultaneously creating social connections for the long run.

More broadly, the decline of community institutions such as public libraries or community centres over past decades has been argued to contribute increasing isolation and a loss of common purpose. There are worries that this contributes to increased loneliness, mental health disorders, and populism.

Lifelong learning for senior citizens

Adults, including seniors, are students and learners as well as teachers and mentors. Lifelong learning increases well-being of older adults (Narushima, Liu, and Diestelkamp, 2018), helping them stay

active and learn new things while also providing opportunities for social interaction (Leanos et al., 2020).

Many lifelong learning initiatives take place on the job or connected to work. For older seniors, Elderhostel and The University of the Third Age ([U3A](#)) are two examples of international initiatives that offer targeted learning opportunities, classes and programmes.

Supporting elders' access to learning opportunities should recognise the circumstances of the most elderly as well as younger seniors (Boudiny, 2013). This includes situations of dependency, isolation and poor health.

Bridging generations

Intergenerational programmes can help decrease loneliness, increase well-being and neighbourhood trust (Murayama et al., 2019) for both older and younger participants (Giraudeau and Bailly, 2019 for review).

For youth, these programmes can help develop positive attitudes toward older adults (Meshel and McGlynn, 2004). For elderly people, they are linked to increased self-esteem (Gamliel and Gabay, 2014), improved memory function (Newman, Karip, and Faux, 1995).

A common theme is having high school students assist in increasing digital literacy for older adults (Australian Government, 2021). Through mutual support, these initiatives can help decrease loneliness and enhance well-being for all. Similar initiatives exist beyond the education realm, for example, with intergenerational co-living arrangements.

Lean on each other (Denmark)

[Elderlearn](#) aims to combat loneliness among frail seniors in Denmark while providing the opportunity to use their skills to contribute to tackle social challenges. It works by connecting isolated elders with immigrants in the process of learning Danish for weekly visits. This boosts connection at the same time as it builds language skills.

Through conversation, Elderlearn provides an opportunity for frail older people to help others and be a resource for society through their volunteer efforts, regardless of mobility limitations.

For more information:

<https://www.ifa-abstracts.com/>

Teachers as isolated professionals

Does loneliness play out in the professional sphere as well? Regular conversations with peers are part of actively growing and developing as professionals. Unfortunately, the most recent TALIS data suggest that this is still not widespread (OECD, 2020).

Most teachers work individually in classrooms with few opportunities to collaborate (Figure 4). On average across the OECD, only 61% of teachers regularly discuss the development of students with colleagues, and less than half exchange teaching materials frequently.

