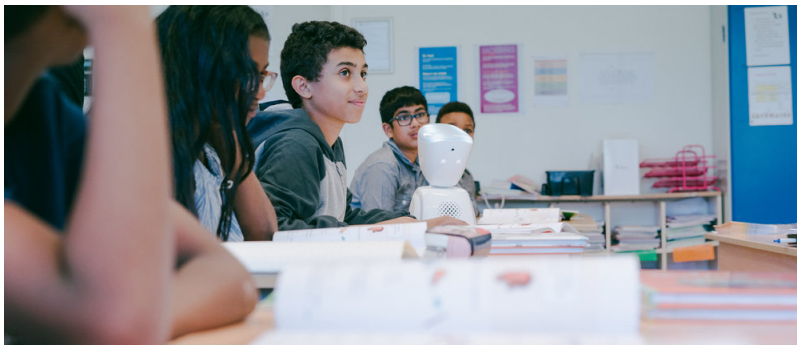
Impact of AV1 on children with long-term illness and school absence



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Every child, without any exception whatsoever, is entitled to receive education (UN Declaration, 1959).

Effects of school absence on mental health and school performance:

Every year, more than 500 000 European children with long-term illnesses are unable to attend school for months at a time. The research is crystal clear: school absence resulting from illness is a problem with major educational and social consequences. The absence correlates with grade retention, achievement gaps and dropout rates. Not least, disconnection from peers due to illness have profound effects on children's social and emotional wellbeing (Maes et al, 2017; Gilmour et al, 2015; Hopkins et al, 2014; Ginsburg et al, 2014; Clic Sargent, 2012; Shiu, 2001). For example, when returning to school after cancer treatment, 50 % of children and adolescents experience social, psychological or school-related problems, necessitating that 20 % of these students repeat a grade (Weibel, et al, 2020). Psychosocial problems, such as social exclusion, fear of peer rejection and bullying, are some of the foremost reasons for their educational difficulties.

How AV1 and telepresence solutions help reconnect children with peers and education

The importance of maintaining a connection to school to mitigate the known educational and social problems is frequently highlighted in the literature (See for example: Gilmour et al, 2015; Hopkins et al, 2014; Dockett, 2004; Shiu, 2004). Many European countries give students a statutory right to receive homeschooling after a certain number of absence days, however, studies show that few students actually receive this (Weibel et al, 2020). Students also want to experience the 'normalcy' that comes with attending school (Mintz e 2018). Consequently, information and communication technologies (ICT) are described as one of the most promising prospects for connecting students with significant illness or injury with school (Gilmour, 2015; Hopkins et al, 2014; Wadley, 2014).

A lot of research has been done on ICT telepresence solutions in general. And studies show that telepresence solutions, like AV1, enhance the efforts of home/hospital teachers, particularly by enabling peer social interaction. All studies referenced here demonstrate that the benefit to children from telepresence solutions, such as AV1, is the maintenance and reestablishment of social interaction with classmates and engagement in school work (Soares, 2017; Newhart, 2016; Thommesen, 2017; Breivik, 2017, Jones et al, 2009). Students using telepresence solutions feel included in class, and classmates refer to the robot by the homebound child's name as opposed to calling it a device or a robot. Parents also note significant increases in their children's interest and happiness at being with their friends, both increasing well-being and feelings of relatedness (Newhart, 2017).

Studies of AV1

Since 2016, AV1 has been part of a number of objective and independent research projects. The initial pilot testing of AV1 was part of University of Oslo PhD-candidate J. Børstings research and dissertation on suitable technology for children and youth with CFS/ME. Børsting followed 9 children using AV1, and published 4 articles and a book chapter from her findings. The first article from 2016, concludes that AV1 (which at this point was at a prototype stage) solves the problem of access to education for children with CFS/ME better than alternative solutions; ***"Of the children I followed, several had not attended school in a long time when they first received the robot. Some had been out of school for over six months. After they received AV1, all of them (9 children) participated regularly, on their own terms."*** (2016). Børsting's later publication showed that AV1 enabled the children to have prolonged and frequent presence in everyday social and intimate moments, which supported their connectedness, and reduced their sense of isolation and loneliness (2019).

