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MASTER'S THESIS

SOCIO-DIGITAL INTERESTS, NETWORKS AND EXCESSIVE ICT
ENGAGEMENT IN FINNISH ADOLESCENTS

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ABSTRACT

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The rise of modern socio-digital technologies has fundamentally changed the ways in which people communicate, cultivate interests and simply live their everyday lives in the new media ecology. This study sheds some light on Southern Finnish adolescents (N=17) socio-digital interests, networks and excessive ICT engagement based on mixed, self-report methods of theme interview, self-report questionnaire and social network questionnaire. During the interviews, the participants were also requested to reflect on their interest related egocentric networks or key-events in their interests development by means of drawing. The results indicated, that there were clear differences in the primary interests' development and the networks related to it, and also in the experiences of the excessiveness of ICT use between the three profiles of socio-digital participation or interests: the basic, non-digital interest group, the creative digital media interest group and the digital gaming oriented interest group derived from a previously conducted self-report questionnaire. Also the youth in general appeared to experience their ICT use as excessive to some degree, but present criticism towards the concept of "ICT addiction" as well.

Keywords: adolescents, social network, socio-digital network, socio-digital participation, basic participators, gaming-oriented participators, creative participators, excessive ICT use, ICT addiction, key-event interview

ABSTRAKTI

TURUN YLIOPISTO
Kasvatustieteiden laitos

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Modernien sosiodigitaalisen teknologioiden nousu on perusteellisesti muuttanut ihmisten kommunikaation, harrastamisen ja yksinkertaisesti jokapäiväisen elämisen tapoja nykyisessä uusmediaekologiassa. Tämä tutkimus valaisee hieman eteläsuomalaisten nuorten (N=71) sosiodigitaalisia kiinnostuksia, verkostoja ja liiallista TVT-sitoutuneisuutta perustuen teemahaastattelu-, kysely- ja verkostokyselyaineistoihin. Haastattelujen aikana osallistujia pyydettiin myös pohtimaan kiinnostuksiinsa liittyviä egosentrisiä sosiaalisia verkostoja tai sen kehitykseen liittyviä avaintapahtumia piirustuksen avulla. Tulokset viittaavat siihen, että primäärikiinnostuksen kehityksessä, siihen liittyvissä verkostoissa ja liiallisessa ICT-sitoutuneisuudessa on selviä eroja kolmen, aiemman kyselytutkimuksen perusteella muodostetun sosiodigitaalisen kiinnostuksen tai osallistumisen ryhmän välillä: ei-digitaalisen kiinnostuksen ryhmän, luovan, digitaalisen median kiinnostuksen ryhmän ja digitaaliseen pelaamiseen suuntautuneen ryhmän. Nuoret myös arvioivat yleisesti ICT:n käyttönsä jossain määrin liialliseksi, mutta esittivät myös kritiikkiä ”ICT-addiktion” käsitettä kohtaan.

Avainsanat: nuoret, sosiaalinen verkosto, sosiodigitaalinen verkosto, sosiodigitaalinen osallistuminen, ei-digitaaliset kiinnostukset, pelaamiseen suuntautuneet osallistujat, luovat osallistujat, ICT, liiallinen ICT:n käyttö, ICT-addiktio, avaintapahtumahaastattelu

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INTRODUCTION

The current research intends to shed more light on Finnish adolescents' personal reflections on their socio-digital participation, interests, networks and self-reflected excessiveness of their use of modern Information and Communications Technologies (ICT). The debate on the existence of a generation of so-called "digital natives" has been going on since Marc Prensky's 2001 article, and some say it's aroused a rather short-sighted "academic moral panic" and is an oversimplification of the real state of things (Bennett 2010; Kennedy, Judd, Dalgarno & Waycott, 2010). There has been claimed to be some unforeseen gap between "digital native" students and their "digital immigrant" teachers, the two of whom would be somehow fundamentally different in nature and brain structure. As Bennett (2010) points out, very similar issues were discussed in the 50's and 60's in relation to students getting immersed in television, popular music and the commercial cultures promoted in them. Some say in a similar way, that the more modern technologies and software based on information transmission through the Internet Protocol (IP), more familiarly "the web", have been designed to make the youth easily engaged on purpose and this does not necessarily mean they know any more or less about the principles they operate upon (Merikivi, 2013; Kupiainen, 2013; Li, 2015), nor can the experience with one type of technology predict the expertise with another (Kennedy et.al., 2010).

Whatever the case, the exponentially rapid rise of digital technology at the end of the last century seems to have fundamentally changed the ways people, young and old, interact with each other (Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay & Scherlis, 1998; Hakkarainen, Hietajärvi, Alho, Lonka & Salmela-Aro, 2015). There are no longer clear boundaries between the different "fields" (Bourdieu & Wacquant, 1992) or contexts which people occupy in their daily lives, since they can all be accessed anytime, anywhere through different technologies connected to the internet, and people are "always on", so to say, in their social networks (Ito et.al., 2008; Rainie & Wellman, 2012; Baron, 2008; Lenhart, Kahne, Middaugh, Macgi, Evans & Vitak, 2008). In the future, the computers and technology will be even more entwined to our daily lives, since the concept of the "internet of things" is quite rapidly becoming an actual reality in our everyday world

(Atzori, Iera & Morabito, 2010), and soon computers with internet access will be found in many things you'd probably never expect, such as pet collars and baby monitors (Grauer, 2015). There has been a lot of both quantitative and qualitative data collected on the issue of the socio-digital participation and -access of the youth (e.g. Ito, Horst, Bittanti, Boyd, Herr-Stephenson, Lange, Pascoe & Robinson, 2008; Li, Hietajärvi, Palonen, Salmela-Aro & Hakkarainen, 2015; Hussain & Griffiths, 2009), but there's also been a demand for more in-depth, qualitative research based insights into what these technologies and the social and interest-driven participation in them mean in the lives of individuals (Bennett 2010; Li et.al., 2015; Li 2015; Ito, et.al., 2008) and the present study is intended to offer at least some new ones concerning adolescents.

There are many examples of the far fetching effects of what some call even the “technological revolution” on the developmental ecology of the youth (Bronfenbrenner, 1070). Like Ito et.al. (2008) emphasize, you are no longer restricted to your immediate neighborhood in establishing relationships and different kinds of social or hobby groups with your peers. People meet and create groups, and even societal movements online with people from different cities and even individuals from different continents can “hook up” through online interaction in divergent virtual environments, like games or online forums. Modern GPS-based technologies for smartphones even enable the kinds of things previously seen only in fantasy- or Sci-Fi-literature. The novelty of this new phenomenon called the “internet” has left researchers in the past confused about people's new, technology-related behavioral patterns (e.g. Ehrenberg, Juckes, White and Walsh 2008; Wilson, Fornasier and White 2010). Questions have been raised also about of the addictive aspects related to technology mediated behavior, even in psychiatric context during the preparation of the new version of the DSM in the early 2000's (e.g. Schaffer, Hall and Bilt, 2000; Chou, Condrón and Belland 2005; Chóliza, Echeburúab and Labradorc 2012; Ekşia, 2012; Roberts and Pirog 2012; Kuss, Shorted, Rooij, Griffiths and Schoenmakers 2014; Shen & Williams, 2010). This is another issue requiring a further look into the actual experiences of individual adolescents in their daily lives, and the question of excessive ICT use will also be addressed in this study.

1 THEORY

1.1 SOCIO-DIGITAL PARTICIPATION

It is safe to say that the rise of digital technologies and applications in the past decade has been rapid, and it clearly has affected peoples' lives in most profound ways. The SMS technology from the 90's, and later Wi-Fi-, 3G- and 4G-networks etc. have, for example, made telecommunication more text based, considering for many decades in the past people mainly just did their distant socializing by hanging out on their telephones. Later different social media, such as Facebook, Twitter and Instagram have enabled a whole new system for networking based on microblogging (Java, Song, Finin & Tseng, 2007), photo capturing and click-based preference systems, or in contemporary layperson's terms "liking stuff". In fact, the software and technology is evolving so rapidly, that

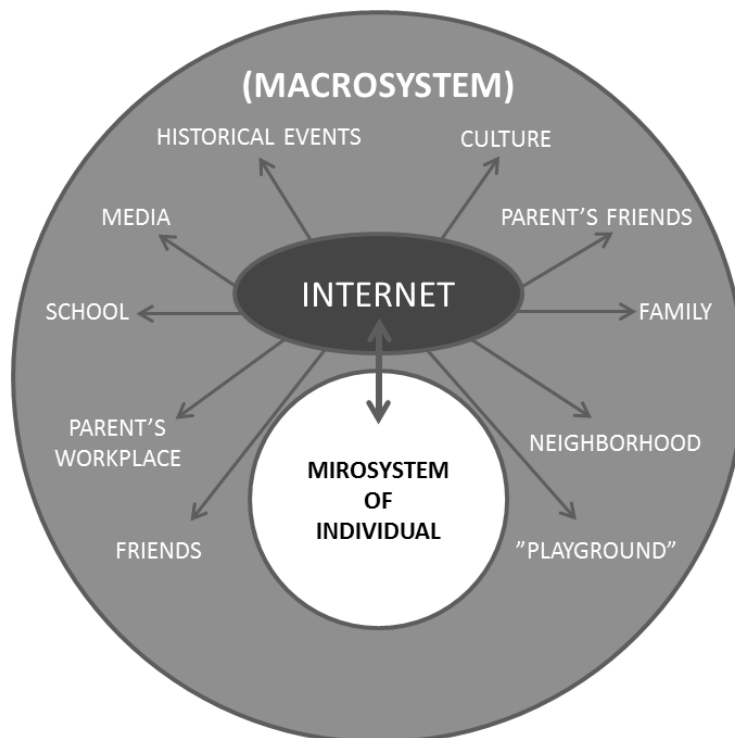


Figure 1. A sketch on the way the internet connects the different fields (Bourdieu) and the micro and macro systems (Bronfenbrenner) of individuals' lives.

there's not even point to focus one's research on one specific application, because it will most probably be out of the picture a few years from now.

In a way you could say that human relationships and behavior have become "*socio-digitalized*", meaning that an ever increasing amount of communication between people happens through different digital technologies and networks (Rheingold, 2012). The classical division between the micro and macro level developmental contexts of the youth (Bronfenbrenner 1979) is not as clear as before in a world, where almost all the quarters or fields (Bourdieu) of everyday life are present online one way or another. (Castells, 2001.) The distance between the macro- and microsystems of human development have narrowed down, so to speak, so that it is much easier to take part in the events happening on the geographically dispersed macro-level from the personal microsystem of the individual via the internet (Figure 1).

Humans are social animals, as philosophers have been saying throughout the ages, and as new research in evolutionary psychology also points out, we are naturally and structurally ultra-social and hyper collaborative cultural beings (Tomasello, 2009; Rogoff, 1990; Donald 1991). We are social beings in how our actions are, from moment to moment, shaped by and shaping the social reality itself, meaning the actual, imagined or implied presence of others. The social reality of our everyday lives, made possible by symbol usage, is what makes us self-aware (Brysbaert & Rastle, 2009). We are constantly attributing people's behaviour with different kinds of dispositions shaped by our personal traits and cultural beliefs about their implicit personality, a so-called "theory of mind", for example (Franzoi 2009). But what does it mean to be social in the modern age, when technology mediates so much of the communication between human beings and the development of our particular interests is no longer restricted to only our local networks (Ito et.al., 2008)? This social participation that happens through digital technologies will in this study be referred to as "*socio-digital participation*".

1.2 SOCIO-DIGITAL INTEREST

The concept of interest is one of the most important topics in motivational psychology. The concepts closely related to the concept of interest are task value, goals and self-regulation, and it combines both affective and cognitive functioning, (Ainley, Hillman &

Hidi, 2002; Hidi, Renninger & Krapp, 2004). Interest includes the relationship of the person and the object (POI), and can itself be further divided into individual and situational interests, the first of which refers to relatively stable orientations that have developed over time and are re-engaged with regularly and the latter one is more related to the environment or task at hand and doesn't necessarily endure. These both are also important motivators of learning, and they both emerge from an individual's interaction with his/her environment and may trigger topic interest, that is a concept specifically related to academic performance. (Ainley, Hillman & Hidi, 2002; Hidi, Berndorff & Ainley, 2002; Hoffmann, 2002; Hidi & Renninger, 2006; Renninger, Hidi & Krapp, 2014.) The four-phase model of interest development proposed by Hidi and Renninger (2006) includes the phases of 1) triggered situational interest, 2) maintained situational interest, 3) emerging individual interest and 4) well-developed individual interest. Further, socio-digital interest is then simply an individual or situational interest that is somehow mediated by modern digital technology.

Ito et.al. in their 2008 ethnographic study divided the youth according to their participation in the new media ecology into two groups, the friendship-driven and the interest-driven groups, the latter of which is closely related to the concept of individual interest mentioned above. They discovered that the interest-driven group's activities and networks were widely distributed geographically and involved a lot of self-directed and peer-based learning in specialized knowledge groups and aimed at improving their craft and gaining reputation among expert peers. The milder form of interest-driven participation in the new media ecology they call "messing around", and it involves self-directed learning about the interest by browsing information or by lurking in online forums and learning new media skills, such as photo and video editing or website customization, by trial and error. The more intensive form of participation, namely "geeking out" involves a deeper dive into the specific topic or talent, and is more highly socially engaged in the specialized knowledge and expert groups. (Ito et.al., 2008.) There have also been a lot of different studies concerning the different forms of participation in the new media ecologies (e.g. Kaarakainen, Kivinen & Tervahartiala, 2013; Kennedy et.al., 2010), but this study is most closely linked to the proposal of Li et.al. (2016) on a rather similar distinction to Ito et.al. of multiple different profiles of socio-digital participation based on statistical latent profile analysis on the ICT activities of 253

participants' self-report questionnaires. They were able to define three groups of socio-digital participation that were labelled "*basic participators*", "*creative participators*" and "*gaming-oriented participators*" (Li et.al., 2016). By basic participators Li et.al. mean the largest group of ICT users, whose new media consumption is not so intensive and mostly in the form of social interaction and networking, whereas the creative and gaming oriented participators are more intensely engaged, on the level of "messing around" and "geeking out" in their practices of creating new media content and playing various virtual games.

1.3 SOCIO-DIGITAL NETWORK

A social network is a constellation of autonomous actors and their relational ties. It constitutes a structural environment, that either provides or constrains the individual actor's opportunities of behavior in the network. An individual network's structure, be it social, economic, political, for example, involves lasting patterns of relations among the actors involved. (Wasserman & Faust, 1994; Borgatti, Everett & Johnson, 2013; Haythornthwaite, 2005; Reich, Subrahmanyam, & Espinoza, 2012; Scott, 2000).

Today, a huge part of contemporary social relations and social communication happens online in different social media sites and technological applications. Many of the online social networks also leave a digital mark or a kind of "fingerprint", you could say. The most obvious example of this kind of "*socio-digital network*" is the popular social networking site Facebook, where each individual user starts by creating a network of friends they hold more or (sometimes a lot) less close to themselves. Even the entire Earth's Facebook-registered population can be seen to form a sort of socio-digital network, where each individual user is an actor whose behavior is restricted or constrained in it. One could clearly see, that this new way of networking would provide lots of completely new kinds of opportunities for its individual actors. (Li et.al., 2016.)

1.4 EXCESSIVE ICT USE AND SOCIO-DIGITAL ADDICTION

Addiction is a behavioural pattern characterized by compulsive engagement to activity that is somehow naturally rewarding. Recent research in neuropsychology and –biology indicates that the dopamine reward system of the brain plays part in the formation of

addictions (Montague 2008; Spanagel & Weiss, 1999; Hyman, 2005). From the viewpoint of evolutionary psychology and the so called dopamine hypothesis presented in the field, you could argue, that any naturally rewarding activities enhance also the reproductive potential of the individual (Workman and Reader 2014). If the engagement of modern adolescents and individuals in general to ICT and different socio-digital applications is considered as naturally rewarding to people, you could say that it would also be a factor that enhances their reproductive capabilities, but this is, of course, a questionable hypothesis, as there are generally many other confounding factors affecting reproductive potential related to clearly excessive ICT use or ICT addiction. Nevertheless, as engaging to digital technologies is becoming more and more general, you would think that disengagement from them would, by making you the minority, lead to at least some level of social seclusion. This in turn makes questionable the concept of excessive ICT engagement as an “addiction”, a psychological illness that requires treatment. With these controversies in mind I touch on the continuum of excessive ICT use to ICT addiction in this study in relation to the individual adolescents’ personal experience of the excessiveness of their ICT engagement.