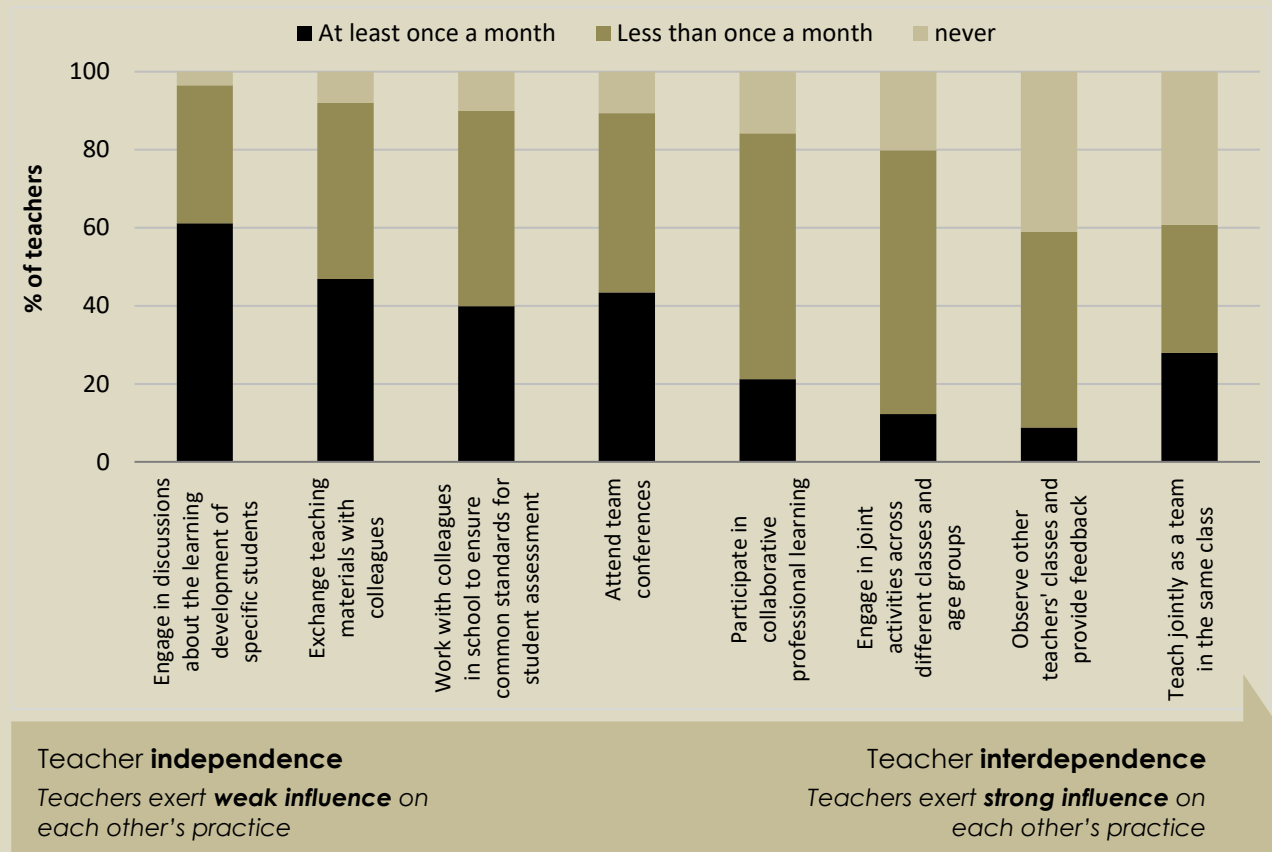
Active collaboration on pedagogy, for example through joint teaching or peer observation of classroom teaching, is even rarer: 40% of teachers on average across OECD countries report having “never” done this.

About 4 in 10 teachers have never observed other teachers’ classes to provide feedback nor taught jointly as a team in the same class

The switch to online teaching during school closures due to COVID-19 raises the question of whether this has increased or decreased teacher isolation.

Figure 4. Teachers’ collaboration with colleagues

Percentage of lower secondary teachers who report engaging in the following collaborative activities in their school with the following frequency, OECD average-31, 2018



Source: OECD, TALIS 2018 Database, Table II.4.1. <https://www.oecd.org/> and Martínez-Orbegozo, 2020.

Developing a collaborative teaching climate

School leaders play a key role in ensuring that professional collaboration is a defining characteristic of the day-to-day functioning of the institution.

This may extend to all areas of school decision-making: teachers' own reports suggest that when teachers are allowed to participate in school decisions they also tend to engage in collaborative activities more frequently (OECD, 2019b).

Teacher collaboration may be seen as occurring in a continuum: from infrequent exchanges to recurrent practices supporting peer-based, horizontal accountability and ongoing professional learning

Special support for novice teachers – but not only

Institutional practices are particularly relevant to early career teachers. Novice teachers feel less confident in their ability to teach (OECD, 2019b). Support through mentors, induction activities, and sufficient time for observation, practical experimentation and socialisation with peers is thus a key component of on-the-

job research and reflective practice (Paniagua and Sánchez-Martí, 2018).

However, isolation and loneliness can be experienced by anyone, even the most experienced teacher. And while teacher collaboration starts in schools, it can extend to broader communities of learning.

Participating in a professional network and professional development programmes allows teachers to develop collective knowledge and deepen professional ties (Révai, 2020).

