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## Health literacy in an age of technology – schoolchildren’s experiences and ideas

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### ABSTRACT

The aim of this paper was to explore opportunities to promote schoolchildren’s health literacy based on their own experiences and ideas. Research suggests the necessity for health literacy to be included into the school curriculum, and to view health promotion as part of lifelong learning. There is also a need to involve schoolchildren in developing health literacy so they can find strategies to improve their health. However, there is limited research on the best practices of health literacy, based on the schoolchildren’s own experiences and ideas. In this article, a secondary analysis of the data from two previous studies was performed. In total, 540 schoolchildren aged 10–15 from the northern regions of Finland, Sweden, Norway and Russia participated by sharing their experiences in written reflections or by completing an open question in a survey. Two questions were posed to gather the data in the secondary analysis: ‘What signifies the schoolchildren’s experiences of health and well-being?’ and ‘What are the strategies to promote health and well-being suggested by the schoolchildren?’ The results show that people and interactive technology support schoolchildren’s health literacy. The schoolchildren highlighted the importance of being cared for, confirmed by and connected to others. They also stressed the importance of being in an environment that enabled them to participate and thus be engaged, which made them empowered to take care of their own health and well-being. In addition, they identified empowering aspects of technology as a tool in health promotion that created health opportunities for the schoolchildren.

### ARTICLE HISTORY

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### KEYWORDS

Health promotion; health literacy; school; student voice; interactive technology

## Introduction

The aim of this paper was to explore opportunities to promote schoolchildren’s health literacy based on their own experiences and ideas. The arguments to focus on health literacy in the field of health promotion and health education have increased in recent years. The World Health Organization (2013) argues that health literacy ‘entails people’s knowledge, motivation and competences to access, understand, appraise and apply health information

in order to make judgments and take decisions in everyday life concerning health care, disease prevention and health promotion to maintain or improve quality of life during the life course' (4). According to Nutbeam (2008), health education can be used to increase health literacy to enable individuals to exert greater control over their health. He connects health literacy skills to personal, social, and environmental determinants of health, which is consistent with Marmout's (2009) arguments for reducing disparities and inequities of health by empowering people. Fetro (2010) argues that all dimensions of health should be acknowledged, namely physical, mental, social and existential well-being. Melder (2011) describes existential health referring to the WHO's survey (2002) about self-rated health and quality of life, including, for example, aspects such as meaning and purpose in life, experience of awe and wonder, wholeness and integration, inner peace, hope, optimism and faith. In addition, Ringsberg, Olander, and Tillgren (2015) argue that health literacy is a concept that is closely related to learning and education and along with income, distribution of income, work, and social environment; it is a key determinant of health.

Kickbusch, Wait, and Maag (2006) suggest the necessity for health literacy inclusion in the school curriculum, because strategies to promote health must be viewed as part of lifelong learning, starting from a young age. Similarly, Fetro (2010) points out the need to involve children in the process of developing health literacy, for them to understand how health affects their lives and how they can develop action competence so they know how and when to improve their health. When promoting health literacy in young people, schools are according to Hagell, Rigby, and Perrow (2015) a key platform. However, they conclude that there is limited research on best practices. The Swedish National Agency for Education (2010) states that schoolchildren's well-being and development should be a focus in schools, and health and lifestyle issues are to be addressed. Kickbusch (2012) argues that empowerment underpins health literacy, which leads us to the body of work on student voice by, for example, Cook-Sather (2002), Mitra (2009), and Roberts and Nash (2009). They stress the importance of listening to schoolchildren, giving them voice in matters concerning them, inviting them to actively participate in fostering democratic citizenship as well as empowerment. In addition, Larsson, Johansson Sundler, and Ekebergh (2012) suggest that participation leads to increased empowerment and makes sustainable change more likely. This indicates that getting young people involved in the development of health literacy is crucial. Furthermore, we found in our own research that schoolchildren experienced increased health and well-being when being treated as a 'we' and they indicated that there is a connection between health and learning (Kostenius, 2006; Backman et al. 2012). This echoes Fetro's (2010) arguments for the need to involve children in the process of developing health literacy in school.

