

Health promoting interactive technology: Finnish, Norwegian, Russian and Swedish students' reflections

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Summary

The aim of this study was to elucidate Finnish, Norwegian, Russian and Swedish students' reflections and ideas on how interactive technology can be used to promote health in school. The data were collected in the northern part of these four countries, and 630 students aged 13–15 filled out the World Health Organization's 'Health Behavior in School-Aged Children' self-completion questionnaire with one additional open question, which is analyzed in this article ($n = 419$). The phenomenological analysis resulted in four themes: A sense of control, Balancing enjoyable options, Sharing with others and Learning made easier. The students point out that interactive technology promotes empowerment and independence, reduces stress and makes learning easier. They argue for a healthy balance of Internet use for it to be health promoting. According to the students, good relationships increase well-being; and interactive technology can offer a way to socialize, provide a tool for meeting and making new friends, help when not feeling well and give support when encouraging classmates. We argue, based on the findings of the present study and previous research, that students need a combination of freedom and meaningful relationships with adults who have an empowered child perspective, to fully take advantage of the empowering effects of interactive technology. We suggest, as implications for practice, that teachers, school leaders and health care professionals find ways to act as partners using an appreciative process, asking questions on what works well, to make interactive technology an enabling technology to increase health literacy, thus improving health and well-being in students.

Key words: empowerment, health literacy, health promotion, information and communication technology (ICT)

INTRODUCTION

Efforts to increase health literacy in students is about offering opportunities to obtain, interpret and understand health information as well as using the gained knowledge (Fetro, 2010). This corresponds with the World health Organization's description of health [as] '... a positive concept emphasizing social and personal resources, as

well as physical capacities' [(WHO, 1986), p. 1]. Equally fitting is a recent definition of health 'as the ability to adapt and to self-manage' [(Huber *et al.*, 2011), p. 4166]. The educational setting is a suitable arena for health literacy activities, as the Swedish National Agency for Education (Swedish National Agency for Education, 2010) clearly states that students' well-being and development should

be a focus in schools, and health and lifestyle issues are to be addressed. Similarly, in Finland, Norway and Russia, schools have been found to be a suitable arena for health-promotion efforts (Ahonen *et al.*, 2006; Ahonen, 2010; Kvarme, 2011; Sormunen *et al.*, 2012). According to Marks (Marks, 2009) a relationship exists between the health of students and academic achievement.

Computers, mobile phones and social media are part of student's everyday life making information and communication technology (ICT) or interactive technology widely used (van den Eijnden *et al.*, 2008; Tercyak *et al.*, 2009). There are different ideas among researchers on the use of ICT. Some stress the negative health aspects, such as having low levels of connectedness in relationships, loneliness, sleeping problems and depression (van den Eijnden *et al.*, 2008; Laura and Chapman, 2009; Cain and Gradisar, 2010). Others point to opportunities to improve children's health and well-being by offering long-distance relationships, opportunities to be informed and facilitating health promotion (Tercyak *et al.*, 2009; Oprea and Stan, 2012). According to Valkenburg and Peter (Valkenburg and Peter, 2011), online communication offer both opportunities and risks to young people, mentioning enhanced self-esteem, relationship forming, friendship quality and sexual self-exploration, yet on the other hand being open to cyber-bullying and unwanted sexual solicitation. These risks, as well as Crutzen *et al.* (Crutzen *et al.*, 2008), findings that interventions using ICT in health-promoting efforts with youth have not shown to be very successful, are obvious challenges. However, giving young people the opportunity to increase their influence over their own health can contribute to an easier transition to adult responsibility (Moreno *et al.*, 2009). Furthermore, getting young people involved in the development of health-promoting activities may lead to increased well-being, as participation leads to increased empowerment, which in turn makes sustainable change more likely (Larsson *et al.*, 2013). Being actively part of health-promotion efforts may have a health-promoting effect, as students experienced increased health and well-being when being treated as a 'we' (Kostenius and Öhring, 2008). According to Booth *et al.* (Booth *et al.*, 1991), 'power can be healthy' (p. 31) and this power enables human beings to be actively participating in their own life. Empowerment has no age limit however; using an empowerment discourse with children starts with actively listening to and acting on what children are saying (Curtin and Murtagh, 2007). One challenge in promoting health literacy in young people is, according to Fetro (Fetro 2010), including youth in the process. Fortunately, 'Health-promoting schools' introduced by the World Health Organization is a concept that appears to have