The existence of ICT addiction has been controversial in modern science, and in particular in the preparation process of the DSM-V (Diagnostic Statistical Manual of mental disorders). The research related to the concept is still in its infancy (Kuss, et.al. 2014). In the DSM version V the diagnosis “*Internet Gaming Disorder*” was defined requiring further research. In their recent study Kuss et.al. (2014) developed a parsimonious internet addiction components model for assessing internet addiction. The components of the model, including salience, withdrawal, tolerance, mood modification, relapse and conflict, were based on the classical addiction components defined by Griffith (2005). Despite further need for the assessment of tolerance as a component in internet addiction, they discovered their model to be valid for the assessment of internet addiction. This model and its’ components was, as described below, used as the basis of the theme interview section on ICT addiction designed for this study.

2 METHOD

2.1 RESEARCH AIMS

The present investigation was carried out in the context of *Mind the Gap*, a research project funded by the Academy of Finland's Human Mind-program focused on pursuing the developmental mechanisms of the contemporary human mind from the level of neural to social processes and cultural contexts by conducting multidisciplinary basic research in different Finnish universities (Mind the Gap, 12.11.2014). The aim of the present study is to examine the upper secondary school adolescents' personal reflections on their interests and socio-digital activities. By relying on self-report questionnaires (SRQ) and social networking questionnaires (SNQ) developed within frames of the Mind the Gap project, it was distinguished three groups of students according to their intensity of socio-digital participation and personal interests (see Li et.al., 2016 for details). A sample of the students was selected for interview according to their primary interest; the interviews addressed the development of their interests and personal significance of interest-related activities. It was also examined their experiences concerning excessiveness use of ICTs.

Using the perspective of three different groups of socio-digital participation derived by Li et.al. (2016), explained in the above chapter "Socio-digital interest", the following questions are addressed in the current study:

- 1. How do participants representing different levels of socio-digital participation (the non-digital interest group or "basic participators", the creative digital media interest group or "creative participators" and digital gaming interest group or "gaming oriented participators") describe their interests?**

Toward that end, it is analysed what are the differential characteristics of each subgroup of study in how they use ICTs related to their socio-digital interests and in the development process of the interest, or if there are any. Also the personal significance of the participation in pursuit of respective interests of the participant groups is investigated.

2. How do the three groups' interest-related socio-digital networks differ from one another?

The interview involved asking each interviewee to draw a network map of the egocentric networks related to their primary interest or hobby. They were also asked to describe with a timeline the development of their interest. These maps of the participants' egocentric networks are analysed in relation to the SNQ the students had filled in the spring of 2014 to discover the similarities and differences in the egocentric networks and their personal significance between the different groups of socio-digital participation.

3. How do participants representing the three groups reflect on intensity of their socio-digital participation? To what extent do the participants experience their socio-digital participation as excessive or addicted?

The present participants had responded to a SRQ conducted for the project Mind the Gap in the spring of 2014. In this survey, there was a section of questions to investigate the participants' level of ICT addiction. The answers to this section are analysed in relation to the interviews conducted. The interview section designed to measure internet addiction was adapted from the parsimonious internet addiction components model by Kuss et.al. (2014).

2.2 PARTICIPANTS AND DATA

The participants of the present investigation included 76 students from a teacher-training high school from Southern Finland who responded to Mind the Gap SRQ and SNA in their first-year; out of the overall sample, 17 students were invited to a theme interview during their second high school year. The high school contains both an English language IB (International Baccalaureate) and a regular (Finnish) program. All interviewees except three are native Finnish speakers. The interviewees were selected to represent the three groups of socio-digital participation determined by Li et.al. (2016) on the basis of SRQ and SNA data. The three profiles of socio-digital participation included "basic participators", "creative participators" and "gaming oriented participators". Each subgroup is characterized by distinctive usage preferences of ICTs and levels of socio-digital participation (Ito et.al., 2008). Sampling the interviewees also relied on the participants' primary interests indicated by the SRQ. The theme interview aimed at

obtaining deeper, in-depth view regarding the participants' socio-digital participation preferences, examining how interests of the groups differed from each other and exploring participants' personal (socio-)emotional experiences related to their socio-digital and other interest-driven activities.

The SRQ included several themes related, for example, to the participant's schoolwork, interests, and socio-digital interests. The selection process of the interviewees was based on the Mind the Gap survey and network questionnaires as follows. The variables "spending time in interests in different contexts" (reported in hours/week in the SRQ) and "intensity of practices related to interests online" (Likert-scale 1-7 on e.g. questions "how often do you follow profiles, pictures and activities of your friends?", "how often do you play adventure games?", "how often do you share music you have created or remixed?") from the SRQ were the primary factors taken into account.

The SNQ was basically a list of all the names in the school, class by class, in which each of the participants in-school marked the schoolmates they 1) hang out with (hangout network), 2) especially like (liking network), 3) are in contact with through ICT and 4) who they turn to for help in ICT related issues (Li et.al., 2016; Scott, 2000). In the first column of the SNQ was the participants' roster of the same grade and 2nd-5th columns were the 4 networking dimensions investigated. The network indegree values are basically the network centrality measures based on the amount of mentions of one participant by the others, and the reciprocal degree refers to a mutually recognized mention by both of the participants (Wasserman & Faust, 1994). The social network data, based on the nomination by a larger group of peers, helps in overcoming the restrictions of mere self-reported ICT expertise by an individual participant in SRQ and SNA. Further, the reciprocated (recognized by both ends of the dyad) interest and hangout network and the indegree (the measure of network centrality) of ICT expertise were derived from the SNQ of reciprocal ties within the participants' grade in school. For the interview, the participants with the largest network values in these three categories were selected.

The SRQ included open-ended items regarding the participants' personal goals, favourite interests, and socio-digital participation activities. By relying on qualitative analyses of in-school participants' (N = 76) responses, their interests were categorized into five

interest groups that were partially related to their socio-digital participation profiles. The classification of the interest categories into the different SDP profiles is based on how Li et.al. (2016) described the interests characterising each profile.

1. sports/travel (basic participators)
2. computer/internet/cars/machines/games/video editing (gaming oriented participators)
3. music/dance (creative participators)
4. art/books/photos and other interests (creative participators)
5. family/friends and those did not respond enclosed open-ended questions (as control group of students not having a passionate interest) (basic participators)

Furthermore, the hangout network value and gender of students were somewhat taken into account in the selection. The entire data file of the upper secondary school under investigation (N = 76) was then sorted based on the answers to the previously mentioned variables. It was the aim to have a gender balanced sample by inviting as many males as females to the interview. Based on the sorted Excel-file, the first 20 participants were selected and invited to a maximum of an hour long interview happening at their school during general study hours. Due to some participants' absence, in the end, 17 participants (Table 1) participated in the personal interviews. Because of some missing interview recordings caused by recorder malfunction, in the end there were 15 transcriptions and 17 participants' egocentric network maps and key-event timelines to be analysed. The interview recordings last from about 30 to 65 minutes and there were in total 700 minutes' (almost 12 hours) audio materials to be transcribed. The transcriptions range from 4400 to 8600 words, and the total word count of the transcriptions is 87 900. There are also in total 15 egocentric maps and 5 key-event timelines produced by participants in the interviews for further analyses. The amount is uneven because initially the participants were asked to draw both the network map and the timeline, but since this seemed to consume too much time per one participant, it was decided to let them select whether to draw a map or timeline.

Concerning the three profiles of socio-digital participation, each of these were categorized having specific primary interest types related to them, as defined in the list above. The most obvious example is, of course, that gaming oriented participators are the ones into

computers and gaming etc.. The creative participators in this study are, in turn, the ones into art, books and music etc., namely interest groups 3 and 4, but there are also two adolescents into somewhat creative, socially conscious or societal practices; they are categorized into this group as well. There is a somewhat more shallow level of creativity in some of the musical interviewees, as some are only listening, not producing music as a pastime, but I do count them as creative participators since there are, nevertheless, somewhat creative socio-digital practices involved in terms of talking passionately of music and engaging in various musical activities, such as events. Overall, these two groups are characterised by interest-driven socio-digital practices, such as “messaging around” and “geeking out” (Ito et.al., 2008).

In this study, we counted the more friendship-driven and non-digital interest groups 1 and 5, namely ones into sports, family and friends etc. into the basic participators, since the athletes in this study do not have particularly heavy involvement in the socio-digital world. So in the end, there are in total 3 “gamers”, 9 “creatives” and 5 “basics” involved in this study. The gender distribution of the interviewed participants was about 40 % male and 60% female. All of the primarily gaming oriented participants were male and three out of the five basic participators were female. Only one out of the largest group interviewed, the creative participators, was male. The balancing of the genders in the different groups in this small sample then is not as successful as desired, but somewhat in accordance with the results of previous studies and the gender distribution of upper secondary school students in Finland in general (Kaakarainen et.al., 2013; SVT, 2015). To investigate the level of ICT addiction in participants, there was also a special Likert-form section in the SRQ, which was used to form a sum composite variable that is used in further analyses in the following chapters (Cronbach’s alpha = 0,80, see details in Appendix 3).

Table 1. Selected participants and the source of data used in selection. The participants from different socio-digital profiles are labelled accordingly (B = basic participants, C = creative and GO = gaming oriented) and highlighted with different colours. The source of data either self-report questionnaire (SRQ) or social network questionnaire (SNQ).

| P | Gender | Spending time in interests in different contexts (h/week) | Intensity of practices related to interests online (SRQ) | Interest network recip. (SNQ) | Hangout network recip. (SNQ) | Indegree of ICT expertise (SNQ) | M | Interest group (SRQ) | ICT Interest group (SRQ) | Interview duration (min) | Transcription length (words) | Socio-digital profile | Code on SRQ | ICT addiction (SRQ) |
|-----|--------|---|--|-------------------------------|------------------------------|---------------------------------|----|----------------------|--------------------------|--------------------------|------------------------------|-----------------------|-------------|---------------------|
| BP1 | female | 28 | 4 | 2 | 17 | 1 | | 5 | 5 | 39 | 5079 | Basic | 1381 | 2,83 |
| BP2 | female | 29 | 5 | 26 | 14 | 1 | | 1 | 1 | 45 | 5567 | Basic | 1425 | 1 |
| BP3 | male | 29 | 7 | 16 | 32 | 0 | 23 | 5 | 5 | 55 | 8098 | Basic | 1345 | |
| BP4 | male | 27 | 9 | 7 | 22 | 2 | | 1 | 1 | 30 | 4011 | Basic | 1399 | 2,33 |
| BP5 | male | 29 | 10 | 12 | 29 | 5 | | 5 | 5 | 42 | 4565 | Basic | 1414 | |
| CP1 | female | 29 | 5 | 9 | 19 | 0 | | 3 | 3 | 54 | 5843 | Creative | 1340 | 4 |
| CP2 | female | 28 | 7 | 5 | 12 | 0 | | 2 | 5 | 47 | 5760 | Creative | 1341 | 3,33 |
| CP3 | female | 26 | 11 | 2 | 14 | 2 | | 4 | 5 | 41 | 5718 | Creative | 1342 | 2,5 |
| CP4 | female | 28 | 9 | 1 | 22 | 2 | | 4 | 4 | 62 | 8586 | Creative | 1379 | 2 |
| CP5 | female | 33 | 4 | 2 | 12 | 0 | 16 | 3 | 3 | missing | missing | Creative | 1387 | 3,83 |
| CP6 | female | 27 | 8 | 4 | 6 | 0 | | 4 | 4 | 47 | 6543 | Creative | 1388 | 3,67 |
| CP7 | female | 35 | 8 | 0 | 0 | 0 | | 4 | 4 | 61 | 6129 | Creative | 1406 | 3 |
| CP8 | female | 30 | 10 | 23 | 35 | 1 | | 3 | 3 | 43 | 5564 | Creative | 1437 | 2,33 |
| CP9 | male | 27 | 12 | 8 | 24 | 4 | | 3 | 3 | missing | missing | Creative | 1367 | 2,67 |
| GO1 | male | 27 | 10 | 8 | 16 | 4 | | 2 | 2 | 40 | 5737 | Gaming | 1358 | 3,83 |
| GO2 | male | 28 | 7 | 0 | 0 | 0 | 9 | 2 | 2 | 48 | 4431 | Gaming | 1377 | |
| GO3 | male | 34 | 10 | 4 | 12 | 8 | | 2 | 2 | 46 | 6246 | Gaming | 1438 | 5 |

2.3 ACQUISITION AND ANALYSIS OF RESEARCH DATA

Acquisition of data

The particular interview methods used in the current qualitative study in addition to a general theme interview were called "Key event interview" (Vekkaila 2014) and egocentric network interview (e.g. Hogan, Carrasco & Wellman, 2007; Marsden, 2002; McCarty, Molina, Aguilar & Rota, 2007). The idea of the key event interview was, firstly, to determine the primary interest of the interviewee, and, secondly, ask them to describe it and the associated social, digital and networking activities in further detail. The participant was requested to draw a timeline of the key events in the formation of their interest, and/or to draw a map of the egocentric social or socio-digital networks related to it. The egocentric network option, which is a pen-and-paper counterpart to the betweenness measure derived from social network questionnaires (Marsden, 2002), was to investigate the participant's social, egocentric networks related to the primary interest in more detail. The participant was requested to draw a map with themselves in the centre, and around them the most important people to them in relation to their socio-digital interest in question (McCarty et.al., 2007), and to describe the nature of the relation at the same time. Also, the addictive behaviour patterns related to the interest were investigated with further questions. In the end, the transcribed interview material was used to complement the timelines and maps when necessary.

The themes of the general part of the interview were 1) hanging out online, 2) interests and hobbies, (3) key event/egocentric networks related to primary interest), 4) academic support, 5) IT competencies and 6) socio-digital addiction. The quantitative data from the SRQ and SNQ were collected in the spring of 2014 as mentioned above, and they were acquired through the Mind the Gap project staff. Although the present school sample was rather small (N = 76), some statistical analyses were carried out to identify suitable interviewees and to overcome the brevity of some participants' answers in the interview with their open-ended answers to the self-report questionnaire and to look into the ICT addiction profiles and network centrality measures of the participants in a numeral form (Tuomi & Sarajärvi, 2003).

Analysis of data

The themes addressed in the interviews were analysed according to the method of qualitative content analysis (Krippendorff, 2004; Kvale, 2007; Tuomi & Sarajärvi, 2003). The categorization of the transcriptions, maps, and timelines was conducted conceptually and thematically in relation to the participants' socio-digital participatory interest groups (Li et.al., 2016), interview themes, background theories presented above and, of course, in relation to the research questions (see Table 2.). Since the aim was to find out differences and similarities between the different participator groups, the grouping was a strong, analytical guideline present in the entire process of analysis. To summarize the distinctive interests of the participator groups these will be specified with each interviewed participant on tables in chapter 3.1. To some extent the analysis will also focus on points not obviously related to the research questions but that arise from the content itself, and these points will be highlighted in more detail in the discussion (Tuomi & Sarajärvi, 2003). The qualitative analysis of the transcribed data was carried out with the help of Atlas.ti program. The categorization was grounded on the previously mentioned themes and research questions, and these categories were highlighted in the transcriptions using Atlas.ti.