AV1 is also part of an ongoing research project at Oslo Metropolitan University. Postdoc researcher L. Johannessen and Professor M. Haldar, have conducted 141 qualitative interviews with 37 AV1 users and their parents, teachers and head teachers. The children were from kindergarten-age to upper secondary school-age, and suffered from illnesses such as cancer, CFS/ME or had operations-related absence; ***"The interviews show that many of the students were happy with a tool like AV1, and that they experienced a great need for a tool like AV1"*** (p. 15). Their findings support AV1's use as a social and educational tool; the robot helped reduce their loneliness, and helped satisfy a 'thirst' for social interaction. The researchers also found that the robot enables a presence without the draining of energy that physically being at school often entails, and some students spent what energy they saved on socialising after school. Other students valued the access it gave to the classroom, which for some children made it easier to follow a normal study progression. The researchers also found that AV1 lowers the barriers and worries related to returning to school, because it gives the users a feeling of having been partly present throughout the absence period (Johannessen & Haldar, 2020).

The largest hospital in Denmark, Rigshospitalet, has also been conducting a study on AV1 and cancer patients. Weibel and her colleagues conducted interviews with 4 individual users, focus group interviews and participant observations. The paper finds that ***"the telepresence robot, AV1, allowed hospitalized children and adolescents with cancer to remain socially and academically connected with their classes despite being physically present"*** as it ***"creates inclusive processes allowing the child to be invited into social interactions"*** and allows classmates to ***"show empathy and care"*** about the AV1-users situation (Weibel et al., 2020). In sum, the studies show that AV1 supports the children's social and academic connection. The robot fills a social and educational need for the children and enables participation in class, which makes it easier returning to school after periods of absence.

Observations on the users of AV1

As of August 2020, more than 1250 children in the UK, Germany, France, the Netherlands, Switzerland, Belgium, Luxemburg, Norway, Sweden, Denmark and Finland are using AV1 actively. Their age range from 6 (http://www.raumnes.no/nyheter/marte-folger-lek-og undervisning-via-robot-1.2262696) to 25 (https://www.ba.no/nyheter/vitenskap-og-teknologi/medisin-og-helse/marthe-25-folger-undervisningen-via-en-robot-i-klasserommet/s/5-8-527487?key=2017-03-

02T11:49:07.000Z/retriever/5ef6525f18704db9c20de2466b590f4eafc12daf). To this date, AV1 has been part of more than 15 pilot studies and used by children with a large variety of diagnoses including ME/CFS, cancer, cerebral palsy, anxiety, burn-out, tick-borne illnesses, gastroschisis (gastrointestinal illness), viral infection and rare conditions including autoimmune diseases and Ehlers-Danlos syndrome. However, common for all children using AV1 is that their diagnosis has resulted in absence from their everyday lives.

Explore AV1 →
(https://www.noisolation.com/global/av1/)

AV1 – the robot for children with long-term illness →
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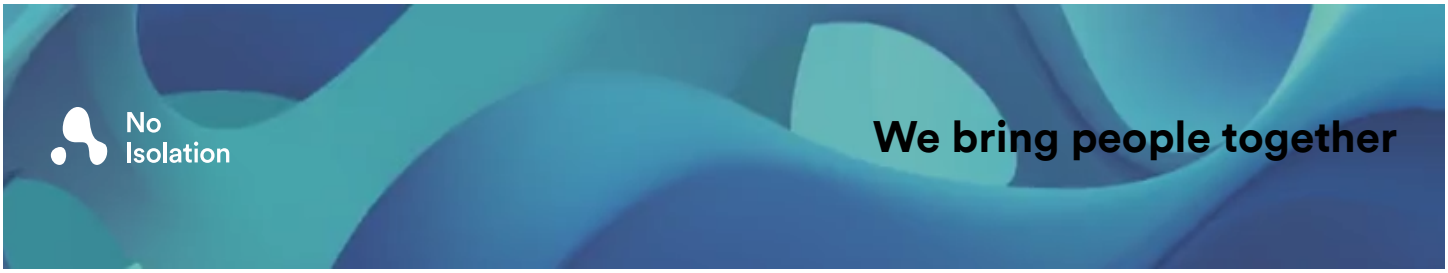

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