The lonely school

Moving from the level of the teachers, schools themselves can be lonely. This can be literal: for example, isolated rural schools that lack connections to a broader community and network.

However, just as with people, urban schools can also be lonely. Despite being surrounded by other institutions and a dynamic metropolitan environment, teachers and school leaders in urban schools can experience loneliness, particularly if they feel alone or unsupported with their particular challenges.

And lastly, there is another kind of loneliness, one that develops from being in a hermetically closed space (in this case, a school). Even if the teachers within the

school collaborate, educators in “closed” schools can still feel lonely, isolated from new ideas and ways of doing.

Boundary crossing (i.e. different forms of interaction among different communities of practice) is important to bring new ideas and propose new solutions to challenges. Being exposed to other ways of thinking and doing things is also a key driver of risk taking and innovation (Akkerman and Bakker, 2011).

Networks across schools – both virtual and physical – provide teachers with new connections and resources, whether social or professional. These can be the key to maintaining well-being and reducing the isolation of educators in the long run.



Towards the future

Questions for future thinking:

1. Education offers a powerful tool to fight loneliness. However, schools have limited time and resources. How can schools or policy makers prioritise combatting loneliness? Do they need to **collaborate** with others such as family or other sectors? If so, how?

2. What changes can be considered to prevent or address **loneliness throughout life**? What kind of cooperation is necessary for education and other systems to cope with the changes?

3. Older seniors report increased loneliness as isolation increases with the death of peers. Could **technology** provide a solution? Could we imagine a scenario where all living adults create an avatar, complete with video and voice, which can be programmed to continue interacting with friends after death?