Table 2. An example of the framework used for group by group analysis. Based on the interview themes and research questions.

| [PARTICIPATOR GROUP TITLE] | CATEGORIES | IN-GROUP GENERALIZATIONS | EXAMPLES FROM INTERVIEWS AND QUESTIONNAIRES |
|---|--------------------|--------------------------|---|
| | Hanging out online | ⋮ | ⋮ |
| Characteristic socio-digital interests | ⋮ | ⋮ | |
| Characteristic non-digital primary interest | ⋮ | ⋮ | |
| Development of interest | ⋮ | ⋮ | |
| Egocentric networks in interest | ⋮ | ⋮ | |
| ICT skills | ⋮ | ⋮ | |
| Socio-digital addiction | ⋮ | ⋮ | |

When it comes to the nature of qualitative research in general, interview as a research method of course has its own disadvantages related to the whole social setting of interviewer – interviewee, in which for example authority, gender, race and class play big part (Denzin & Lincoln, 2005; Kvale, 2007; Tuomi & Sarajärvi, 2003). In order to elicit detailed and content rich material and create a trustful atmosphere, the interviewee was relatively young and herself familiar with digital practices of adolescents. The data was analysed in interaction with a more experienced researcher. To improve reliability and validity of the analysis, multi-faceted, mixed methods data was used (Tuomi & Sarajärvi, 2003; Kvale, 2007.) The issues of reliability and validity will be discussed in further detail below in the section "Reliability and validity of analysis". Next we will move onward to discuss the actual results of the investigation at hand.

3 RESULTS

The results section of this qualitative study is organized so that each research question is addressed in order of succession and separately with each group of socio-digital participation. First I will address the differences and similarities between the participants' reflections on their usage interests and their development process within the three different SDP groups. Second I will examine on the differences and similarities between the participants' socio-digital networks and their personal experience of their relationships separately in the different SDP profiles. Last I will present the participants' reflections on and the SRQ data related to the excessiveness and addictive qualities of their ICT use and some criticisms that arose on the topic of ICT addiction on the participants' behalf.

3.1 HOW THE NATURE OF INTERESTS DIFFERED BETWEEN THE THREE SOCIO-DIGITAL PARTICIPATOR GROUPS COMPARED

The purpose of the present study was to investigate what are the personal reflections of the participants from each subgroup of socio-digital participation in how they use ICTs related to hanging out with peers online, their interests and skills, and whether there are any differences in these between the groups. In order to answer to the first research question, main interests of participants representing the three socio-digital orientations were analyzed. By relying on corresponding interview themes and the timelines the participants were also requested to draw to reflect on the development process of their interest in more detail this question will be examined in the following section.

Basic participators with non-digital primary interests

As mentioned above, there were in total five participants in the study that could, according to their interests and ICT interest mentioned in the SRQ, be defined as basic participators (Li et.al., 2016). In their interviews, when asked about their non-socio-digital primary interest, all basic participators brought up sports hobbies. Many of the interviewed basic participators mention they have pursued competitive sports in the past, but later on their hobbies have become non-competitive in nature. Their reasons of continuing were mostly

related to taking care of one's appearance. Also health reasons were brought up, and when asked a non-interest-related question about ICT addiction and whether they use technology to sort of "escape" bad thoughts and feelings, two participants (both boys) brought up the importance of the sport hobby for this particular purpose. It would then appear that the sports hobby is just as important in the supporting of the basic participants mental health as the technology related, more "geeked out" hobbies (Ito et.al., 2008) are to the other groups.

The socio-digitality brought up by the basic participants related to their primary interests, that are obviously not very socio-digital by nature is related most often to practical hobby-related issues, such as reserving classes or workouts, meeting up with friends and teams for the practice and so on. This was mostly conducted through different web applications. One basketball player mentioned they have an instant messaging (WhatsApp) group with their peer team where they inform about cancellations and such, but also talk a lot off-topic. Boys of the group also mention following their sport, and other sports as well, online in the form of, for example, watching recap videos on YouTube of specific matches or following their favourite team's profile on Instagram. Girls appeared to browse more blogs, microblogs (Instagram, Pinterest), videos (YouTube) and internet sites in general for workout and nutrition tips and inspiration. The ICT knowhow brought about by the interest seems to be, obviously, browsing for information related to it, but also picture editing, which is mainly used to enhance your selfies to look better on Instagram or Facebook.

“BP2: Ööm, noo... Just niinku joittenki blogeista, ja sit tota... Ja sit o iha semmosii niinku urheilusivuja, tai semmosii, mist niinku just esimerkiks on niinku tavallaa treeniohjeit ja semmosii ruoka niinku ohjeit, et jos niinku käyttää jotai... Tai niinku hyötyi ja haittoi esimerkiks tommosist... mitä ne nyt on... lisäravinteist ja tämmösist, et mitä niinku kannattais käyttää--”

Table 3. The primary interests of the basic participators and their description.

| P | GENDER | PRIMARY INTEREST | NOTES |
|------------|---------------|-------------------------|---|
| BP1 | female | Gym | <ul style="list-style-type: none"> • Goes to gym for health reasons • Socio-digitality only in the form of asking friends and siblings to join |
| BP2 | female | Gym | <ul style="list-style-type: none"> • After quitting volleyball continued sports in the form of gym workout • Mentions browsing the internet for workout tips and inspiration |
| BP3 | female | Activity CAS (jogging) | <ul style="list-style-type: none"> • CAS (Creativity, Action and Service) is a compulsory part of the IB curriculum, BP3 had decided to do her activity part by aiming to enhance her oxygen uptake through jogging and occasional boxing • Says her friends and dog support her practice |
| BP4 | male | Basketball | <ul style="list-style-type: none"> • Plays competitive basketball • Mentions having a WhatsApp group for team members where they inform about cancellations and talk off-topic |
| BP5 | male | Football | <ul style="list-style-type: none"> • Plays non-competitive football → the reason for continuing practice after competitive team fell apart because of appearance reasons • Mentions picture editing to enhance selfies |

The main, distinctive interest of the basic participators that is actually socio-digital in nature is hanging out with their friends online (Ito et.al., 2008). The personal significance of technology as a mediator of social engagement that the basic participators brought up in the interviews were mainly the easiness of socializing, staying connected to the world around you and not being left outside. One participant brought up the easiness of web-based written communication in contrast to the face-to-face interaction, but also the relatively common misunderstandings that come with the written form of expression and the “controlled casualness” of online speech (Ito et.al., 2008). Nevertheless, another participant brought up how she thought of it as weird, and apparently not very valid, how nowadays you can call someone your “friend” and only talk to them online and hardly ever face-to-face, which it would appear seems to happen these days. One (IB) hangout

also brought up the personal importance of spreading awareness on a personally significant social issue on social media.

”BP4: No siis tietenki sillee, niinku mieltii aikasemmi, nii sit pystyy niinku... pal nopeemmin saa niinku kiinni kaikki ihmiset, paljon niinku helpommi, ja ei niinku välttämät tarvi just... niinku just soittaa, tai jotai, et... On se vähä sillee niinku et... Et ku ei... Ku se o paljo erilaist se niinku... sillee ku et keskustelis vaa tällee, ni sit niinku et kirjottaa sen, ja... Sit voi tietenki tulla ymmärretyks vääri jos sen niinku kirjottaa jotenki... jotenki huonost, tai sillee niinku, et ei pysty niinku reagoimaa toisee mitenkää sillee periaattees.”

Creative participators with creative media interests

According to their reported interests in the SRQ, nine participants of the study were categorized as creative socio-digital participators (Li et.al., 2015) (see chapter 2.1). The defining interests of most of the participants belonging to the creative participators group are somehow artistic or musical in nature, namely drawing, playing piano, playing guitar in a band and dancing. However, two of the interviewees belonging to this group indicated in their SRQ responses and interviews societal activities, such as scouting and politics. In the case of scouting, there were somewhat creative socio-digital practices involved in the practice itself, and the socio-digitality involved in the hobby and the conscientiousness of the individual itself provided the chapter with some interesting considerations, so I will deal with these practices briefly in this chapter as well and consider more of their implications in the discussion. The girl who mentioned politics as her primary interest was labelled belonging to this group based on her socio-digital participatory interest in interior design, but the interest in private philosophising and politics she mentioned as her favourite pastime manifested themselves mostly at school and her good grades, in for example Finnish essays. Some interesting observations were still based on her answers as well. Also it's worth mentioning, that the creativity of the creative participators is not generally restricted to one area, but people interested in painting art, for example, also appeared, in this sample, to be productive and talented writers and poets.

Some of the interviewees of this study labelled here as creative participators are highly creative artists and bloggers, others just spend most of their free time in so called

“fandoms” focusing on geeking out (Ito et.al., 2008) around a specific type of music, for example. The defining characteristic for creative participators in this particular study (compare to e.g. Li et.al., 2016) is, that they all have socio-digital practices revolving around some form of art. The beginning point of the interest’s development is not so easy to describe for all, because they felt they have “always enjoyed” drawing, singing, etc., but the most significant and memorable part of the development process for almost each of them has been finding your own style, subject, instrument or genre of expression. Also the development process in general is well characterised by one participant after asking whether they felt they have achieved the best possible development in their art:

”CP7: En! En koskaan. Ei ihminen ei voi saavuttaa parasta. Mul on paljon parannettavaa vielä.

M: Vaiks noi onkin ihan tosi realistisia... [referring to the drawings she’s just showed]

CP7: Joo mutta aina voi pistää paremmaks. Koska aina on kumminki olemassa se kahdeksanvuotias aasialainen, joka piirtää paremmin ku sinä.”

For the pianist and the guitarist in the study, the purchase and inheritance of the instrument and also other support from the relatives appeared to have been important for the development and also continuation of the interest. The pianist mentioned that her mother’s expression of her regret on the fact she herself quit playing in her teenage years was the fact that kept her going in the same situation, and the guitarist would not probably have started playing in the first place if he had not inherited an acoustic guitar from his grandfather. One girl (CP3, see Figure 2.) mentions having started art in a more formal context than the other artists, but similar to the pianist taking piano lessons, when her parents put her to art school. In her case, also the description of the development process is more formal and technical, 2 hours a week, different classes etc., but it also involves as an important factor the point where she discovered her specific topic of interest to depict: people. Concerning the personal significance of the interest, her description is the only one that involves some sort of competitive aspect. Most of the participants highlight the importance of the interest in handling emotions and also the rewards in having certain individuals to idolise, in themselves or as muses for their own expression. Also the social

aspect and communality, “being part of the world” brought by the sharing of content is no doubt extremely important for the participants, and it will be described in more detail in the next subsection concerning creative participants’ socio-digital networks. Even though the interest seems to carry a lot of personal significance to the participants and make up a huge part of their lives, only one brought up the desire to make it into an occupation later in life, since in this case they fear it would “stop being so much fun” (CP7). “*Koska mä oon sinänsä niinku koittanu tehdä sitä työmielessä, mut siit lähtee hupi sillon*”, she says. Nevertheless, CP7 as the most intensively creative participator according to her SRQ answers appeared to have very profound reasons for her enthusiasm about drawing, as she describes:

”CP7: Mut joo siis, minkä takia piirtäminen innostaa? No... Huooh... Voi kai se osittain olla sitä, et kun ihmisestä ei paljoo jää jäljelle tän elämän aikana... Taiteella jää. Jotain kivaa. Plus sit mä voin näyttää ihmisille mitä mun pään sisällä tapahtuu, mitä mä ajattelen, ja muutenkin mä voin ihan itellenikin laittaa muistiin mitä tullu mietitty. Plus se miellyttää silmää, se innostaa muita ihmisiä. Ja muutenkin on se vaan niin hieno tunne, kun osaa piirtää ihan mitä tahansa.”

Concerning the ICT competencies of the media creators, it would seem that many are quite skilled in the use of specific picture manipulation tools, drawing tablets etc., detailed knowledge brought about only through the particular, with most self-regulated interest in arts. With the musicians it seems to be a general practice nowadays to, instead of reading the notes or tablatures on a traditional paper book, read them on a computer or tablet, and the pianist mentioned having printed out notes for her teacher to practice with as well. In a similar way that the artists mentioned sometimes watching video tutorials in e.g. YouTube, practicing songs by listening them on a computer at the same time is also a general practice at least among the self-taught musicians of the study. Also, quite interestingly, some musicians, as well as one hangout mentioned, that listening to music while studying helps them concentrate. With a few creative participators (CP3, CP4, CP7 & CP8) the aspect of blogging brings about some talent in web design and html-programming, and many even say if someone asked them to do some changes in the html-code on their website, they probably could “figure it out somehow”. In addition, CP1, who was oriented towards scouting mentioned she had learned a lot about magazine

editing and digital editing environments as an editor in chief for her troop’s magazine, as did one male basic participator.

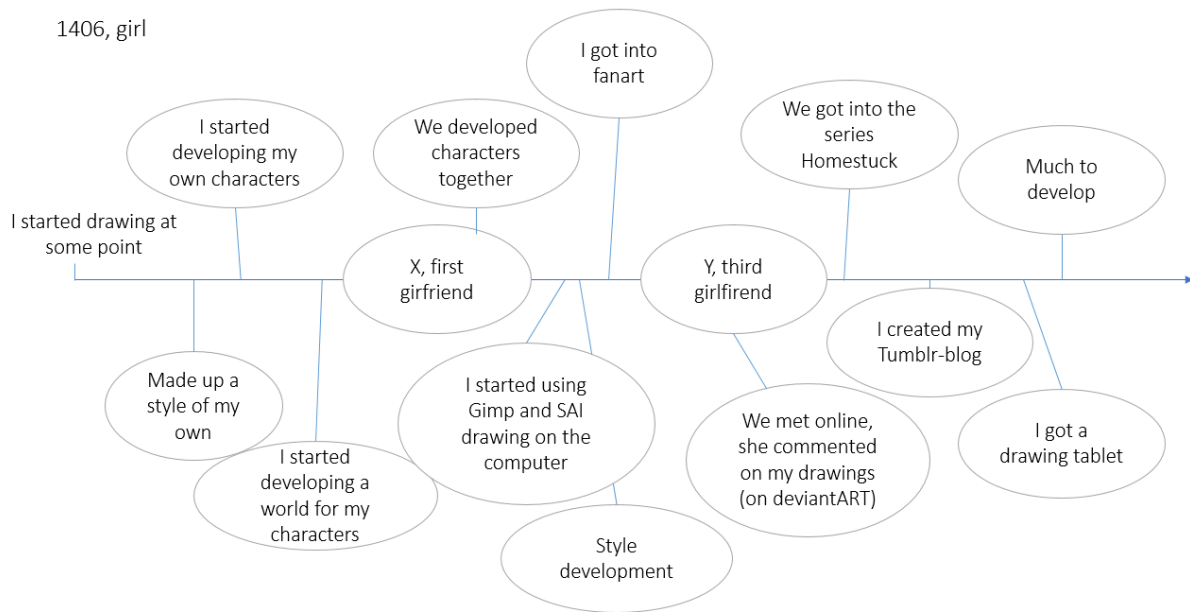


Figure 2. Participant CP7’s timeline of her art interest’s development chronologically progressive from left to right also indicated by the small arrow. The years are not specified because they were difficult to distinguish for the participant.