## Materials and methods

### *Participants and data collection*

In this article, we performed a secondary analysis of the data from two previous studies (Kostenius & Bergmark, 2016; Kostenius & Hertting, 2016). In the first study, 121 schoolchildren participated: 96 children in grade 4 (aged 10–11 years) and 25 children in grade 8 (aged 13–14 years). They attended three schools in two municipalities in the northern part of Sweden. The children in grade 4 were presented with a document consisting of one

open-ended sentence for them to complete: 'Now I'm going to tell you about a time when I felt good, which was ...'. The children in grade 8 were also presented with a document consisting of one open-ended sentence: 'This is what I want someone to say or do to me to make me feel well ...' and one additional question: 'How can positive relationships be more frequently experienced by schoolchildren?' The open-ended sentences and the question were presented at the top of the page followed by a full page of open lines inviting the children to tell about their experiences.

In the second study, 419 schoolchildren, aged 13–15 years from 11 schools in four countries participated (three from Norway, three from Finland, three from Russia, and two from Sweden). The schoolchildren filled out the WHO's 'Health Behavior in School-Aged Children' self-completion questionnaire with one additional open question. The open question was formulated as follows: 'It is important that students feel good physically, psychologically and socially in order to learn. How can, technology, such as mobile phones, apps and computers, be used to facilitate your well-being as a student in school?'

In total, 540 schoolchildren aged 10–15 years from the northern regions of Finland, Sweden, Norway, and Russia participated by sharing their experiences in written reflections or by filling out an open question in a survey. Van Manen (1990) argues that when writing, individuals can be brought closer to their own experiences, and the writing assignments the participating schoolchildren completed were intended to give them an opportunity to express their reflections and ideas on paper or online.

## Analysis

The point of departure for this article was a secondary analysis described by Heaton (2004) as a research strategy that makes use of pre-existing research data, to investigate new questions or verify previous studies. In this article, qualitative data from two studies was used, posing new research questions. The reason for including the specific studies described above in the secondary analysis was to expand the knowledge about health literacy by studying schoolchildren's lived experiences from their own perspectives. To widen the scope of inquiry, we used a Swedish and an international study. Additionally, exploring new aspects of health literacy such as enabling technology for health promotion was made possible through the data in the second article.

The secondary analysis was inspired by Van Manen's (1990) phenomenological analysis, describing and interpreting the phenomenon and elucidating themes. The analysis can be described as passing through different phases of 'reflectively appropriating, of clarifying, and of making explicit the structure of meaning of the lived experience' (77). Data from the two different studies consisted of written reflections from 540 schoolchildren and was reanalysed with the aim to explore opportunities to promote schoolchildren's health literacy with the point of departure in their experiences and ideas. Based on the aim, the phenomenon studied in this article was health literacy. Van Manen (1990) argues that the phenomenological analysis tries to enable an understanding for participants' lived experiences. Two questions were posed to the data in the secondary analysis. The first focused on the present: 'What signifies the schoolchildren's experiences of health and well-being?', and the second focused on visionary ideas about the future: 'What are the strategies to promote health and well-being suggested by the schoolchildren?'

## Ethical considerations

According to an ethical law in Sweden (SFS 2003:460), informed consent must be collected from children participating in a research project, and because the participants were under the age of 18 years, parental permission was required. Informed consent was obtained from all participants. Participation was voluntary and confidentiality was explained before the schoolchildren decided if they wanted to take part. Before the start of the research project, approval was granted for the first study by the ethics committee at our university, and the board of ethical vetting approved the second study (D.nr. 2013–168-31Ö).

## Results

The secondary analysis resulted in two themes and a comprehensive understanding of the data (see Table 1).

### Caring and confirming

The schoolchildren appreciated being cared for and confirmed by others, which had a positive effect on their health and well-being. Caring and confirming actions could be described as receiving help and support from peers and adults. One child wrote: ‘I want someone to help me if I end up in trouble, for example, (if) I fall off my bike and hurt myself’. Another child explained: ‘I have my friends that support me ... when they are nearby I feel really calm’. To be confirmed in a relationship meant for the schoolchildren to be recognized and valued for both who they are and for their accomplishments. Two schoolchildren stated: ‘When I’m noticed [by others] it makes me happy and I feel liked’ and ‘Someone complimented me on achieving better results in school. It warmed my heart’. The results of caring and confirming actions were described as positive feelings such as, for example, pride, happiness and self-confidence.