References

- Acquah, E. O., Topalli, P. Z., Wilson, M. L., Juntila, N., and Niemi, P. M. (2016), "Adolescent loneliness and social anxiety as predictors of bullying victimisation", *International Journal of Adolescence and Youth*, Vol/3, pp. 320-331, <https://doi.org/10.1080/02673843.2015.1083449>.
- Akkerman S. and Bakker, A. (2011), "Boundary Crossing and Boundary Objects", *Review of Educational Research*, Vol. 81, pp. 132-169, <https://doi.org/10.3102/0034654311404435>.
- [ACHA-NCH] American College Health Association-National College Health, (2018), "American College Health Association-National College Health Assessment II: Reference Group Executive Summary Fall 2017", <https://www.acha.org/>.
- Arthur, L. (2004), "Looking out for each other: Children helping left out children", *Support for Learning*, Vol. 19, pp. 5- 12, <https://doi.org/10.1111/j.0268-2141.2004.00311.x>.
- Australian Government, (2021), "Be Connected – improving digital literacy for older Australians", <https://www.dss.gov.au/seniors/be-connected-improving-digital-literacy-for-older-australians>.
- Bediou, B., M. Rich and D. Bavelier (2020), "Digital media and cognitive development", in Burns, T. and F. Gottschalk (eds.), *Education in the Digital Age: Healthy and Happy Children*, OECD Publishing, Paris, <https://doi.org/10.1787/3b071e13-en>.
- Benner, A. D. (2011), "Latino Adolescents' Loneliness, Academic Performance, and the Buffering Nature of Friendships", *Journal of Youth and Adolescence*, Vol 40/5, pp. 556-567, <https://doi.org/10.1007/s10964-010-9561-2>.
- Boudiny, K. (2013), "'Active ageing': from empty rhetoric to effective policy tool", *Ageing Soc*, Vol. 33/6, pp. 1077-1098, <https://doi.org/10.1017/S0144686X1200030X>.
- Burns, T., and Gottschalk, F. (eds.) (2019), "Educating 21st Century Children: Emotional Well-being in the Digital Age, Educational Research and Innovation", *OECD Publishing, Paris*, <https://doi.org/10.1787/b7f33425-en>.
- Bushey, C. (2020), "Loneliness and me", <https://www.ft.com/>.
- Bzdok, D., and Dunbar, R. (2020). "The Neurobiology of Social Distance", *Trends in Cognitive Sciences*, Vol. 24/9, pp. 717-733, <https://doi.org/10.1016/j.tics.2020.05.016>.
- Cacioppo, J. T., and Hawkley, L. C. (2009), "Perceived social isolation and cognition", *Trends Cogn Sci*, Vol. 13/10, pp. 447-454, <https://doi.org/10.1016/j.tics.2009.06.005>.
- Curran, T., and Hill, A. P. (2019), "Perfectionism is increasing over time: A meta-analysis of birth cohort differences from 1989 to 2016", *Psychol Bull*, Vol. 145/4, pp. 410-429, <https://doi.org/10.1037/bul0000138>.
- Darling-Hammond, L., et al, (2020), "Implications for educational practice of the science of learning and development", *Applied Developmental Science*, Vol. 24/2, pp. 97-140, <https://doi.org/10.1080/10888691.2018.1537791>.
- Eccles, A. M., and Qualter, P. (2021), "Review: Alleviating loneliness in young people – a meta-analysis of interventions", *Child Adolesc Ment Health*, Vol. 26/1, pp. 17-33. <https://doi.org/10.1111/camh.12389>.
- Galanaki, E. P., and Vassilopoulou, H. D. (2007), "Teachers and children's loneliness: A review of the literature and educational implications", *European Journal of Psychology of Education*, Vol. 22/4, pp. 455-475, <https://doi.org/10.1007/Bf03173466>.
- Gamliel, T., and Gabay, N. (2014), "Knowledge Exchange, Social Interactions, and Empowerment in an Intergenerational Technology Program at School", *Educational Gerontology*, Vol. 40/8, pp. 597-617, <https://doi.org/10.1080/03601277.2013.863097>.
- Giraudeau, C., and Bailly, N. (2019), "Intergenerational programs: What can school-age children and older people expect from them? A systematic review", *Eur J Ageing*, Vol. 16/3, pp. 363-376, <https://doi.org/10.1007/s10433-018-00497-4>.
- Griffin, A. et al, (2017). The effects of a buddy bench on elementary students' solitary behavior during recess. *International Electronic Journal of Elementary Education*, Vol. 10/1, pp. 27–36, Retrieved from <https://www.iejee.com/index.php/IEJEE/article/view/296>.
- Haugen, T., Safvenbom, R., and Ommundsen, Y. (2013), "Sport Participation and Loneliness in Adolescents: The Mediating Role of Perceived Social Competence", *Current Psychology*, Vol. 32/2, pp. 203-216, <https://doi.org/10.1007/s12144-013-9174-5>.
- Hawkley, L. C., and Cacioppo, J. T. (2010), "Loneliness Matters: A Theoretical and Empirical Review of Consequences and Mechanisms", *Annals of Behavioral Medicine*, Vol. 40/2, pp. 218-227, <https://doi.org/10.1007/s12160-010-9210-8>.

Holt-Lunstad, J., et al. (2015), "Loneliness and Social Isolation as Risk Factors for Mortality: A Meta-Analytic Review", *Perspectives on Psychological Science*, Vol. 10/2, pp. 227-237, <https://doi.org/10.1177/1745691614568352>.

Kochel, K. P., Ladd, G. W., and Rudolph, K. D. (2012), "Longitudinal Associations Among Youth Depressive Symptoms, Peer Victimization, and Low Peer Acceptance: An Interpersonal Process Perspective", *Child Development*, Vol. 83/2, pp. 637-650, <https://doi.org/10.1111/j.1467-8624.2011.01722.x>.

Leanos, S., et al. (2020), "The Impact of Learning Multiple Real-World Skills on Cognitive Abilities and Functional Independence in Healthy Older Adults", *J Gerontol B Psychol Sci Soc Sci*, Vol. 75/6, pp. 1155-1169, <https://doi.org/10.1093/geronb/gbz084>.

Løhre, A. (2012), "The impact of loneliness on self-rated health symptoms among victimized school children", *Child Adolesc Psychiatry Ment Health*, Vol. 6/20, <https://doi.org/10.1186/1753-2000-6-20>.