had both health promoting and educational outcomes [WHO, 1995; Lee *et al.*, 2005; European Network of Health Promoting Schools (ENHPS), 2006; St Leger and Young, 2009]. In one of our own intervention studies, school children's suggestions to increase physical activity was shown to be fun, functional and feasible by using encouraging text messages in combination with social support from parents and peers (Lindqvist *et al.*, 2012), which is similar to what Perry and colleagues (Perry *et al.*, 2012) found. In addition, Dunkels (Dunkels, 2007) stresses that students are both skilled and capable of finding strategies on the Internet. An appreciative process described by Cooperrider and Whitney (Cooperrider and Whitney, 2005) focusses on success and what people want. Ghaye and colleagues (Ghaye *et al.*, 2008) suggest asking positive questions and reflect on how we can amplify what already works well. This appreciated perspective is closely related to Antonovsky's (Antonovsky, 1987) concept of salutogenesis, which stresses health factors as a base for development. Starting with positive questions can be a way to solve problems and find possibilities for change (Ghaye *et al.*, 2008). Therefore, the aim of this study was to elucidate Finnish, Norwegian, Russian and Swedish students' reflections and ideas on how interactive technology can be used to promote health in school.

METHOD

The study is based on an inductive, phenomenological design to capture the students' reflections and ideas on how interactive technology can be used to promote health in school. According to van Manen (van Manen, 1997), the aim of phenomenological research is to gain a deeper understanding of the nature or meaning of everyday experiences. As the students can be considered to be experts on their own environmental experiences and preferences, it seems vital to listen to the students' voices and involve them in research concerning questions about their health and well-being (Bergmark and Kostenius, 2009).

The data were collected in schools connected to an international project in the four countries and conducted by the project partner universities in each country. In total, eleven schools were involved (three from Norway, three from Finland, three from Russia and two from Sweden), and 630 students aged 13–15 filled out the World Health Organization's 'Health Behavior in School-Aged Children' self-completion questionnaire with one additional open question, which is analyzed in this article ($n = 419$, Finland = 140, Norway = 89, Russia = 79, Sweden = 111). 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?

The questionnaire used for conducting the data collection was translated into the native language of the participating students. According to van Manen (van Manen, 1997), writing can bring individuals closer to their experiences, and this writing task gave the students an opportunity to express their reflections and ideas on-line.

When conducting the data collection, ethical guidelines in every participating country were followed, these being the National Committees for research ethics in Norway (National Committees for research ethics in Norway, 2006), the national law on ethical approval in Sweden (SFS, 2003), the Finnish advisory board on research integrity (Finnish advisory board on research integrity, 2009) and the Russian federal law on copyright and associated rights (Russian federal law, 2014). Before the research project started, it was approved by the regional ethical committee (D.nr. 2013-168-31Ö).