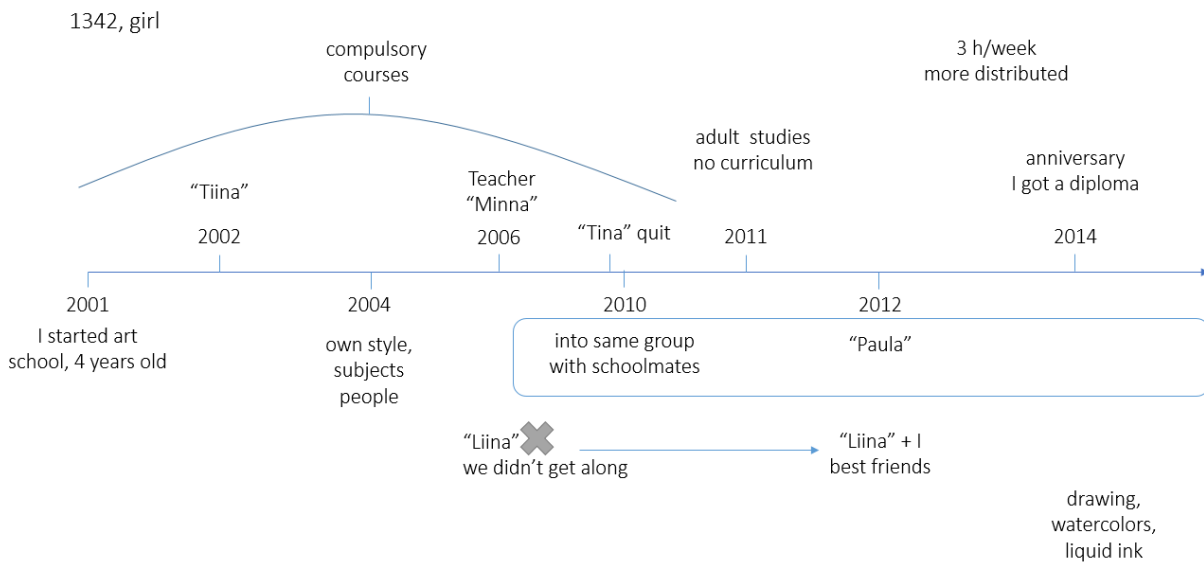


Figure 3. Participant CP3’s timeline of her art interest’s development. Notice the difference between the formal and informal (CP7, Figure 2.) developmental contexts in e.g. how easy it is to distinguish the years for specific key events.

“CP3: Öö, no joskus... joskus sii valokuvausinnostuksen aikoihin, joskus yläasteen alus, nii mul oli blogi jonku aikaa, nii kyl mä sitä varten just niinku opettelin sitä just niinku nettisivun sitä niinku pohjan luontii ja niit niinku ulkosii elementtei mitä siihen pysty laittaa, nii html-koodi niinku onnistuu kyl jotenkuten.”

There were two creative participants, as previously mentioned, that were also quite actively into politics and into “changing the world” around them, so to say. The other one did not admit ever actively expressing her own opinions online, only “liking posts on Facebook”, but the other one had a microblog (Tumblr), where she actively posted inspiring quotes and shared links to spread awareness on ecological and ethical issues that were important to her. She said this was an “irreplaceable channel” for finding and spreading knowledge of, for example, human rights issues around the world. It is quite miraculous actually when you think about it: The police shoot an innocent man in Ferguson Missouri, and almost immediately afterwards a school girl in Turku, Finland feels it is her duty as a citizen of the world to defend this man’s human rights. Would this have been possible 1 – 2 decades ago? Even though idealism in the youth has always been a common phenomenon, it would certainly seem the world is much more closely knitted now, and these youth are born to a world, where the events happening on the other side of the world also have an effect on their everyday environment, at least the socio-digital one. There is also no doubt, that the youth who actively participate in the form of blogging or microblogging, for example, not only utilize the knowledge and practices learned at school (and scouting in this case), such as their writing and argumentation skills, but also learn a lot school relevant skills and issues through socio-digital participation in internet.

Table 4. The primary interests of the creative participators and their description.

| P | GENDER | PRIMARY INTEREST | NOTES |
|-----|--------|--------------------|--|
| CP1 | female | Scouting | <ul style="list-style-type: none"> • Has various primary interests: On SRQ mentions dancing, which lead her to be categorized into this group • Magazine editing skills through experience in troop magazine editing • Tumblr “activism”, interest in social and human rights issues worldwide |
| CP2 | female | Music | <ul style="list-style-type: none"> • Listening and occasional singing with sisters • Purchase of family computer (4th grade) and personal mp3-player (6th/7th grade) important developments in musical interest • Has many different genres she has listened to at different times, but the current and also long-time favourite is Korean pop music, or “K-pop” she discovered on 6th grade through a friend • Member of K-pop “fandom” • Has also played piano in the past |
| CP3 | female | Art | <ul style="list-style-type: none"> • Is the only artist out of the participants who has gone to a formal art school • Has been rewarded by the school after several years of practice for accomplishments⁴ • Is more into astrophysics as a future occupation • Favourite subject to depict: people |
| CP4 | female | Following politics | <ul style="list-style-type: none"> • Various primary interests: On SRQ mentions interior design which lead into categorization into this group • Does extremely well at school and enjoys writing essays → probably has to do with the interest in societal issues and following the news actively |
| CP5 | female | Dancing | <ul style="list-style-type: none"> • Begun the hobby from older sister’s example with a friend and from mother’s encouragement • Encouragement and admiration from family, friend’s support and motivation from the teacher keeps going |
| CP6 | female | Art | <ul style="list-style-type: none"> • Is intensely engaged in an online arts community of bloggers, “tweeters” and “YouTubers” or “vloggers” • Favourite subject to depict: landscapes/scenery • Is the only one who mentions wanting to make their primary interest into an occupation (theatre set designer) • Hard to distinguish beginning of interest |
| CP7 | female | Art | <ul style="list-style-type: none"> • The most intensely engaged out of all the 17 participants • Hard to distinguish beginning of interest • Has an art blog (Tumblr) with a few hundred regular followers or fans • Skilled, self-taught user of a drawing tablet and image editing software • Loves to create entire universes of characters with help from girlfriends • Other interests: writing, reading an online comic, gaming, blogging, cosplay, chatting with girlfriend whom she has met through her art blog |
| CP8 | female | Playing piano | <ul style="list-style-type: none"> • Beginning easy to distinguish: when starting piano lessons and purchase of the instrument • Mother’s regret on her quitting as a teenager made her want to continue • Also enjoys dancing, going to the gym, writing and has had a blog from which she has learned to code html |
| CP9 | male | Band | <ul style="list-style-type: none"> • Inheritance of a guitar and keyboard from his grandfather was the starting point of musical interest • Found a guitar teacher through his friend’s father • Plays about two hours a day • Parents have purchased gear, cheered on and always listened to music at home |

Digital gaming oriented participators

Based on their SRQ answers there were in total 3 gaming oriented socio-digital participators that were selected for the interview, all of whom were boys, even though there was one girl in the group of creative participators (CP7) who brought up gaming as one of her minor interests. The gamers of the study are the ones that seem to spend the most time on a traditional PC, and, perhaps surprisingly, most time “on the phone”, so to speak. The talk about the development process of the interest with one participant (GOP1) revealed in fact a very social background for the hobby. They had begun gaming as children as a group of neighbourhood kids that gathered to a friends’ house collectively playing video games on Xbox. Slowly the interest got more immersive, and they started playing computer games by themselves. The participant mentioned that after moving to another city because of a parent’s work situation, his and his brother’s gaming situationally got more intense, because of the lack of friends and, therefore, activities in the new neighbourhood. After they started school, naturally new friends were found, but the closest ones seem to now be mostly gamers as well. It would seem that the gaming provides a pleasurable, social activity to spend your free time doing. Another interviewee (GOP2) only mentioned the starting point of the interest at 5th or 6th grade, when their mother bought them their first family computer.

All of the gamers mentioned a few online multiplayer games they spent most of their time playing (Dota 2, Counter Strike: Global Offensive, Team Fortress 2), but they mentioned also sometimes playing offline, single player games as well. One gamer (GOP3) mentioned that he usually spends about a 100 to 200 hours engaged to one game until he gets bored of it for a while, does something else, and then starts with the same game again. Overall, the social and competitive aspects seemed to be important motivators for their gaming, but also the fascination with experiences unavailable in real life situations was clearly visible (Jansz and Tanis, 2007; Jansz & Martens, 2005; Frostling-Henningsson, 2009; Trepte & Reinecke, 2011). Other minor interests members of the gamers-group brought up in the interview and SRQ were reading, watching anime, playing guitar, playing badminton, soft fencing or “boffing”, computers in general, browsing the web on various situational interests and chatting with friends and girlfriend.

The gamers' ICT knowhow varied quite a lot, from extremely knowledgeable to slight disinterest. Most said they usually try to fix problems themselves using Google, but some easily got help from their parents when they encountered an ICT related problem. As one participant, whose father works on computer science, puts it:

"GOP1: Joo, mä pyydän [apua] useemmin niilt [kavereilta], koska niil on justiin sillee, et niiden perheessä niinku ne käyttää eniten konetta, ja sit ne on käyttäny sitä niinku... ne on pienestä asti niinku hoitanu kone... niinkun tietokonepuolen niiden talossa, et niiden vanhemmat ei oo silleen samal tavalla."

The level of ICT knowhow in parents then appeared to affect how much the child has to spend time learning about fixing computers and programs, and how their expertise is developed. The other interviewee (GOP3), participant GOP1 appears to clearly underestimate his ICT knowhow as just "ok", seen when his report is put to comparison with other participants. He even mentions Linux, instead of gaming as their primary ICT interest in the initial SRQ, and further describes: *"It has become an important part of me, when I understood the concept "Free as in Freedom"*". He shows some deeply "geeked out" practices (Ito et.al., 2008) also in mentioning he can use the computer through only

Table 5. Primary interests of the gaming oriented participators and their description.

| P | GENDER | PRIMARY INTEREST | NOTES |
|------|--------|------------------|--|
| GOP1 | male | Computer gaming | <ul style="list-style-type: none"> • Mentions gaming having gotten intensified after family moved to another city • Has siblings that game as well • Other interests: badminton, watching anime, reading, browsing the web on situational interests, hanging out with friends |
| GOP2 | male | Computer gaming | <ul style="list-style-type: none"> • Has a brother that games as well • Other interests: playing the guitar |
| GOP3 | male | Computer gaming | <ul style="list-style-type: none"> • Has few different games he gets engaged with periodically • Other interests: computers in general, watching anime, reading, soft fencing, hanging out with friends and girlfriend • Seems to have very high ICT competences |

the command prompt and using his external hard drives through a separate mini laptop computer he has installed “a minimal version of Linux” on. The highly specialized, “nerdish” language that Ito et.al. mention in their 2008 study is also seen with gamers, as the interviewer tries out her own vocabulary and gets corrected many times by at least one of the gamers (GOP2). Contrary to what Ito et.al. presume, apart from this one participant gamers reported many social ties so that their socio-digital participation does not, however, appear to interfere with the participants’ social relations with the opposite sex, since one of the three participants is actually in a relationship with a girl he has met online, as well (Cole & Griffiths, 2007).

In summary

All in all, the development processes of the primary interests and also the personal significance attributed to them differs to some extent quite drastically in different participator groups based on their reflections. The beginning point is easier to distinguish in interest that happen in a more formal context, such as a sports club, an art school or piano lessons. Also the purchase of the instrument or computer seem to have given a spark to the development musical interests and gaming. With the artistic interests, except the one involving the art school context, the exact beginning is more difficult to point out, and many of the participants say they have “always enjoyed drawing/painting/etc.”. Also some gamers find it difficult to distinguish the exact point for the true beginning of their interest after starting to use computers.

The main personal significance of the basic participators for their primary SDP form, hanging out with friends, seem to have mostly do with staying connected to the world around them and “not getting left outside”, and also the easiness to connect with real life friends through technology. Contrary to this, the creative participators bring up some similar, but also some slightly more profound reasons, like “leaving something behind” and handling their emotions. Similarly, some of the basic participators (BP4 & BP5) brought up their sports hobbies’ importance in escaping bad thoughts and feelings, which is also what the gaming oriented participators’ games seem to do to them. There do indeed seem to be more intense forms of so called “messaging around” and “geeking out” (Ito et.al., 2008) in the creative and gaming oriented participators than in the basic ones, which is

seen also in the better ICT related knowhow of these groups of participants, both genders included. There were also some differences between the networking structures between the different SDP profiles, which will be analysed in the next section, where I will look at the differences between the participants' socio-digital networks in general and related to their primary interest.

3.2 HOW THE THREE SOCIO-DIGITAL PARTICIPATOR GROUPS' INTEREST-RELATED SOCIO-DIGITAL NETWORKS DIFFERED FROM ONE ANOTHER

In the interview that was conducted for the current study, each interviewee was requested to draw either a developmental timeline or a map of their apparent, everyday egocentric networks related to their primary interest or hobby. 15 of them chose the latter option, and in order to answer to the second research question, these maps of the participants' egocentric networks will be analysed, group by group, in connection with the data from the transcribed interviews. Also the SNQ indegrees of the study participants will be touched upon descriptively in brief. As follow results of examining the participants' interest-related social networks are reported by starting from basic participators and moving then to creative ones and gamers.

Basic participators

The socio-digital networks of the basic participators are widely dependent upon the socio-digital world. According to the interview records, the most popular networking and communication apps among the participants, some not restricted to the basic participators, were WhatsApp, Instagram, Snapchat, Kik and Facebook messenger. Instagram appeared to be the most time consuming networking service among the basic participator adolescents, and many said that they spent altogether a couple of hours a day just browsing Instagram. Regarding Facebook, most reported they just browse and sometimes like what others publish on Facebook maybe every other day, but they never really publish anything themselves, maybe change their profile picture every once in a while (see Ito et al., 2010 about this kind of "lurking on others"). One person said she never really checks Facebook, only uses the Messenger app on her smartphone. Still, Facebook seemed to be the most popular app for networking and organization of bigger events, such as the school ball, which many basic participators brought up was mostly organized through an event-

related Facebook group, because it is easier to involve everyone at school with just their real names, not needing all of their phone numbers etc.. With smaller parties adolescents revealed preferring WhatsApp and instant messaging, since on Facebook events would most probably get “out of control” and a lot of hoers would show up. Many also said they add about everyone they meet at school or extracurricular activities as friends on Facebook, and might have hundreds of friends. When asked about how many of their Facebook friends and Instagram followers they actually kept in touch with on a daily basis, the approximate amount was less than one tenth of the total amount of friends or followers.

”BP2 : Joo, Instagram o sillee päivittäises selailus ja käytös, ja sit facebook on kans sillee aikalail, mut et emmä niinku ite sillee julkase tai mitää, esimerkiks facebookis, et... Joo emmä niinku yleensä, et mul niinku... Lähinnä vaa sit kattelen niinku mitä kaverit o laittanu ja tälle... Et ei se... Se ei oo sit... Se o vaa semmone et sitä mä vaa niinku selaan.”

WhatsApp appeared to be the most popular app among adolescents for instant messaging (IM), sharing pictures and for simply socio-digital hangout purposes in peer groups. All basic participators said they have many different groups on WhatsApp for different groups of friends, such as their peers from junior high, girls of the class etc.. Quite few people seemed to have groups for their families with their parents in them, and relatively many out of the interviewees (N=17) mention their parents do not really use such technologies, and they are the only people they really contact with regular calls and send traditional SMS with. It is then no wonder that some participants mentioned they sometimes had conflicts with their parents due to their excessive technology use, since they clearly might have very different concepts about what *are* appropriate social practices and what *are not*. WhatsApp groups were also sometimes formed temporarily around an event, such as the birthday of a friend, for arranging practicalities related to it, like the buying of a present, for example. Asking for homework and getting help with them on WhatsApp from friends and siblings by sending pictures, for example, was also quite common among adolescents, and one girl (BP2) mentioned studying collectively for exams in their room through FaceTime.

Creative participators

The previously mentioned socio digital technologies were common not only among the basic participators but also the groups showing more intensive socio digital engagement. These, in turn, had a wider, more domain specified set of applications they used on a daily basis. When looking at the socio-digital networking practices related to the group of creative participators it appears, that with these young people today art seems to be an endless cycle of sharing, admiration and inspiration, being inspired and inspiring others via sharing your own and liking, or somehow appreciating others' creations in social media sites, such as Tumblr, DeviantArt, and for example YouTube, Pinterest or WeHeartIt. Creative participators were indeed characterised by media multiplexity (Haythornthwaite, 2005) and present a high level of expertise in many forms of media (Li et.al., 2015), but generally blogs and so-called "microblogs", such as Tumblr, seemed to be the most central, or at least personally significant social media sites for adolescents in this group. The reason for this is, that they enabled the kind of culture of sharing and appreciating before described, and the possibility of sharing your art anonymously, since publishing personally significant creations under your own name for people to criticize can be a huge issue for beginning artists, if not the professionals as well.