Luffig, R. L. (1988), "Assessment of the perceived school loneliness and isolation of mentally retarded and nonretarded students", *Am J Ment Retard*, Vol. 92/5, pp. 472-475.

Mesch, G. (2019), "Online and offline relationships", in Burns, T. and F. Gottschalk (eds.), *Educating 21st Century Children: Emotional Well-being in the Digital Age*, OECD Publishing, Paris, <https://doi.org/10.1787/11f6c5b4-en>.

Meshel, D. S., and McGlynn, R. P. (2004), "Intergenerational contact, attitudes, and stereotypes of adolescents and older people", *Educational Gerontology*, Vol. 30/6, pp. 457-479, <https://doi.org/10.1080/03601270490445078>.

Murayama, Y., et al (2019), "The impact of intergenerational programs on social capital in Japan: a randomized population-based cross-sectional study", *Bmc Public Health*, 19, <https://doi.org/10.1186/s12889-019-6480-3>.

Narushima, M., Liu, J., and Diestelkamp, N. (2018), "Lifelong learning in active ageing discourse: its conserving effect on wellbeing, health and vulnerability", *Ageing Soc*, Vol. 38/4, pp. 651-675, <https://doi.org/10.1017/S0144686X16001136>.

Newman, S., Karip, E., and Faux, R. B. (1995), "Everyday Memory Function of Older Adults - the Impact of Intergenerational School Volunteer Programs", *Educational Gerontology*, Vol. 21/6, pp. 569-580, <https://doi.org/10.1080/0360127950210603>.

OECD (2019a), "PISA 2018 Results (Volume III): What School Life Means for Students' Lives, PISA", OECD Publishing, Paris, <https://doi.org/10.1787/acd78851-en>.

OECD (2020), "TALIS 2018 Results (Volume II): Teachers and School Leaders as Valued Professionals TALIS", OECD Publishing, Paris, <https://doi.org/10.1787/19cf08df-en>.

Paniagua, A., and Sánchez-Martí, A. (2018), "Early Career Teachers: Pioneers Triggering Innovation or Compliant Professionals?", *OECD Education Working Papers*, No. 190, OECD Publishing, Paris, <https://dx.doi.org/10.1787/4a7043f9-en>.

Pertman, D., and Peplau, L. A. (1982), "Theoretical approaches to loneliness". A Wiley-interscience publication: John Wiley & sons.

Qualter, P., et al. (2013), "Trajectories of loneliness during childhood and adolescence: Predictors and health outcomes", *Journal of Adolescence*, Vol. 36/6, pp. 1283-1293, <https://doi.org/10.1016/j.adolescence.2013.01.005>.

Qualter, P., et al. (2015), "Loneliness Across the Life Span", *Perspectives on Psychological Science*, Vol. 10/2, pp. 250-264, <https://doi.org/10.1177/1745691615568999>.

Révai, N. (2020), "What difference do networks make to teachers' knowledge?: Literature review and case descriptions", *OECD Education Working Papers*, No. 215, OECD Publishing, Paris, <https://dx.doi.org/10.1787/75f11091-en>.

Rosenstreich, E., et al. (2015), "Hope, optimism and loneliness among first-year college students with learning disabilities: a brief longitudinal study", *European Journal of Special Needs Education*, Vol. 30/3, pp. 338-350, <https://doi.org/10.1080/08856257.2015.1023001>.

Tiwari, S. C. (2013), "Loneliness: A disease?", *Indian Journal of Psychiatry*, Vol. 55/4, <https://doi.org/10.4103/0019-5545.120536>.

Tomova, L., et al. (2020), "Acute social isolation evokes midbrain craving responses similar to hunger", *Nat Neurosci*, Vol. 23/12, pp. 1597-1605, <https://doi.org/10.1038/s41593-020-00742-z>.

Weiss, R. S. (1973), "Loneliness: the experience of emotional and social isolation". Cambridge, MA: The MIT Press.

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