The data were analyzed by using a hermeneutic phenomenological method inspired by van Manen (van Manen, 1997). The phenomenon in this case is students' reflections on how interactive technology can be used to promote health in school, and the analytical process is based on an understanding of this phenomenon. According to van Manen (ibid.), the analytical process should not be regarded as governed by certain predetermined rules, but rather involves allowing the phenomenon to appear precisely as it is; a free act of 'seeing'. The students' responses might have been affected by their varying abilities to express their reflections in writing, by their beliefs about our expectations as researchers or by their different interpretations of the specific writing task. Presumably, the students made a selection of which experiences that were plausible to reveal in this context, from their perspective (c.f. Westling Allodi, 2002). We want to emphasize that this is not a comparative study; instead we consider the data as a whole representing schools in the Barents region. The first analytical step was to translate all students' reflections into English. After translation, our process of analysis continued with all of the students' written reflections being read by us, before the first discussion of the results. Reflections were then made and similarities and differences were noted and discussed. The students' responses were very diverse, and there were also clear similarities. The similarities and differences that were noticed were then combined in different themes, taking the central and common characteristics of the patterns as the point of departure. These themes, which gradually emerged, consist in turn of internal variations in the form of different aspects. These aspects reflect the great

variety of the student's reflections within the respective themes and therefore make each theme what it is (van Manen, 1997). The analysis continued with the authors repeated discussions with a focus on individual sections, as well as the whole of the students' reflections, in order to better understand patterns of meaning. Four themes were formed describing student's reflections and ideas on how interactive technology can be used to promote health in school, which represent both the similarities and great variety among the students' responses. When analyzing the questionnaire we choose representative and illustrative quotations from the text of the open-ended question to exemplify the themes, giving voice to the students. According to Polit and Beck (Polit and Beck, 2004), this use of quotations enhances credibility.

RESULTS

The phenomenological analyses resulted in four themes; A sense of control, Balancing enjoyable options, Sharing with others and Learning made easier.

A sense of control

The students reflected on how they can feel very pressured and stressed in school and at times the interactive technology adds to the stress; however a number of aspects of interactive technology were used by the students as stress reducers. For example the students were getting a sense of control by feeling able to oversee their own work and be better organized. One student explained, 'When you have everything in your computer or tablet it is easier to be organized. . . you have more control over the school stuff and the stress factor is lowered'. Interactive technology could, according to the students, promote empowerment and independence. At the same time, the students noted, possessing the power to control your school work also comes with responsibility. One student wrote, 'To have your own computer implies that that the students need to take responsibility. . . it can also make them feel more grown up, which has a positive effect on their well-being'.

Another aspect of empowerment and responsibility is accruing to the students self-monitoring. One student suggested that, 'If one doesn't feel comfortable on Facebook then you find another webpage to log on to that does not give you the same feeling'. Having your school work readily accessible was seen as a help when doing homework. One student explained, 'The computer is always with me so I can't use the excuse that I forgot to bring my books in school'. In addition the students reflected on how knowledge can increase well-being. One student wrote, 'The

students are often surfing on the internet in their free time and know more than the teachers in school. Showing that you know something make the students feel good.'

In summary, the students expressed several aspects of how interactive technology can give them a sense of control. They reflected on how interactive technology can be a stress reducer by having their school work organized, at a glance and accessible at all times in their computer or tablet. Having unlimited access to information on the internet and being able to seek and gain knowledge on their own empowered the students increasing well-being. They also reflected on how interactive technology offers opportunities to take responsibility and exercise self-control.

Balancing enjoyable options

According to the students' reflections, interactive technology can offer enjoyable options to take a needed break or make school work more fun. According to the students, working on the computer, the mobile phone or on the tablet is much more enjoyable than writing on paper or reading a book. One student wrote 'It's so much more fun to work [on the computer] that time flies'. Being able to use interactive technology in the classroom, as well as during recess, increased the joy factor and motivation as well. One student noted 'You get a whole lot more motivated'.

Having your favorite music available to listen to was not only fun but made students more relaxed, focussed and work more effectively. One student explained, 'It is easier to concentrate when I have music playing in my ears as I'm writing on the computer and it's so much more fun than writing in the boring old books. When everybody is concentrating and performing well, then well-being increases'. According to the students, music could be used to create a better working environment if there was disrupting noise in the classroom. One student wrote, 'Music can be helpful, for example, when others in the class are being loud and rowdy'.