The school children also described how they appreciated being connected to others – belonging to a community. If they spent time with other peers or adults, it increased their sense of belonging and connection to a group. One child wrote, ‘Everybody wants to be included, belong to the “group”, be popular or at least feel like you are “somebody”, feel welcome’. The schoolchildren noted that they had a wish to be part of a community, unless

**Table 1.** Overview of original studies, secondary analysis themes and comprehensive understanding.

Studies	Original themes	Secondary analysis themes	Comprehensive understanding
(1) The power of appreciation	I: Feeling a sense of belonging II: Being cared for by others III: Being respected and listened to IV: Feeling valued and confirmed	I: Caring and confirming	People and interactive technology support health literacy
(2) Health promoting interactive technology	I: Having a sense of control II: Balancing enjoyable options III: Sharing with others IV: Learning made easier	II: Engaging and empowering	

they wanted to be alone at times. The desire to create mutual bonds between each other meant enjoying time together and caring for each other.

The sense of belonging and being connected to a community was also experienced as joyful. One child wrote: 'A year ago, when my best friend and I spent a lot of time together ... it was super fun. She was so funny and nice and easy to talk to.' The opportunity to take part in fun activities together with other people created bonds between the children and other people with whom they interact.

In this theme, the different experiences described by the schoolchildren highlighted the importance of being cared for, confirmed by, and connected to others, which increased their health and well-being.

### ***Engaging and empowering***

The schoolchildren's experiences included situations when they had been able to participate in different activities in school. They described participation as a way to be engaged. The schoolchildren explained that they have ideas on how situations of health and well-being can be more frequently experienced in real life and using interactive technology. The children realized they have the power to influence situations in their life. For example, they stated that it is important to be honest, respectful, and feel empathy for other people. One child explained, 'The golden rule: one should treat others as one would like others to treat oneself. It is logical and explains everything. Be nice and others are nice back. Even if you don't love everybody, you can at least respect them.' The opportunity to be listened to by peers and adults was highlighted by the schoolchildren. Two children wrote, 'I want people to believe in me, listen when I say something, and remember me' and 'I want people to consider my suggestions, even if they are not as good as their own.' The quotations bring attention to the fact that the schoolchildren have a belief that their thoughts are valuable and that they have the capacity to be engaged and have a say in matters affecting them.

Another aspect of being listened to was the possibility to be more or less anonymous when communicating with interactive technology. According to one child, 'It's good to talk to someone via skype or facebook, because you don't feel so ashamed if you say something wrong.' The feeling of ease in communication with interactive technology enables the children to be themselves, which lessen the pressures of social interaction. Having access to information on the Internet and being able to seek knowledge enhanced feelings of empowerment and well-being. The children also reflected on how interactive technology offers feelings of accountability and self-control. One child wrote, 'To have your own computer implies that that the schoolchildren need to take responsibility ... it can also make them feel more grown up, which has a positive effect on their well-being.' Additionally, the schoolchildren also recognized their own role and their responsibility for supporting health promoting behaviours and relationships. One child wrote: 'I want others to ... [a list of friendly actions]. But for these things to happen I have to do them myself!' They also pointed out that interactive technology may give equal opportunities for participation and learning, and may improve teaching in the classroom. One child wrote, 'With technology, I think the classroom teaching is more fun and more varied. With fun teaching, it is easier to cope with the learning and do well.'

In this theme, the different experiences described by the schoolchildren highlighted the importance of being in an environment that enabled them to participate and thus be

engaged, which made them empowered to take care of their own health and well-being while also supporting others.