"M: Niin. Koeks sä sit siin Tumlbris, et se niinku anonyymisyys on jotenki siin suures osas, et...?"

CP6: Se on, joo, koska siis jotkuthan ei tietenkään halua omal nimellään mitään jakaa, niin se on tosi hyvä, et siel on se anonyymi, mut tietenki jotkut sit väärinkäyttää sitä anonyymii, ja lähettää vihaa ja kaikkee, mut niinku omalt osaltani sellast ei oo tapahtunu. Ja kyl siin varmaan oppiiki sen, et ihminen on vaan vihanen, et...

M: Niin, et se on vaan helpompi sit niinku itelle, et...?"

CP6: Joo, ja sen vaa poistaa viesti, tai lähde pois netistä, laita se läppäri kiinni, et..."

Also the ease of keeping a blog for your own art, constantly finding new inspiring material to like, reblog or invite one to action and following your friends' and idols' activities in

your dashboard appeared to be the main reasons for preferring microblogs. There are also addictive aspects to these sites, since some participants mentioned having got stuck browsing their Tumblr, Pinterest or WeHeartIt dash for hours and hours, and some even felt the need to keep up with their artistic community's activities in the middle of night when people were contributing on the other side of the world. Microblogs, such as Tumblr, also seemed to make it easy to provide and receive socioemotional support to others because of the possibility to comment others' posts anonymously. This often brings out some hater comments as described in the quote above, but also, and in fact most of the time provide support if you open up about your stress and personal life problems. At least one interviewee mentioned having given and also received anonymous support on the particular networking service, and one confessed turning to WeHeartIt just for some inspiring quote pictures to somehow ease their current socioemotional state or inspire her to get involved in some other, more productive activities that give her better things to think about. Two brought up the hater comments, but also the easiness to ignore these sorts of posts on the internet, so the overall expression appeared to be, that these sites were central to the socioemotional wellbeing of the participants.

“CP6: -- Öö, no siis no vaan niinku mitä tapahtuu, yleensä siin YouTubereitten kanssa, nii sit meil on niinku se tieto heti siel, nii me vaan puhutaan niist asioista, ja kyl siel jotkut puhuu ihan vaan niinku persoonallisist oman elämän asioist, mut ei niinku... niin... tai niinku joskus niinku avautuu sinne, nii. Ja sit jotkut ihan niinku tulee auttamaan, tai jotain tällast.

M: Niinii. Okei. Eli sielt saa sellast niinku tukee tavallaan oman elämän ongelmiin?

CP6: Joo.

M: Joojoo. Ooks sä ite sit, autaks sä yleensä ihmisii, tai niinku...?

CP6: Joo. Joo joskus jos mä nään, et jollaki on huonosti, nii kyl mä sit yleensä meen, mut yleensä anonyymisti, et ei viitti sil omal nimellä mennä puhumaan.

M: Niin, okei... Miten sit onks sul tullu sellasii avautumisii, et sä oot...?

CP6: Joo, kyl joskus niinku stressist tullu siel, niinku et...

M: Koeks sä, et sä saat sit niinku apuu sieltä?

CP6: Joo. Joo.

M: Okei. Minkälaist... onks sul sit ollu niinku koulustressii, vai?

CP6: Joo, se oli just koulu niinku stressii.”

The musicians of the sample appeared to be more individualistic or private in their practices, as seen in the below figures 4 and 5, but at least the pianist (CP8) mentioned sometimes sharing her performances on Facebook and a separate blog for relatives to admire. Also it seemed to be a general practice to, instead of reading the notes or tablatures on a traditional paper book, read them on a computer or tablet, and the pianist mentioned having printed out notes for her teacher to practice with as well. In a similar way that the artists (CP7 & CP6) mentioned sometimes watching video tutorials in e.g. YouTube, practicing songs by listening them on a computer at the same time; this is also a general practice at least among the self-taught musicians of the study (CP9). Also, quite interestingly, some musicians (at least CP2), as well as one basic participator (BP2) mentioned, that listening to music while studying helped them concentrate. One musician (CP2) who said she is more prone to listening than practicing music had a specific “fandom” focused on the music style “K-pop”, Korean pop music, that had initially formed online, on Facebook, through a concert event of one K-pop band in Helsinki. She mentioned also meeting with these people at the actual physical event, and after that keeping in contact and planning meeting one another afterwards. Also one of the artists (CP7) in the study mentioned having formed two of her three relationships via initially online interaction, through her own blog’s fandom.

”CP7: No fandom tarkoittaa niinku tällast jonkun sarjan ympärille keskittynyttä fanipiiriä, et sellasen ryhmän jäsen.

M: Eli netissä?

1437, girl

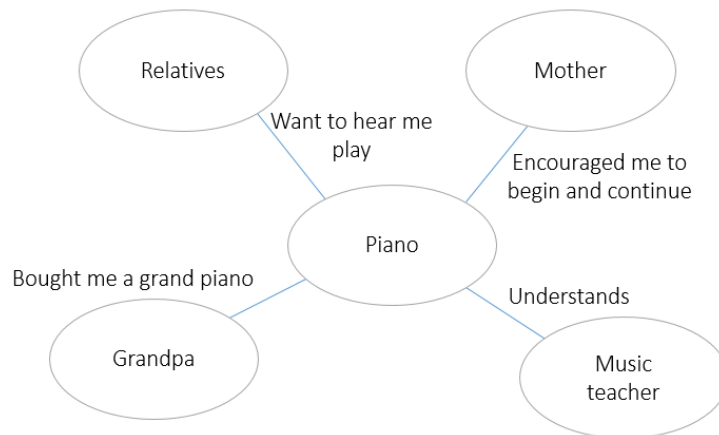


Figure 4. A egocentric network map of the girl with the piano interest (CP8) to demonstrate the individualistic nature of the musical interest with slightly smaller and more personal, family related networks.

1367, boy

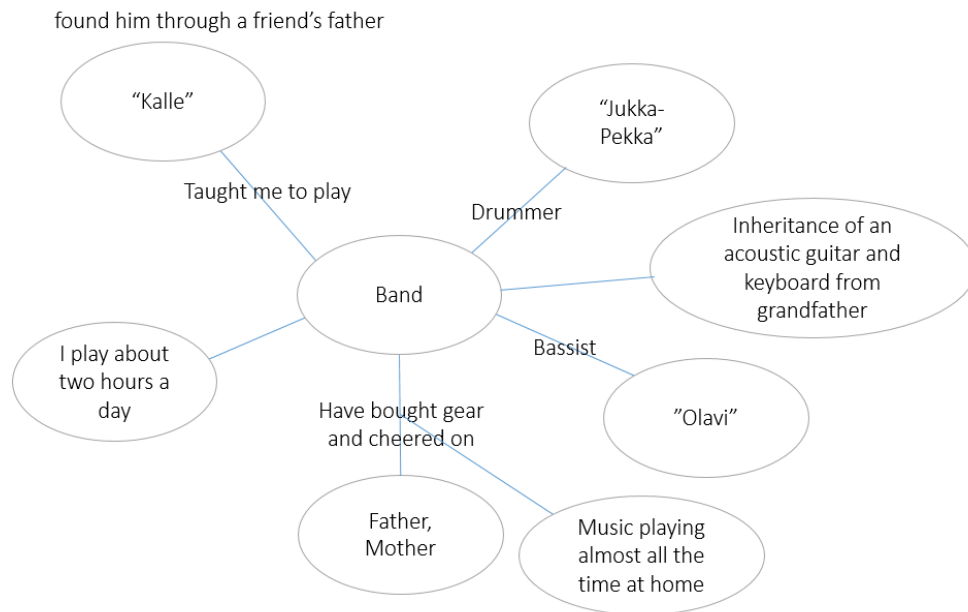


Figure 5. A egocentric network map of the boy with the band interest also demonstrates the individualistic nature of the musical interest with slightly smaller and more personal, family related networks, but slightly further extending than with the piano interest. Also compare this creative co-operative interest to the co-operative gaming interests seen in figures 6 and 7 – The role of the parents does not involve restriction in the band and basketball interests than like in the digital gaming or “eSports” interest.

CP7: Netissä. Silleen, et kyllähän niit voi löytää oikeestakin elämästä. Sillai et ei ne nyt oo keskittyny mihinkään sivulle, ne niinku vaan on. Sillai, et kyllähän ne on niinku sit perustanu omia sivuja, jotka sit keskittyy tarkalleen tähän ja tähän, mut... -- Se on lähinnä vaan tämmönen suurempi metafyysinen konsepti. Olemme kaikki yhtä vaikka emme tunnekaan toisiamme, tai kuulu mihinkään...”

Gaming oriented participators

Against some research (Huvila, Holmberg, Ek, & Widén-Wulff, 2010; Hussain & Griffiths, 2009; Reinecke, 2009; Trepte & Reinecke, 2011; Williams et al., 2006), and also popular beliefs and stereotypes, the gamers of the study appeared to be highly social in relation to their primary interest. In line with some other studies (e.g. Trepte, Reinecke, & Juechems, 2012; Williams et al., 2006; Shen & Williams, 2011; Klimmt & Hartmann, 2008; Williams, Ducheneaut, Xiong, Zhang, Yee & Nickell, 2006), they seemed to have perhaps fewer but also more permanent relationships, extending from gaming to real world or vice versa, than the two other groups.

Two (GOP1 & GOP3) of the three gamers interviewed brought up the importance of cooperation, based on efficient communication, for the success in their particular game of interest; all the participants reported being engaged in some way co-operative multiplayer games. Two of the participants (GOP1 & GOP3) reported spending time in the same, more or less static group playing these games regularly outside school. In addition, all of the participants mentioned playing together with some previously unknown people they have formerly met or currently encounter online (Li et.al., 2015). The main criteria for choosing these friends was that they come, not from different school or neighbourhood (Ito et.al., 2008), but from somewhat the same time zone as themselves, so that the gaming can happen at a practical time of day.

One of the participants (GOP3) mentioned that he is actively engaged in two initially online-formed group chats of about 100 people from different parts of Finland and a few from outside of the country, with whom, in addition to casual gaming, they meet "in real life" about once a month in social gatherings. In a similar way, the creative participators also mentioned having friends they have met only online that they communicate with more or less regularly. Steam, the online "game store", which also appeared to be the

main social media for gamers, was also indicated as the service which they use to keep in touch with their foreign playmates: “--sä aikalail tarviit Steamii, et pystyy pelaamaan nykyään jo, et se on niinku siel on kaikki pelit ja tällaset, chatti tulee siin samana, eli vaa et haluu pitää kavereihin yhteyttä--” (GOP1).

The main tools of communication for the gamers were very different than in the two other interest groups. One said he quit Facebook 4 years ago because he did not agree with the company’s ethics: “GOP3: No siitä, että ne saa... Ne niinku... Ne omistaa ne kaikki tiedot siitä eteenpäin ku sinne laittaa mitä tahansa, ja... Ei, siis ei niil oo sitä oikeutta loppujen lopuks, nii en mä siel haluu sit olla.”. Another (GOP2) also mentioned he only joined Facebook because a friend “paid him to”. Based on this, even though the third one (GOP2) mentioned using Facebook with friends he cannot contact otherwise, it appears that, at least in this sample, the gamers are in general perhaps more aware of the working principles of the different online networking services and the code they are built upon, and are therefore more worried about their privacy.

Perhaps surprisingly, gamers reported using much more internet phone technologies, such as Skype and TeamSpeak, than any other group. Gamers, as a result, appeared to spend the most time in real-time interaction. They were always “on the phone”, so to say: “--ja sitte Skype on tavallaan se niinku... niinku se missä tulee kaikista eniten ylimäärästä, se et se on niinku se, et siel on se niinku aika tiivis kaveriporukka.” (GOP1). GOP3 sadly brought up the difficulty of group calls of a 100 people, and based on the participants’ opinion, the absolute maximum size of a group call is about 7 people, and again the optimum 5. Gaming as a hobby then, it would seem, provided the gamers with a sense of community, a feeling of belonging, just like any other, for example sports hobby. And the hobby, as a consequence, also brings up pro-social skills through objective oriented teamwork and communication practice. Excluding the physical element of football or hockey, in this purpose for gaming as a hobby would appear to be just as good, if not even better, since the communication happens almost constantly in-game, and also the off-topic and news on what’s up is handled on the phone, in and between games.

1358, boy

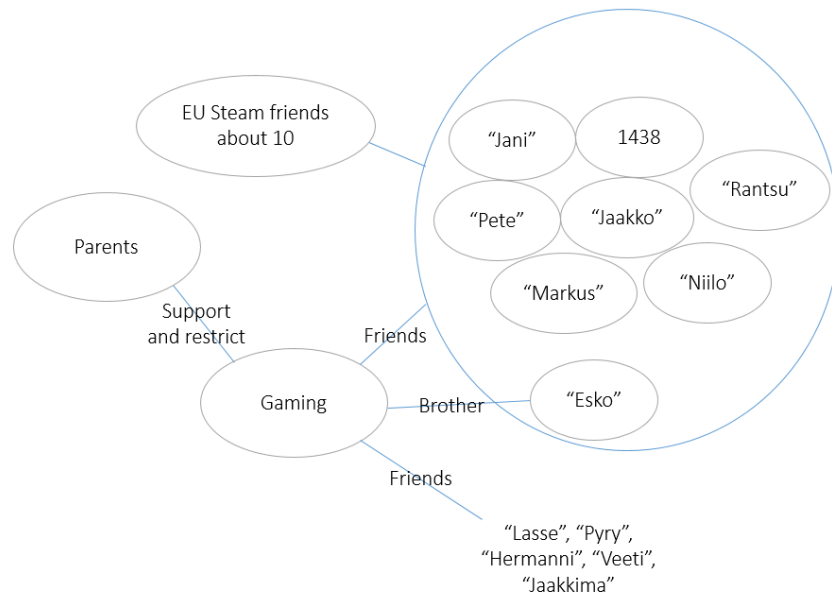


Figure 6. The social network of one gamer of the study (GOP1).

1399, boy

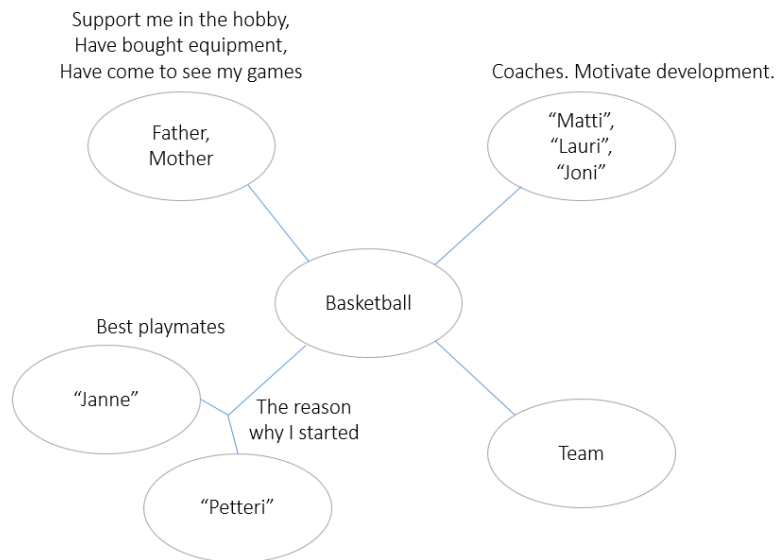


Figure 7. The social network of one of the hangouts (BP4) sports hobby. Notice similarities and differences with the game hobby in Figure 4.

"GOP1: No yks ainaki se, et oppii toimimaan jotenki tiimissä, se on niinku se varmaan tärkein, et niinku että... että tavallaan että... ei suutu siit, et muut tekee virheitä, eikä suutu siit et ite tekee virheitä, sillee et se ois niinkun huutaisit sun kavereille siitä..."