The students point out that although it is fun working with interactive technology it can be harmful, mentioning, for example, radiation risks and sitting still too much. In addition, they reflect on that a fun activity is positive for well-being. However, they stress that any fun activity needs to be in the right amount, as too much of a good thing can produce negative health effects. According to the students there are individual differences, as one student can react negatively to aspects that another student would find helpful. One student wrote 'Computers [mobile phones and tablets] can make some people feel distracted and not able to concentrate'.

In summary, the students expressed several aspects of how interactive technology offers enjoyable options to increase well-being. Their reflections included thoughts on

how students react differently and that there is a need to balance the use of interactive technology, so it would not only be a fun tool but also health promoting while maintaining or even improving educational achievement.

Sharing with others

A theme that occurred in the students' reflections was about sharing with others, with the help of interactive technology, which enhanced the possibilities for communication in several ways. One aspect of this was that social support is available when needed, even if the person is not physically present. This was explained by one student, 'If you feel bad you can use your mobile phone or computer, for example to call someone or write to someone'. Another aspect of sharing with others was the possibility of being more or less anonymous when communicating. According to one student, 'It's good to talk to someone via Skype or Facebook, because you don't feel so ashamed if you say something wrong'.

Communication with classmates was another aspect, where it was highlighted that interactive technology could be a way to support others. One student wrote, 'It can be used to encourage others in the class, they can support each other through the internet'. Another student described how one can strengthen friendships, 'It's easier to communicate with your classmates. And when you can communicate with friends, it's easier to get to know each other better'. Playing games was yet another way to share time through interactive technology with friends, as part of recess or as a part of the school work. One student wrote, 'Nice to play games with your friends during the lessons'.

In summary, sharing with others was expressed in several aspects, where communication was the focus. The students reflected on interactive technology as helpful when they did not feel well, the possibility to be more or less anonymous when communicating and also how interactive technology can be a tool when encouraging classmates, when making new friends and as a way to socialize with friends.

Learning made easier

The students experienced that interactive technology could be a useful tool to facilitate learning. They expressed different aspects, one being the handling of information. One student wrote 'It is easier to keep track of everything; you have everything in the same place . . . less stressful somehow, as it gets easier to find sources of texts and school projects'. Another aspect the students described was the ease of access to information and the many options that the Internet offers. One student wrote 'One

can easily look up information and there is so much information and numerous opinions spinning on the internet. I don't even understand how this can be a question, a book has one information and one opinion. The Internet has 6254159462138702508672495'.

Some students also saw the advantages with interactive technology as a facilitator to make learning more effective, such as help with homework. One student wrote 'It helps with homework, and you can learn things faster if you are on the internet at the same time!' Another reflection was that interactive technology makes school work more equal, as one student explained: 'When using computers, it gets a lot easier to write, which makes everyone feel like they can improve their writing'. Finally, the students also expressed that the teaching in the classroom was more enjoyable with interactive technology. According to one student it can be looked at this way, '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 summary, the students expressed several aspects of how interactive technology can make learning easier. They reflected on how interactive technology provides greater opportunities for access to information, better opportunities for handling information and how learning becomes more effective. They also pointed out that interactive technology gives equal opportunities for learning, and may improve teaching in the classroom.

DISCUSSION

The aim of this study was to elucidate Finnish, Norwegian, Russian and Swedish students' reflections and ideas on how interactive technology can be used to promote health in school. The results are based on 419 students' reflections on an open question in a questionnaire based on the World Health Organization's 'Health Behavior in School-Aged Children' self-completion questionnaire. The open question was formulated as follows: *It is important that students feel good physically, psychologically and socially 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 this section we will discuss the method and its limitations and also conduct a concluding discussion, deriving from the analyzed results of the questionnaire.