## Discussion

The comprehensive understanding of the two themes described above was that people and interactive technology support health literacy, which increased schoolchildren's health and well-being. Aspects supporting health literacy included descriptions of how to foster positive relationships by caring and confirming with others. The schoolchildren's experiences illuminate relationships in which the participating persons are honest, respectful and have empathy for each other. This can be compared to Noddings's (1984) description of the ability to care for another. All human beings have a moral obligation to see and meet the needs of others. In addition, she argues that the ethics of care is relational and situated. Our actions are not based on reasoning and principles, but it is '... feeling with, and for, the other that motivates us in natural caring' (Noddings 2002, 14). The schoolchildren also described how they appreciated being connected to others – belonging to a community, either face-to-face or online. Therefore, technology can support informal learning communities online (Mao 2014). It can be considered to be a health promoting factor to use technology, such as social medias (Lindqvist 2015), despite the risk for young people spending time online, which is often the focus (Dunkels 2010; Lindqvist 2015). The schoolchildren in our study found the anonymous life on social media as health promoting, which resulted in a feeling of freedom, an opportunity to be yourself, do good for others, and being empowered. Dunkels (2007, 2010) explains that adults can perceive anonymity as merely a risk and there are risks connected to using social media; however, children have sound strategies on social media. Sinkinson (2014) suggests that new technology is positive in school and teachers must adapt to new patterns of communication. If the schoolchildren in our study spent time with other peers or adults whether face-to-face or online, it increased their sense of belonging and connection to a group. This is similar to Lévinas (1969) notion of *being-for-the-world*, which describes the mutual impact between the world and humans as a relationship with mutual impact, and also responsibility for the Other. According to the schoolchildren, relationships and connecting to others are important parts of health and well-being. This supports the argument that appreciative relationships are fundamental to health and well-being and therefore a vital aspect of health literacy (Kostenius & Bergmark, 2016). Lévinas (1969) claims that the encounter between self and the Other is the time and place of responsibility affecting the way we act towards each other, and taking responsibility for the same (Lévinas 1969, 1993). To be open to each other's perspectives is crucial to create an authentic dialogue, where both parties listen to each other, not just converse. Such dialogue can enable real communication and learning from one another (Freire 1970; Lévinas 1969).

The schoolchildren brought up practising 'the golden rule', treating others well, based on their own idea on what being treated well is for them. Although a positive beginning in social interaction, a reciprocal encounter may be needed to fully help someone else to feel happy and healthy. Noddings (1984, 2002) holds that caring is a reciprocal act between the cared-for and the one-caring and that people can learn to both give and receive care. In this relationship between the one-caring and the cared-for, the carer has to discover the Others' needs and respond to them in an appropriate way. The act of care is only received when the

Other accepts the act (Noddings 1984, 2002). Along that same line, Siegel's (2012) notion of 'feeling felt' may be useful in discussing the social aspect of health literacy. He explains that seeing and hearing someone and making them feel understood establishes an interpersonal connection of belonging. The schoolchildren in this study highlighted their own part in a reciprocal exchange, their own responsibility in the meetings with others, which can be compared to Kickbusch's (2012) argument that the focal point with health literacy is empowerment. When people feel they are being heard and valued, they are encouraged to improve their own efforts (Melander-Wikman, Jansson, and Ghaye 2006; Stainer and Stainer 2000). Additionally, the schoolchildren's experiences of belonging to a community where everyone is included can be compared to one aspect of existential health described by Melder (2011) as wholeness and integration. This dual focus on oneself and the other coincides with Nutbeam's (2008) conceptual model of health literacy as an asset built on an 'understanding of the role of health education and communication in developing competencies for different forms of health action (personal, social and environmental)' (2014). He further describes health literate persons as having skills and capabilities that enable them to enhance their own personal behaviour, as well as having the capability of influencing others towards healthy decisions. This resonates well with the schoolchildren's experiences of mental, social, and existential dimensions of health and well-being.

## Conclusion

We argue that conclusions based on these findings can be useful in health promotion efforts. First, the schoolchildren highlighted experiences of mental, social and existential dimensions of health and well-being that can be strengthened through health literacy efforts. Second, the schoolchildren's experiences illuminate the empowering aspects of technology as a tool in health promotion, making interactive technology something that created health opportunities for the schoolchildren, such as belonging to a community and doing good for others. Focus should be on adults and professionals finding ways to act as partners using an appreciative process, asking questions on what works well, to make interactive technology an enabling technology. Third, the schoolchildren, aged 10–15 years, were fully capable and competent to participate in the studies, offering insights into their experiences of health and well-being. Their experiences play an important role in development of the field. Physical dimensions of health and well-being were not described by the schoolchildren and existential dimensions were not elaborated on to any great extent, because the studies did not explicitly ask for their experiences in those areas. This can be seen as a limitation of the studies, because Fetro (2010) argues that health literacy efforts must be mindful to address all dimensions of health – physical, emotional, mental, social, and existential. We concur with Fetro and acknowledge the importance of studying health literacy from a holistic perspective in future studies. In addition, to fully embrace the empowering aspect of health promotion, we found it important to study health literacy based on schoolchildren's own experiences and ideas.

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## Disclosure statement

No potential conflict of interest was reported by the authors.

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