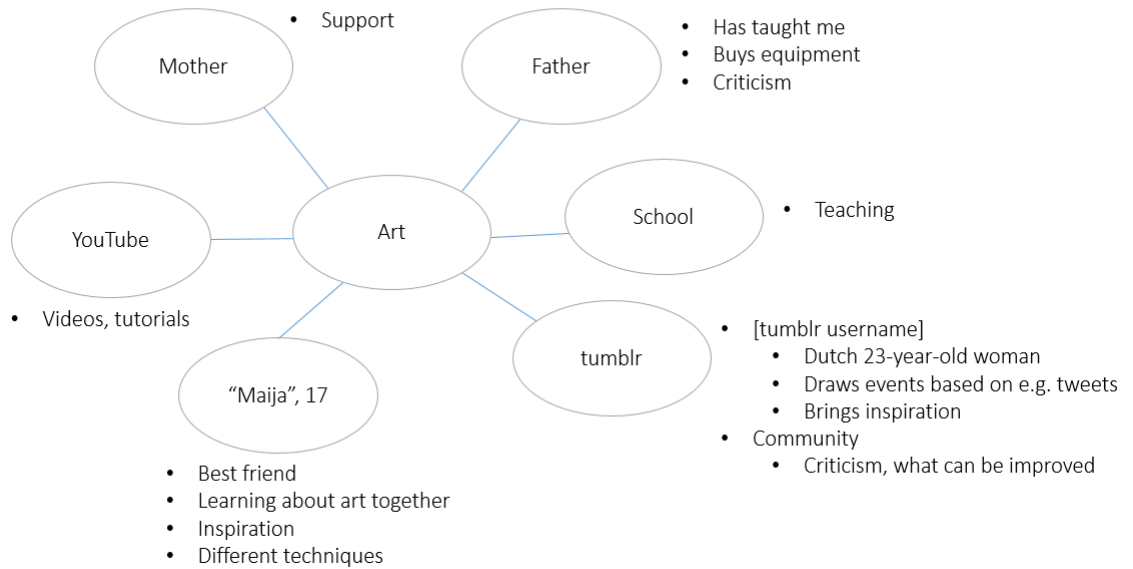
"GOP1: Siinä on iha... siin ihan oikeesti niinku oppii sillee hiljalleen ku on viide... ku on niinku aika tasasesti semmosii viide ihmisen puheluita, siin oppii ihan oikeesti siis niinku puhumaan ihan eri tavalla jo. Sun pitää ihan eri taval oottaa, ku... niinku antaa kaikille vuoro."

*"[When discussing about gaming friends who he also meet with face-to-face]
Milla: Joo... Eli siis niinku peli- ja oikeen elämän kavereita?"*

GOP1: Se on taas et se "oikeen elämän kaveri" kuulostaa vähän hassulta."

So-called LAN events (Jansz & Martens, 2005) are very popular among gamers today, and two participants also mentioned having taken part in smaller tournaments related to their particular game of interest. Considering the fact that there are widely popular world level international tournaments happening in the field of eSports today (e.g. Tassi, 2015; Hiilinen, 2015) it would seem there is no longer a big difference between football or ice hockey and for example Dota 2 or League of Legends. Based on this sample, the only visible differences between the hobbies, apart from the physical aspect, that is seen in above images is the parents' role as "supporters" and "supporters and restrictors". The more widely international nature of the gaming hobby, which undoubtedly, in line with previous studies, affects the players' language skills as well. There were similar teasing ("noob shaming") in the online games as there are in the physical ones, and other social aspects seem to be very similar as in all other types of male-dominated competitive areas. Concerning the social relations and skills of the interviewed gamers only one of them (GOP2) could be considered introverted, maybe inexperienced socially and did not apparently really meet people at all outside school besides games. One of the gamers (GOP3) even had a girlfriend he mentioned spending most of his time with outside school and games. There might then be fewer real life social ties with gamers (Li et.al., 2015; Hussain & Griffiths, 2009; Williams, 2006), but those few ties seem to, indeed, be tighter than the others' (Williams et.al., 2006; Cole & Griffiths, 2007).

1388, girl



1381, girl

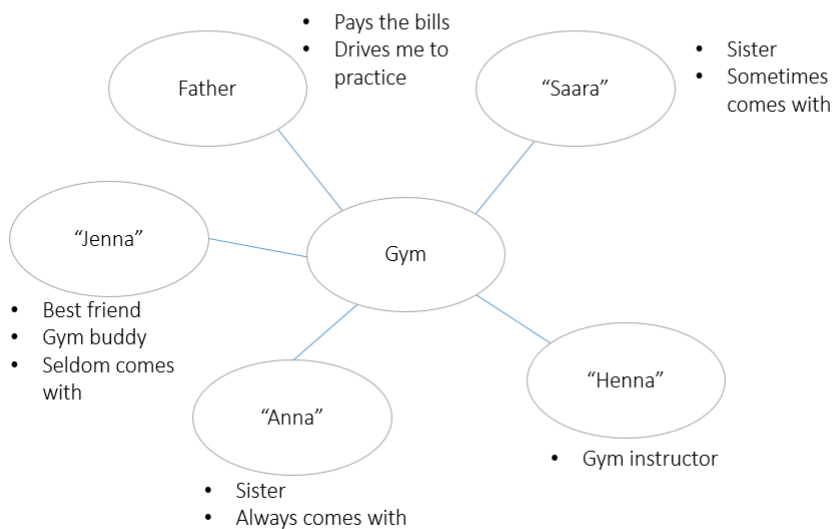


Figure 8. The egocentric network maps of a creative (CP6) and a basic participator (BP1) with art- and gym-hobbies to demonstrate the differences in the international nature of the interest related networks.

In summary

There are, indeed, some major differences in the social networks' structure and breadth between the different SDP profiles based on their reflections. As mentioned in the chapter of participants, the basic participators of this study do seem to be better connected based

on the hangout indegree values (BP Mean = 13,80, CPM = 8,57, GOPM = 6,67). However, it is important to point out here, that the SNQ form only included the people inside the participants' school, so that it does not provide valid measures of the participants' overall national or international networks. Because of that some social media mining, for example, would work much better, even though most of the basic participators reported having mostly friends and followers in the different networking services that they do not really communicate with at all. Based on the interviews, the gamers and also creative participators did in fact seem to have quite many, in some cases very many connections outside school and even some outside the country, groups of people they informed regularly communicating or gaming with online. Looking at the interest relatedness of the networks the maps tell an interesting story about physical gaming and online gaming, since the online gamers can point out much more names than the physical gamers, who both say they have some other friends who have quit the hobby. Also the gamers had many gaming related acquaintances they have acquired through participating in extended socio-digital networks outside the country, as do the creative participators as well. Basic participators did not separately specify whether they have, for example Facebook friends or Instagram followers that are foreign, but it would seem the connections of the creative and gaming oriented participators are sustained through the constant practice and socio-digital participation.

Concerning the personal significance of the participants' social networks many differences can be pointed out between the SDP profiles. As briefly mentioned in the previous chapter, creative participators seemed to give and receive a lot of socioemotional support in their social networks. Also they tended to prefer networking services where they can easily publish and receive criticism on their own works and also like and comment on others' contributions, which is in itself a personally significant, fulfilling practice, which they participate in actively (Sugarbaker, 1998). The gamers also appeared to handle a lot of off-topic issues, perhaps also some socioemotional ones, when hanging on the internet phones during their games. As the gaming as an activity, according to the participants, requires extremely effective and prosocial communication, you would think that these kinds of social behavioural pattern transfer to other kinds of social contexts as well and due to lack of the effect of appearance on the communication you would assume it would also be less superficial in nature. Even though according to the participants there

were, as in any form of boy-dominated competitive area, a lot of teasing and hateful emotions involved as well, these were on the gamers' behalf easily ignored, similarly to how the creative participators dealt with some random hater comments on their blogs. All in all, the gaming as an activity, in a similar way as with the other SDP groups, gave the participants a sense of belonging to a group of peers where they can also practice their own "sport" actively and perhaps even compete.

3.3 HOW THE PARTICIPANTS REFLECTED ON THE INTENSITY OF THEIR SOCIO-DIGITAL PARTICIPATION AND ICT ADDICTION

The interview included a section regarding the participants' experiences of the excessiveness of their ICT and ICT addiction. The questions were adapted from the parsimonious internet addiction components model by Kuss et.al. (2014) as mentioned in the method section. Also the SRQ included a measure for assessing the participants' level of ICT addiction. As follows, I will report results of analysing qualitative and quantitative data regarding the participant's ICT addiction in order to address the third research question of the study.

Perhaps surprisingly, the theme of ICT addiction was one that almost all the interviewees recognized to some extent in their lives. Almost all the participants reported experiencing at least some of the signs of ICT addiction, be it frustration when WiFi is not working, difficulty to concentrate on school assignments because of ICT-related engagement or conflicts with parents trying to restrict a participant's internet use. Nevertheless, many of the interviewees themselves recognized their addiction and reported attempts at controlling it by, for example, turning their WhatsApp-chats on mute during lessons, or concentrating on reading a book or playing the guitar while the WiFi is down. There were some minor differences in the appearance of internet addiction in the different user groups, and they were analyzed as follows.

On experiences of excessive use of ICT in different SDP profiles

When asked directly to what extent the basic participators recognize signs of ICT addiction in themselves, only GOP2 reported that he did not really recognize any. Many even found the “symptoms” to be quite horrible and personally devastating when their access to internet and/or socio-digital technology was somehow prevented for one reason or another (e.g., a dead battery on a smartphone,). All the basic participators mentioned some negative effects of technology and social media on their concentration on schoolwork, but to some (e.g. BP2 and BP3) this effect appeared to be more overwhelming than others (BP5). Nevertheless, many appeared to have their so-called addictive behaviour under control, or at least try to control it during lessons by, for example, turning off notifications, leaving the phone in their closet or by only checking the phone every half an hour. They reported that although this may work at school, it is harder at home without any watchful eyes helping to control, for instance, social media use. They also reported that the engagement with technology and social media seems to take more time away from their studies, and in the middle of doing homework they might, for example, get stuck chatting with friends for hours. One girl (BP2) mentioned that it was actually the breakup of intimate relation that made her cut down the technology use and focus more on the studies when being at school instead of focusing on the instant messaging all the time. She said this has worked and things were now “as they should be”. These kinds of experiences demonstrated how there were many different levels of socio-emotional factors affecting the more or less “addicted” seeming technology use of adolescents.

”BP2: Noo, viime vuon tota mä aloin sit just niinku... öö, tein semmosii, et jätin vaik niinku... Mä tiesin, et mä mee historian tunnil, et kamala 75 minuuttii! Et emmä jaksa siel olla! Nii sit mä niinku jätin mun lokeroon niinku puhelimen niinku, ettei se ees ollu mukana siellä, ja sit semmosest se on niinku lähteny tavallaa, mut sit... Ei se niinku sillä sit kuitenkin lähteny, mut sit niinku... Mut sit nyt tänä vuon ni sit se vaa niinku meni jotenki automaattisesti, ettei niinku...”

The more “geeked out” socio-digital participators appeared to experience a bit more conflicts and restriction on their parents’ behalf related to their ICT use. One gamer mentioned his parents at some point restricting the time he was allowed to spend on

computer to two hours a day but that it no longer worked because, as he described: ”*GOP1: se tavallaan pahentaa sitä, jos on semmonen tavallaan, et rajottaa koneella oloa sen takii, että tekis jotain muuta, mut se tarkoittaa vaan sitä, et siin päiväs on ne pari tuntii, millon sä et tee mitään muuta kun oot koneella missään tapauksessa...*”. Also one creative participator (CP6) said she could not get any sleep at one point when her parents turned off the WiFi for the night, because she felt anxious not getting notifications on what’s happening in her social network of art bloggers. The gamer mentioned above (GOP1) also talks about having regular conflicts with siblings when they want to play at the same time, since they all did not have their own computers. Gamers seem to be a lot less dependent on their (smart)phones than the other groups and revealing the deprivation from socio-digital instruments does not really bother them, but instead a power break would confuse their lives slightly more, except with one participant (GOP2): ”*Sähköt katkee, eikä oo mitään tekemist, nii sit mä vaa soitan kitaraa.*”.

“GOP3: -- ehkä hetke ajaks tulee semmone... Kännykän kans ei oo mitää väliä jos siit loppuu akku, ei se oo jotenki sellatti niin tärkeä. Jos nyt sattuu sähkökatko tulemaa, ni se kest... Ehkä tunnin voi olla sellane olo, ettei tiä mitä tekee, tai vaa sellanen tylsä olo, mut emmä tiä, sit vaa jää lukee jotain kirjaa tai jotain vastaavaa, ei siin sinänsä oo mitää ongelmaa, vaiks mä suurimman osan ajast vietään koneella sit sen tyttöystävän lisäksi, et sen muun osan ajast mä vietan sit suurimmaks osaks koneella.”

Creative participators seemed to find it easier than gamers to get “real company”, meeting friends face-to-face when their connection to the internet was down. They also showed greater variety in experiences of frustration and negative effects of excessive use. Some said they can well do a day or even have done a week without their smartphones, others instead got extremely anxious when their internet access is prevented.

“CP3: No joo, kyl mua turhauttaa, esim. tänä aamul mun kännykänä niinku netti ei toiminu jostain syyst, tai siis niinku netti toimi, mut toi Applen selain ei toiminu, nii sit... tai mä tiesin kyl, et se niinku lähtee toimimaa jos mä niinku sammutan ja laitan puhelimen uudestaan takas pääl, mut niinku siinäki oli... oli ihan niinku jotenki tosi turhauttava hetki, ku emmä päässy kattoo jotai... emmä

muista ees mitä mun piti sieltä kattoo... Varmaan tääki kertoo tosi paljon mun googletuksen tasost, mut siis... -- Se on tosi turhauttavaa... Enemmän se on niinku se fakta, et nyt mä en niinku millään pääse sinne vaiks niinku mitä, mut... niinku tekisin, et ei välttämät se, et sitä niinku tietoo tai mitä yhteydenpito ei niinku saa välittömästi, vaan se, et niinku sitä ei ees pystyis saamaan, vaiks niinku yrittäis."

One creative participator mentioned being teased as an 11-year-old made her escape to the web:

"Siis sillon ku mua kiusattiin, nii sillon oli, siis sillon mä pakenin niinku tosi paljon nettiin, että... Mä olin tosi paljon siellä, ja tota... Sillon mä olin jollain siis nuorten tyttöjen foorumeilla, mä olin niinku ihan kuuluisaaki tasoa, et se oli aika siistii, et toi... se oli ykstoistvuotiaa aika siistii. -- Siis se oli aika pitkään niinkun ongelma, siis se oli... varmaa mä kasiluokkal aloin pääsee siit irti, mut kyl mä seiskaluokallaki niinku mä olin viikonloppusin, nii vaikkei kukaan kaveri ollu enää siel netissä, nii sit mä saatoin silti neljän aikaan olla siellä vielä yksikseni, että..."

Also the most intensely motivated creative participator had experienced a tragic death of a close family member, which perhaps might have had its effects on her intensive technology engagement. Many also mentioned in this context that the app Tumblr was indeed used to get rid of negative thoughts and feelings. *"Joo, kyl se just niinku... just stressii lievittää ku kuuntelee jotain musiikki ja sit tää Tumblr, nii meen sinne just niinku sillee... Et silleen niinku irrottaa just pois siit ikäväst jutust ja niinku tällee näin."* (CP2). One also mentioned similar functions for an application called WeHeartIt: *"Ja siel on kaikkii lainauksia kaikist teksteistä ja muita tällasii, oikeen syvällisii tekstejä niissä kuvissa, et toi jos mul tulee joku inspiraatiofiilis, tai et mä oon tosi motivoitunu jostain, tai mä oon just lukenu jonku hyvän kirjan tai just jos et on niinku ahdistusta tai niinku muuten vaan ollu huono päivä, tai suututtaa, nii sit mä meen sieltä hakee tietyillä tageillä sit kuvia, ja niinku... Se helpottaa niinku aika paljon, et saa purettua sen, esimerkiks jos on jostain vihanen, ni sit sieltä katon pari kuvaa, ja sit on heti sillee, et..."* (CP8). As

mentioned above, she also brought up how she also uses the app for motivation to sort of “get off the bench” in a similar way as with some basic participators.