Methodological considerations

We sought after the students' own reflections on interactive technology in school. By the methodological choice made in this study, we tried to reduce the risk related to children's lower status in our society, which according to Matthews, Limb and Taylor (Matthews *et al.*, 1998)

affects the power dynamic in an interview. One limitation in this study might be the students' varied competences in expressing their experiences in writing, and the results might have been different if another method had been employed. However, since the data consisted of a large number of stories, it represents a wide variety of writing competences and a great variation in students' reflections. Moreover, the choice of method allowed the students' to express themselves in their own words, which might be relevant for reducing the risk of omitting aspects that students consider relevant for the promotion of health with interactive technology.

Another limitation is that the students' reflections had to undergo a translation process. We as authors could fluently read and understand Swedish, Norwegian and English. The Finnish and Russian reflections were translated into English with a translation program. We checked the translations with Finnish and Russian researchers who considered them correct, even though there were some grammatical errors. There is a risk of using this type of translation program, since important meanings and subtleties can be lost in the translation process. However, we considered the benefit of having a richer material was greater than the risks. The data were collected from the specific schools connected to the project, and may therefore not be representative of the whole region and different countries. Hence, there is a selection bias.

As this study is not comparative, questions of differences between the four countries were not considered in the analytical process. All the students' answers were considered as a whole, with no intention of comparison between countries. However, the students came from different school contexts, with varying degrees of Internet penetration within and between countries. In some schools, all students had their own computer or other ICT tools in school and at home, whereas in some other schools there were just a few computers to share and no internet access at home. Therefore one can draw the conclusion that the students had varying skills and access to interactive technology. No matter how much experience the students had of interactive technology they were, as we see it, capable of answering the question posed on how interactive technology can be health promoting.

Concluding discussion

In the analysis we discovered different patterns of answers, which we described in four themes: A sense of control, Balancing enjoyable options, Sharing with others and Learning made easier.

In the theme *A sense of control* we narrated how the students in this study expressed several aspects of how

interactive technology can give them a sense of control and offers opportunities to take responsibility and exercise self-control. Menon (Menon, 1999) describes a psychologically empowered state as ‘a cognitive state characterized by a sense of perceived control, competence, and goal internalization . . . thus considered a multi-faceted construct reflecting the different dimensions of being psychologically enabled . . .’ (p. 162). According to the results, interactive technology can be empowering giving young people the power to influence aspects like having unlimited access to information and being able to seek and gain knowledge on their own. This possibility of obtaining and interpreting information is, according to Fetro (Fetro, 2010), increasing health literacy. However, Ghaye and Ghaye (Ghaye and Ghaye, 1998) suggest that social interaction is a pre-requisite for the enabling aspects of empowerment. Building on that thought, students can be empowered by feeling in control by having information readily available, yet there might be an extra dimension needed to use the gained knowledge effectively. Another aspect is the one of finding sound and valid information and sifting through an array of different information, which might need some support from an adult. Young people who have supportive relationships with adults; for example professionals at school and caregivers at home, have better chances of making sound decisions, which promote their health and well-being (Larsson *et al.*, 2012). This implies that students may find useful information through using interactive media increasing learning and health, although they may need an adult to listen to them and guide them in the selection of sound choices (Curtin and Murtagh, 2007; Bergmark and Kostenius, 2009). For example school nurses promoting health and well-being in young people require flexibility in their approach to make a positive difference; and being tactful when providing health guidance adjusted to individual needs in order to empower students to participate in her own health process (Larsson *et al.*, 2013). This coincides with an ‘empowered child’ perspective adhering to the understanding that children and young people are capable and able of influencing their own lives and being an adult acting as an advocate, helping them verbalize their opinions, allowing their voices to be heard (Christensen and Prout, 2002; Kostenius, 2008). We argue, based on the findings of the present study and previous research, that students need a combination of freedom and a meaningful relationship with adults who have an ‘empowered child’ perspective to fully take advantage of the empowering effects of interactive technology.

The students discussed interactive technology as joyful on one hand, but also as possessing a risk of developing unhealthy behavior, which we narrated as the theme

Balancing enjoyable options. The students expressed several aspects of how interactive technology offers enjoyable options to increase well-being, such as gaming with friends on breaks, listening to music and it being more fun to write with when compared to pen and paper. However, they also reflected on how too much technology can be harmful; concerning, for instance, radiation and too much physical inactivity. Playing games was yet another way to share time through interactive technology with friends as part of recess or as part of the school work. Yet the students emphasized a balance between joy and risks, which is in line with the findings of Valkenburg and Peters (Valkenburg and Peter, 2011). Durkin and Barber (Durkin and Barber, 2002) concluded that computer games can be a positive feature of a healthy adolescence as game players scored more favorably than peers who never played computer games on a number of measures. Examples of these measures were family closeness, activity involvement, positive school engagement and positive mental health. However, other studies show that the quality of interpersonal relationships decreased and the amount of social anxiety increased as the amount of time spent playing online games increased (Lo *et al.*, 2005). Just as the students in this study pointed out, a healthy balance can be recommended using interactive technology. In an earlier study about leisure activities we recognized that some of the students had the capability of finding a healthy balance between schoolwork, friends, rest and engagement in leisure activities (Hertting and Kostenius, 2012).

To overcome the challenge to find a healthy balance of Internet use for each individual student, handling the risks and amplifying the positive aspects of interactive technology we suggest, in accordance with Valkenburg and Peter (Valkenburg and Peter, 2011), that professionals and parents can help their teenagers to deal with the opportunities and risks of online communication, by realizing that psychosocial problems that originate through online communication often resemble those found in their offline lives, for example frustration resulting from romantic relationships, disappointing friendships or social exclusion. ‘It is therefore advisable that strategies against potentially adverse consequences of online communication be developed similar to those that have proven to be successful in solving the problems that adolescents encounter offline’ (p. 126).

In the theme *Sharing with others* we narrated some of the students’ positive experiences of social interaction via interactive technology. They reflected on interactive technology as a help when they did not feel well, also having the possibility to be more or less anonymous when communicating with others. Baker and Ray (Baker and Ray,

2014) echo this notion, suggesting that disclosure in counseling may be enhanced by the perceived anonymity by not being physically seen or by not having to reveal their identity. They also found that people are more likely to get right to the point and the students in this study describe how easy it is to communicate with classmates and how communication online can even strengthen friendships. Pierce (Pierce, 2009) found that various technologies such as instant messaging, cell phones and social sites online provide those young people who feel shy and inhibited in a face-to-face meeting an opportunity for social interaction without anxiety. The students in this study found socializing and encouraging friends was easy via interactive technology in line with one of our own studies, which showed that adolescents were likely to increase physical activity by getting parental support and receiving and sending encouraging text messages from and to peers (Lindqvist *et al.*, 2014). Although Valkenburg and Peter (Valkenburg and Peter, 2011) also found a number of positive ways in which young people use interactive technology, they stress the need for young people's encounters with adults offline. Ethical discussions on how to act towards each other to increase learning and well-being are important (Bergmark *et al.*, 2007). Valkenburg and Peter (Valkenburg and Peter, 2011) also found a number of young people hiding their on-line activities from parents, noting that attempts by parents to intervene in an adolescent's online communication may backfire. The way you intervene can make a great difference, as it can either hinder or help the empowering process, with the latter offering an opportunity to build a base for mutual exchange built on respect (Eder and Fingerson, 2002). Gross (Gross, 2004) adds that given the rapidly evolving landscape of young people's digital media use, it is wise to not make any hard and fast claims, realizing its complexity. Subrahmanyam and Li (Subrahmanyam and Li, 2007) point out that the use of interactive technology by young people may differ from the way adults use it. Therefore, it is important that adults, at home and in school, are open and responsive to young people's lifeworlds. In accordance with Dunkels (Dunkels, 2007) as well as Valkenburg and Peter (Valkenburg and Peter, 2011), who emphasizes that adolescents and adults discuss ethics and strategies against potentially adverse consequences of online communication, we believe in an ongoing discussion including both adults and young people in an empowering manner.