Both gamers and creative participators, just like basic participators, found some situational difficulties to concentrate at school because of excessive technology engagement, but also reported attempts to, therefore, control it. At home where the PC is available the gamers find it difficult to concentrate on homework, though. One gamer analyses his gaming interest’s effect on his grades as follows:

”GOP1: Mä en oikeesti tiedä, koska must tuntuu, et se niinku... tai millon se niinku harrastuksena itessään kehitty oli niinku ysiluokalla, ja ysiluokan aikana mä nostin numeroita, ku taas lukios mul on taas pudonnu numerot koko ajan sillee hiljallee, joka on vähän semmone...”

Insomnia is a common negative effect that I will deal with in the discussion and that especially the creative participators recognized in themselves and described in more detail:

”CPI: No mä nukun liian vähän, et se on nyt se isoin ongelma, mut se on kyl...”

M: Okei... Miten sä koet et se sit vaikuttaa suhun?

CP1: Ööm... No et mä oon aina väsyny, mut just se et se kännykkä niinku... Sit ku mun pitää mennä nukkumaan sit mä oon kuitenkin kännykäl niinku, ja... Joo...”

”CP6: Öö, no ei unettomuut, mut kyl mä oon nykyään oppinu sen, et ei siin tapahdu mitään sen viiden tunnin aikana, tai kuuden tunnin aikana, tai se mitä nukkuu, et mul oli ennen kyl tosi paha addiktio siihen, et mun on pakko tietää mitä siel tapahtuu, mut nykyään on niinku oppinu sen, et ei se nyt niin tärkeä jos sen missaa nyt.

Milla: Aa, okei, nii... Siis heräiliks sä sit siihen jos siel tuli jotain niinku ilmotust, tai tälleen?

CP6: Mm, joskus jos oli jotain tärkeitä, et jos halus tietää heti mitä tapahtuu, nii mul on kännykkä tärinäl, et... värinä pääl nii et herää siihen, mut joo, se oli ennen, et nykyään mä pystyn ihan nukkumaan sen...”

Basic participators seemed to be a little bit more dependent on technology and experience more frustration from web deprivation than the other groups based on what they expressed in the interview. However, when looking at the SRQ means in the ICT addiction sum variable, their mean value is actually the lowest ($M = 2,05$), and the two gamers who responded to this section of the SRQ in fact experienced the most ICT addiction symptoms ($M = 4,42$) (Grüsser, Thalemann & Griffiths, 2007). The creatives ($M = 2,98$) were more on the addicted side than basic participators, but not as extremely as the gamers. When looking at all the participants, the most agreed upon statements in the section were “I have powerful urge to use ICT all the time” and “I use ICT to late night when it’s possible. Also very much agreed upon was the statement about the excessive use’s negative effect on schoolwork, which was clearly seen in the interviews as well. However, the question least agreed upon among all the participants was “ICT is causing problems in my relationships”. When looking at the mean values to this particular question group by group, the two gamers are actually the ones who consider their ICT use causes least problems in their relationships. Social relationships being such a major factor in the well-being and proper development for the youth, based on these data it would be problematic to say that the almost addicted seeming ICT use is somehow harmful for the youth, and these kinds of ideas should be put under criticism. However, it is interesting to take into account the formulation of the question on the SRQ, where the concept of “addiction” was not mentioned and the section title only says “Tell about your IT use”. Considering addicts did not usually recognize their addiction as addiction, this is an interesting discovery concerning the reliability of the results from the interview on the other hand and the SRQ on the other.

Participants criticisms regarding the concept of ICT addiction

Some participators also present hard criticism against the idea of technology engagement as an “addiction”. One girl considers her internet deprivation anxiousness as more of her just being highly-strung in general. Another one thinks talking about ICT addiction today is just “completely absurd” because in this case almost everyone would be classified as addicts. As a researcher I personally recognize this problem, and the actual reason for addressing the question was to see if these kinds of criticisms will be aroused by today’s adolescents as well.

”BP3: Sillee esimerkiks jos ei niinku toimi yhteys, niinku puhelimes ollenkaa, ja sit sillee netin kautta just kaikki sovellukset tarvii niinku nettii, et koittaa laittaa viestii jolleki, tai vastata viestii, ja sit ei pystykää vastaamaa siihe, ni sit o vaa, mut varmaa siit ku jos o vähä heikkohermonen, ni sit varmaan sen takii siit, mut... ei niinku...”

”BP3: -- Et koska emmä niinku... Mä en koe sitä tavallaan puhelinriippuvuut, mä en koe sitä mitenkään ongelmana, koska se on kuitenkin... Nykyajan yhteiskunnas se on enemminki sääntö ku poikkeus, et sä oot riippuvainen sun puhelimest, koska se ois ideana täysin absurdi et joku ei olis niinku mitenkään niinku tavallaan vaikuttunu siit, et jos puhelin menee rikki, jos ei pysty kommunikoimaan netin tai sosiaalisen median välityksel. Et se on ideana täysin vanhentunu mun mielest.”

4 DISCUSSION

4.1 RELIABILITY AND VALIDITY OF ANALYSIS

This study was set to shed more light on Finnish adolescents' personal reflections on their socio-digital participation, interests, networks and experiences of the excessiveness of their use of ICT by the inclusion of more qualitative methodology, as has been called for in the previous studies (e.g. Bennett, 2010). There are several factors affecting the reliability and validity of a mixed methods study, such as the study at hand, so far as these are terms that can be used concerning qualitative research (Tuomi & Sarajärvi, 2003). The "sample" of the participants is, of course, relatively small, as is the case when using any kind of qualitative methods, due to the large resources they require. This is because of the kind of in-depth information the study is expected to produce, and as Kvale (2007) says, it is the kind of research more intended to shed light on the question "what of a kind", and not so much on "how much of a kind". Due to this, although the sample of interviewees was relatively large ($N = 17$), the results cannot be reliably generalized to the entire population of adolescents, especially concerning the participatory profiles, since the amount of e.g. gaming oriented participants interviewed in this study was very small ($n=3$).

Albeit the amount of interviewees, or the "sample" of this study was rather small, the "statistical reliability" was in part enhanced by mixing statistical methods in the sampling process of the participants from the self-report questionnaire data, which covers multiple upper secondary schools in Southern Finland, albeit this particular school was selected for the investigation mostly due to time and distance practicalities. The Mind the Gap upper secondary school self-report and social network questionnaires included sections based on scientifically valid measures of, for example, network indegree values and questions related to ICT addiction, which will hopefully increase the reliability of the results of the study at hand. Also the interview itself included the interviewees' own visualizations, and was not only based on their verbal articulation at the particular moment. (Elmes, Kantowitz, Roediger, 2012.)

Interview as a research method is probably the most subjective when methodology is considered. The question – response setting, as mentioned above in the method chapter, affects the process of collecting information, and there are several factors affecting the information provided and derived from the interviewee. The authority, gender, race and class of and even the vocabulary used by the researcher can affect the way in which the interviewee responds to their questions. When interviewing the youth, a young female interviewer, such as in this case, can acquire very different kind of information than an older male, for example. In this situation, interviewing the students individually face-to-face during general study hours, I, as the interviewer, could represent an authority commensurate to that of a teacher for the young adolescents. This, and also the sex of the interviewer was a confounding factor in the gathering of the participants' reflections in this study, since at least one boy participant didn't seem to find it comfortable to openly reveal their deeper thoughts and feelings in the situation, although the same reticence was noticeable on their SRQ as well. On the other hand, some of the students' revelations on deeply personal and emotional issues gave hint on their perception of the interviewer as more in the role of a psychologist or therapist. This was of course useful in aiming to describe the deeper thoughts and feelings of the research subjects, but their privacy has, of course, also been taken care of to the best possible extent. (Denzin and Lincoln, 2005; Pennington, Gillen and Hill, 1999.)

Concerning the statistical aspects of the study some methodological limitations can be highlighted as well. In the selection process for the interview on the basis of the SRQ and SNQ answers the inclusion of the theme of ICT addiction was rather problematic, since the participants were selected based on the intensity of their online interests, the focus being on the most intensively ICT engaged adolescents. Also the different formulation of the excessive engagement questions on the questionnaire and the interview was an interesting confounding factor in the study. On the questionnaire form, the ICT addiction section was titled "Tell about your IT use", not mentioning the concept of ICT addiction at all, even though it was intended to measure the addicted aspects of ICT use. On the other hand, in the interview the start of the entire theme in all cases included mention of the concept "ICT addiction", which as mentioned above, clearly affected the participants' answers to the questions, and the least "addicted" ones based on the questionnaire were the ones who brought up the addictive nature of their ICT use the most in the interview.

Concerning the social network methodology, educational science is naturally interested in in-school social and friendship networks; the students who have friends in school also generally enjoy being in and studying at school. However, as was noticed in the interviews, the socio-digital networking patterns of today's adolescents are not as school bound as in the past, and the networking and befriending happens in contexts that are not only more nationwide, but also international. A young person sitting on their computer in Finland can have conversations, play games or contribute in other online activities and communities with people from as far as Asia or United States. Since these socio-digital relationships can play an important role in the adolescent's personal experience and development, this is why traditional in-school SNQs don't catch the complexity of an adolescent's social relations in its entirety, and I personally would prefer looking at other fields to harvest this information by the method of, for example, social media mining.

4.2 SYNTHESIS OF RESULTS

It can certainly be said, that the modern ICTs play an important role in the lives of today's adolescents and are strong mediators of their communication with peers and a link to the wide world around them. Differences in the networking patterns and characteristic, socio-digital interests or activities can also be found between adolescents. This study has used as a guiding lens the studies of both Li et.al. (2016) and Ito et.al. (2008), and the assumption that some adolescents socio-digital participation involves more intense and demanding engagement can certainly be verified based on this qualitative study. The basic participatory, non-digital interest group appeared to prefer more socio-digital activities similar to hanging out with friends face-to-face, whereas the other two interest groups with more creative and/or gaming oriented socio-digital interests show more signs of the sort of "messaging around" and even "geeking out" that Ito et.al. described in their study. The following Tables (2, 3 and 4) is intended to give a synthesis of the results of this research.

Table 6. Synthesis of the results concerning the group of basic participators categorized by interview themes and including exemplifications from the transcriptions.

| CATEGORIES | IN-GROUP GENERALIZATIONS | EXAMPLES FROM INTERVIEWS AND QUESTIONNAIRES |
|---|---|---|
| BASIC PARTICIPATORS (NON-DIGITAL PRIMARY INTEREST) | <ul style="list-style-type: none"> • Staying connected to the world around • Not getting left outside • Organizing events (Applications brought up in this study: WhatsApp, Kik, SnapChat, Telegram, Instagram...) | <p><i>"BP5: Mut WhatsApp nyt o iha mukava sillee ku voi olla koko aja yhteyksis kavereihi."</i></p> <p><i>"BP3: --et "vanhojen keksimyyni" esim., nii me hoidettiin se niinku basically kokonaan sitä kautta se, öö, tiedottaminen, et kyl siit tuli kuulutus, yks, mut... niinku..."</i></p> |
| | Hanging out with peers online | <p><i>"BP4: --pal nopeemmin saa niinku kiinni kaikki ihmiset, paljon niinku helpommi, ja ei niinku välttämät tarvi just... niinku just soittaa, tai jotai, et..."</i></p> |
| | Sports (other interests mentioned: scouting, reading) | <p><i>"BP5: Nii, ku ei se ollu kummiskaa sillee mikää mun tulevaisuuden ammatti se jalkapallo, et... Haluu vaan pitää hauskaa ja pitää vähä ulkonäöst huolta."</i></p> |
| | <ul style="list-style-type: none"> • Beginning easy to distinguish (e.g. when joining a team) • Continuation because of appearance and mental/mood reasons | <p><i>"BP3: No sillo pienenä mä enemmä harrastin kaikke maailma tennist ja kaikkee, jalkapalloo... mitä nyt kokeili vähä kaikkee... Kaverit pelas koripalloo sii, ja sit mä meni nyt kokeilee ja sit se oli iha siistii, ja siel mä sit nyt oo vieläki."</i></p> |
| | <ul style="list-style-type: none"> • Scarce • Few close friends • Not much communication during activity • Support from parents | <p><i>"BP4: Noo tota... Tietty muidenki kaa sillee jotain nyt pientä keskusteluu, mut ei sillee jalkapallon ulkopuolel mitää, tai muutenkaa harkois nyt hirveesti kerrota kuulumisii... Tietty kaikkien kaa ny silleen tulee toimeen, ja pitää tulla toimee ja pystyy puhumaa jostai aina."</i></p> |
| | <ul style="list-style-type: none"> • Lowest • Minor picture editing to enhance selfies | <p>ICT expertise indegree = ,40</p> <p><i>"BP2: Öö, no just lähinnä niit semmosii toimistojuttui, ja sit ööm... Ei mul oo niinku... Jos mä vaik muokkaan kuvii, ni mä lähinnä muokkaan niit niinku puhelimen kaa, sillee, et..."</i></p> |
| | <ul style="list-style-type: none"> • Strongest based on interviews, weakest based on SRQ • Personal control • Criticisms towards the concept, since everyone would be classified addicts | <p>SRQ mean = 2,05</p> <p><i>"BP2: Noo, viime vuon tota mä aloin sit just niinku... öö, tein semmosii, et jätin vaik niinku... Mä tiesin, et mä mee historian tunnil, et kamala 75 minuuttii! Et emmä jaksa siel olla! Nii sit mä niinku jätin mun lokeroon niinku puhelimen niinku, ettei se ees ollu mukana siellä, ja sit semmosest se on niinku lähteny tavallaa--"</i></p> |

Table 7. Synthesis of the results concerning the group of creative participators categorized by interview themes and including exemplifications from the transcriptions.

| CATEGORIES | IN-GROUP GENERALIZATIONS | EXAMPLES FROM INTERVIEWS AND QUESTIONNAIRES |
|--|---|---|
| Hanging out online | <ul style="list-style-type: none"> • Staying connected to the world around • Sharing own and appreciating others art, getting motivation • Blogging and microblogging • Anonymous socioemotional support (Applications brought up in this study: Tumblr, DeviantArt, YouTube, Ask.fm, WeHeartIt, Pinterest, WhatsApp, Instagram...) | <p><i>"CP6: Öö, no se saa aika paljon motivaatioo, koska siin yhteisössä on paljon niinku taiteilijoita, jotka piirtää, ja öö, jakaa omii piirroksii, vaiks ne on nyt just niit, öm, ku siin yhteisös ja siin niinku YouTubereist tehty, mut ne on niin niinku hienoja, ne tuo paljon motivaatioo siihen, et ehkä pystyis joskus noin hyvin, niin kyl se tuo... niinku auttaa yleensä siin, et..."</i></p> |
| Characteristic interests | <p>Art, music, scouting, social issues, dancing, ice skating, gaming...</p> | <p><i>"CP8: Öö, tällä hetkellä... No mä aloitin tankotanssin tänä syksynä, ja mä hurahdin siihen ihan täydellisesti ja tota... sit mä aloin sen lisäksi niinku käymään salilla, niinku et mä alan tukee sitä harrastusta sit siinä-- Sit tota... mä harrastan pianon soittoa ja... en varmaan mitään muuta..."</i></p> |
| Characteristic socio-digital primary interest | <p>Art, music (social issues, scouting)</p> | <p><i>"CP7: --Voi kai se osittain olla sitä, et kun ihmisestä ei paljoo jää jäljelle tän elämän aikana... Taiteella jää. Jotain kivaa. Plus sit mä voin näyttää ihmisille mitä mun pään sisällä tapahtuu--"</i></p> |
| Development of interest | <ul style="list-style-type: none"> • Easier to distinguish beginning in formal contexts, • Not so easy in self-directed interests | <p><i>"CP3: --et mä oon käyny kuvataidekouluu neljä-vuotiaast ehk... neljä tai viis, emmä oo iha varma."</i> <i>"CP7: Aloitin piirtämisen sillon joskus."</i></p> |
| Egocentric networks in interest | <ul style="list-style-type: none"> • Friends and acquaintances through blogging (online and offline) • Online art communities and "fandoms" • International friends | <p><i>"CP7: No fandom tarkoittaa niinku tällast jonkun sarjan ympärille keskittynyttä fanipiiriä, et sellasen ryhmän jäsen. -- Se on lähinnä vaan tämmönen suurempi metafysinen konsepti. "Olemme kaikki yhtä vaikka emme tunnekaan toisiamme, tai kuulu mihinkään..."</i></p> |
| ICT skills | <ul style="list-style-type: none"> • High especially in artistic applications • Some coding (html) • Picture editing and digital drawing | <p>ICT expertise indegree = 1,71 <i>"CP3: Öö, no joskus... joskus sii valokuvausinnostuksen aikoihin, joskus yläasteen alus, nii mul oli blogi jonku aikaa, nii kyl mä sitä varten just niinku opettelín sitä just niinku nettisivun sitä niinku pohjan luontii ja niit niinku ulkosii elementtei mitä siihen pysty laittaa, nii html-koodi niinku onnistuu kyl jotenkuten."</i></p> |
| Socio-digital addiction | <ul style="list-style-type: none"> • 2nd strongest based on interviews and SRQ • Insomnia | <p>SRQ mean = 2,98 <i>"CP1: Ööm... No et mä oon aina väsyny, mut just se et se kännykkä niinku... Sit ku mun pitää mennä nukkumaan sit mä oon kuitenkin kännykäl niinku, ja... Joo..."</i> <i>"CP6: Mm, joskus jos oli jotain tärkeit, et jos halus tietää heti mitä tapahtuu, nii mul on kännykkä tärinäl, et... värinä pääl nii et herää siihen, mut joo, se oli ennen, et nykyään mä pystyn ihan nukkumaan sen..."</i></p> |