When discussing the theme *Learning made easier*, we must emphasize that the work with developing conditions of students' learning and well-being is a contemporary topic in many countries (Sigfúsdóttir *et al.*, 2007; Desjardins, 2008; Ahonen, 2010). Poorer physical and psychological health among school children is negatively related to

educational attainment (Fröjd *et al.*, 2008; Chomitz *et al.*, 2009). The students in our study meant that interactive technology provides greater opportunities for access to information, better opportunities for handling information, which would make learning more effective. They also pointed out that interactive technology can provide equal opportunities for learning. This is highlighted in the Swedish curriculum, but which is, according to Samuelsson (Samuelsson, 2014), difficult to realize in practice. She points out that school is characterized by a technical inequality and that technical capital (i.e. access to new technology) differs between students. Further, Näslund and Gardelli (Näslund and Gardelli, 2013) support the idea of equal opportunities, when studying young people and adults with disabilities. We find it important to take both these sides into consideration, and promoting equal opportunities for access to interactive technology for students could also promote learning and well-being in school.

According to the students in this study, interactive technology can be used to promote health and well-being in school by providing a sense of control, an opportunity to share with others and making learning easier. They also point out that it is a balancing act to use interactive technology in such a way that it promotes health, in other words this is a challenge. In addition, Crutzen *et al.*, (Crutzen *et al.*, 2008) point out that health promotion has not been shown to be very effective when using ICT. They suggest that further research should be conducted among adolescents to generate more detailed ideas about how to establish an intervention with a look and feel with which adolescents can associate themselves. We argue that this study can serve as an example on how to capture adolescent's ideas in order to increase the impact of health-promoting efforts with interactive technology. Empowering practices enable students to take an active part in shaping their own lives and is a basic requirement to be able to achieve lasting effects of our intended efforts to promote health in school (WHO, 1995). By letting students reflect on how interactive technology can support their well-being and make learning easier, our health-promoting efforts may yield sustainable change and positive benefits. We suggest, echoing Dunkels (Dunkels, 2007), that teachers, school leaders and health care professionals act as partners who initiate discussions with the students about finding solutions for a healthy balance of interactive technology use. Good relationships are important for our well-being, the students also pointed out, and that interactive technology can offer new avenues to meet and socialize.

As the students in this study noted, relationships in real life are also altered when interactive technology enters the school arena. For example, the students may become teachers as they are often better acquainted with interactive

technology than the adults (Alerby and Hertting, 2011). This shift, as we see it, offers an opportunity for empowering students involving them in ongoing health-promoting discussions and activities using ICT (see for example Lindqvist *et al.*, 2014). As studies show that technological questions risk overshadowing human needs (Samuelsson, 2014), an active engagement in schools to discuss how interactive technology can promote health may alleviate this risk.

The Swedish curriculum supports the use and development of interactive technology in schools, as well as promoting health and well-being (Swedish National Agency for Education, 2010). We argue, echoing the World Health Organization (WHO, 1986), that empowering practices enabling students to take an active part in shaping their own lives is a basic requirement to be able to achieve lasting effects of our intended efforts to promote health in school. By letting students reflect on how interactive technology can support their well-being, our health-promoting efforts will hopefully yield sustainable change. However, as Grieg Viig and Wold (Grieg Viig and Wold, 2005) point out, it is crucial with cooperation between principals, school administrations and politicians to develop a supportive environment in schools. In this study we have asked for the students' experience of how interactive technology can be used to improve health in school. This is in line with Ghaye and colleagues (Ghaye *et al.*, 2008), who suggest that identifying strengths and positive assets offers a chance to reformulate the current situation and find new ways to change. Finally we argue, echoing Cooperrider and Whitney (Cooperrider and Whitney, 2005), that using an appreciative process has a great potential for making interactive technology an enabling technology to increase health literacy, thus improving health and well-being in students.

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