Table 8. Synthesis of the results concerning the group of gaming oriented participators categorized by interview themes and including exemplifications from the transcriptions.

| CATEGORIES | IN-GROUP GENERALIZATIONS | EXAMPLES FROM INTERVIEWS AND QUESTIONNAIRES |
|--|--|---|
| Hanging out online | <ul style="list-style-type: none"> Talking “on the phone” with co-players while gaming Staying connected to friends (Applications brought up in this study: Skype, Steam, TeamSpeak, WhatsApp...) | <p>”GOP1: Mm, facebookis mä käytän just pääasias chattii, koska facebookki on siit sillee hyvä, että siellä on tavallaan kaikki, nii se on justii semmone, et jos niinku läheisille kavereille mä pistän Skypest viestiä, ja niille joitten kaa mä pelaan mä pistän Steamissä, mut sit jos on muuta, mä pistän facebookis aika lailla.”</p> <p>”GOP1: No siis mitä nyt, netissä nyt ain on sellasii välillä että niinku mist kiinnostuu, näitä niinku... Yhes vaihees mä katoin vaik kuin paljo animee, mut sit oli vähän semmone, ettei oikee jaksa enää... Ja sit on niinku, et oikees elämäs on semmossii mitä mä teen sillei, mä käyn pelaa sulkkist kerran viikossa ainaki – mä teen sitä mielelläni, mut toisaalt se ei oo sillee samal tavalla, että se on niinku sen takii että saa liikuntaa.”</p> |
| Characteristic interests | Gaming, anime, computers, reading (internet and offline), badminton, boffing, playing guitar, vinyl collecting | <p>”GOP1: No se on se pääasia mitä mä teen tos vapaa-ajalla, ja se on se mitä mä teen mieluitenki vapaa-ajalla.”</p> <p>”GOP2: Mä soitan kitaraa.</p> <p>Milla: Aijaa, okei. Öö, kauan sä oot soittanu? GOP2: Mä alotin joskus ehkä vitos tai kutosluokal.”</p> |
| Characteristic socio-digital primary interest | Gaming | <p>”GOP1: --se on yks jotain ihan ensimmäisii muistoi, mitä mä muistan, et mä pelasin mun iskän kans jotai ihan pikkusena tämmösellä... mä en ees tiä mikä konsoli se oli, mut mä muistan vaan, et mä pelasin joskus ihan pienenä.”</p> |
| Development of interest | Not so easy to distinguish beginning, only the purchase of a computer | <p>”GOP1: --se on yks jotain ihan ensimmäisii muistoi, mitä mä muistan, et mä pelasin mun iskän kans jotai ihan pikkusena tämmösellä... mä en ees tiä mikä konsoli se oli, mut mä muistan vaan, et mä pelasin joskus ihan pienenä.”</p> |
| Egocentric networks in interest | <ul style="list-style-type: none"> More and less static teams Close friends (prosocial communication for good teamwork) International friends Support and restriction from parents | <p>”GOP1: No yks ainaki se, et oppii toimimaan jotenki tiimissä, se on niinku se varmaan tärkein, et niinku että... että tavallaan että... ei suutu siit, et muut tekee virheitä, eikä suutu siit et ite tekee virheitä, sillee et se ois niinkun huutaisit sun kavereille siitä...”</p> |
| ICT skills | Highest in especially UI | <p>ICT expertise indegree = 2,33</p> <p>”GOP3: It has become an important part of me, when I understood the concept “Free as in Freedom””</p> |
| Socio-digital addiction | Lowest based on the interviews, highest based on the SRQ | <p>SRQ mean = 4,42</p> <p>”GOP3: -- ehkä hetke ajaks tulee semmone... Kännykän kans ei oo mitää välii jos siit loppuu akku, ei se oo jotenki sellatti niin tärke. Jos nyt sattuu sähkökatko tulemaa, ni se kest... Ehkä tunnin voi olla sellane olo, ettei tiä mitä tekee, tai vaa sellanen tylsä olo, mut emmä tiä, sit vaa jää lukee jotain kirjaa tai jotain vastaavaa, ei siin sinänsä oo mitää ongelmaa, vaiks mä suurimman osan ajast vietänki koneella sit sen tyttöystävän lisäks, et sen muun osan ajast mä vietän sit suurimmaks osaks koneella.””</p> |

Regarding the research questions, clear differences could be seen in the characteristic interests of the basic, creative and gaming oriented participators, and also the socio-digital networking patterns they involved. The basic participators with mostly non-digital primary interests were mostly using ICT to get in touch with their friends more quickly when they're not meeting face-to-face. Their selected primary interests, which in all cases were some form of sports, were mostly related to taking care of appearance and health and also to drive off bad thoughts and feelings. The creative participators, whose primary interests involved forms of art such as visual arts, music and dancing, used socio-digital technologies (e.g. Tumblr and DeviantArt) actively in sharing their creative compositions such as art and music, and also to get inspiration from others' work and commend on them. Acquisition of online socioemotional support was also what some creative participators brought up. Gaming oriented participators' preferred socio-digital technologies are mostly the ones that help them achieve as efficient communication in-game as possible, such as internet phone technologies, and their more or less static "teams" or "clans" are important parts of their lives in general as well. They also used mostly gaming related social media sites (usually Steam) and seem to be more aware of the principles commercial social media (such as Facebook and Instagram) are based upon.

Notable differences concerning the density of the primary interest related networks could also be discovered, and for example the traditional team sport related networks seemed to be much looser and involve much less social communication with teammates than in the modern digital- or "e-sports", based on the analysis of this study's participants. In e-sports the teammates of participants seem to be much closer to them in general and an important peer group, almost equivalent to a clan. Also both more "geeked out" interest groups seemed to have a lot of foreign connections as well that are important parts of their everyday primary interest related socio-digital network, whereas the "hangouts" didn't really mention any. It appeared that the socio-digital technologies make it possible for people from different cultures to join together in pro-social online activities in a whole new manner.

Concerning the participant's reflections on the excessiveness of their ICT use, there were, as mentioned above, interestingly different results from the different self-report methods

included in the study. Based on the analysis, however, it would seem students have indeed experiences of excessive ICT use even to the extent that they would personally call it “addiction”, but they also mentioned in the interviews multiple different means of keeping it under control. Some participants brought up, and also the different level experiences of addiction gave implications of criticisms towards the entire concept of their and their friends’ ICT engagement as “addiction”, since the term implies some kind of deviation from norm, and it appeared just completely absurd to them to suddenly call all their friends addicts because of their entirely normal use of ICT. Also the mood symptoms that could be seen as symptoms of addiction were by some seen as just normal part of the continuum of a particular person’s personality, and not some kind of diagnosable illness. On the other hand, with the entire world constantly available to them 24/7 in their new media ecologies, the technology engagement did cause some modification in the sleeping patterns of the adolescents according to the participants’ reflections. These experiences, and the recent studies they relate to will be discussed in the next chapter as implications from the material that do not directly relate to the initial research aims of this study.

Some major criticisms can in fact be raised concerning the concept of internet addiction in general (Shaffer, Hall & Bilt, 2000; Shen & Williams, 2010). These come up when observing the totality of the everyday behaviour and interest-related interactions of the youth, the most part of which can be considered socio-digital, meaning it is mediated one way or another by the internet, through which the microsystem of the individual is entwined to the macrosystem of the outside world (Bronfenbrenner, 1979). As the girl put it (1345), it is even absurd to think any normal adolescent today would not experience distress or frustration when their smartphone is broken or this interaction with the outside world through the internet is some way inhibited. And when a behaviour, this way, becomes the norm, it will no longer be considered an addiction, even though to the outside observer it would have the characteristics of it, since the behaviour is so radically different to what was in the past “normal sociality”. In an opposite way, smoking was not considered an addiction up until its connection lung cancer was discovered. And today, the social and mental health benefits of ICT mediated interaction seem to be such, that a similar shift in perspective is required.

On social exclusion and the gap between the adolescents' and the school's socio-digital practices

There has been talk about the young students skipping lessons and arriving late for school related to their excessive internet use in some studies and media recently (the Finnish Ministry of Education and Culture, 2015; Salmela-Aro, Muotka, Hakkarainen, Alho & Lonka, in press). This is indeed visible in this particular study, since many of the participants complained about getting stuck on their smartphones for long periods of time before falling asleep, some even mention having to wake up in the middle of the night if they hear a notification sound of a specific app, since they “have to keep up with what’s happening in their social network all the time” (CP6). Some brain researchers find this concerning, since the bright lights from smartphones and tablet devices decrease the production of sleep hormone melatonin, which is important to maintain a normal wake-sleep –cycle, which in turn affects the concentration and attention-span of the individual during regular school hours (Lanaj, Johnson & Barnes, 2014). On the other hand, the disinterest and cynicism towards school, which this skipping lessons, arriving late and excessive free time internet use implies, could also be result of the outdated knowledge practices of school itself; Students seem to have a completely normal and natural interest to engage with their touchscreens, some of which could be satisfied by more constructive incorporation on these devices into the teaching in school. In fact, recent studies indicate that students today themselves experience this dissatisfaction and discontent with the outdated ICT demands of school and the extent to which these respond to their own abilities and needs as ICT users. Only 10 years ago this was not visible in the same kinds of studies (YLE, 2015; Salmela-Aro et.al., in press).

“GOP3: Mmmh, no joku ei ehkä välttämät pidä tällast elämää normaalina elämänä, mut mulle sil ei oo mitään väliä mitä joku muu ajattelee siitä... Emmä ite tiä, ei siin mun mielest oo mitää ongelmaa kuitenkaa.”

There has been a lot of talk in the media and among researchers also about the connection of internet use and solitude among adolescents in Finland and this also somewhat relates to the cynicism of the 12-year-olds towards school (the Finnish Ministry of Education and Culture, 2015; YLE, 2015; Salmela-Aro et.al, in press). Based on the analysis of this particular research material it appears to me, that it is more likely that solitude is rather

the cause than the consequence of excessive internet use. As one interviewee puts it considering her ICT addiction: “*Et eipä siinä mitään sosiaalista syrjäytymistäkään ku mä oon jo valmiiks sellanen.*” (CP7). There can also be a vicious circle involved, because many interviewees brought up the evident ease of participation online. They seemed to consider participation online to be free of some of the pressure that is involved in face-to-face participation, which makes it much easier for even the shyest of individuals (Desjarlais & Willoughby, 2010). Also anonymous participation was considered easier by some of the participants, because hiding behind a nickname obviously allows you to participate free from discrimination based on external factors, such as looks, sex, race or cultural cues related to religion, for example. This is visible in particular in the heavy Tumblr-users in the creative participators’ group. Tumblr as a microblogging service made it easy for people to comment other people’s blogs anonymously, which usually manifested in not only hater-comments by so-called “trolls” but also as anonymous socio-emotional support between young girls. Criticizing and commenting of other people’s art anonymously, as seen in the above, was also an important fact related to the Tumblr-use of the media creators.

Ito et.al. (2008) and also other researchers (Hakkarainen et.al., 2000) have brought up the worry about the significant gender differences related to the intensity and skills of ICT engagement, and the extent to which these are considered appropriate to girls and boys compared. The differences were indeed visible in this study as well, not only in the fact that all the gamers were boys, but also in how the only girl (1406) who mentioned gaming as a pastime and who was clearly “geeking out” in her creative digital media practices was the most poorly networked one in the entire study, a school social recluse, as she herself recognized in the interview. It appears that ICT is still, after almost ten years after Ito et.al. (2008) study, considered somewhat a “masculine domain”. The use of the word “technology” and the idea of computers as highly “mechanical” devices is perhaps associated strongly with the need for physical force and engineering skills that the Neolithic, agricultural machinery at some point required, in which case it is a natural consequence that these tasks are distributed to biologically more powerful males. But the funny thing is, there does not seem to be need for any additional physical strength when it comes to the modern computer. The association of technology and computers as “masculine”, which sadly prevents the females from acquiring skills and information

related to them appears to be only a cultural historical phenomenon. In worst case it could make females unable to keep up with the fast developments related to information society and could even cut them out of it completely, even though they'd have all the physical capabilities for it: the modern human brain. (Kivinen, Kaakarainen & Anttila, 2014.)

Examination of the self-reported knowledge building practices of the interviewees indicated that their digital preferences varied to some extent. Most seemed to consider the incorporation of services such as moodles, wikis and so on, as highly useful and practical, whereas some others reported that they still strongly prefer a traditional book over an electronic one. The help with schoolwork among schoolmates and siblings appeared to utilize the socio-digital channels very efficiently. Participants mentioned having asked homework from schoolmates through for example different Facebook or instant messaging groups and the help is also often requested and provided in these groups and between siblings for example through sending a photo of the particular task, in addition to the traditional face-to-face support. One girl (BP2) also mentioned having studied for exams collectively with few of her friends through a video call. There's no doubt that the socio-digital channels and services also provide a lot of information about society and other subjects that are useful in school and vice versa, and also improve literacy important for societal participation in this current era steered by interconnected new, multimedia channels, not only the traditional ones. In order to facilitate meaningful engagement of digital adolescents in learning, it would be very important to cultivate pedagogic practices embodying creative use of various socio-digital technologies.

The police shoot an innocent man in Ferguson, Missouri. On the other side of the world, near the Arctic Circle, in Southern Finland, a high school girl (CP1) experiences it as her duty to defend the innocent dead man by actively sharing writings and new media content that criticize the state's poor human rights situation in her social network, the conception of which is formulated on the basis of the internet. Until a few decades ago, this would have been completely incomprehensible to the young people, but there were other forms of manifestation of youthful idealism in the past, as well. Nevertheless, based on this study it is clear, that the excitement to engage in socially conscious participation has reached a whole new level in the modern world, when the injustices occurring on the other side of the Atlantic trigger these kinds of movement in entirely different continents.

“CPI: Joo, joo, kyl ne siis, varsinki toi Tumblr on sillee, niinku vähän... No mielenkiintonen asia, koska... no just... Ää... Just sitä, niinku aktivismii tai sitä, niin ei se oo se... Ei se oo mitenkään, niinku sillee ”oikee” aktivismi, mut kuitenkin, et mä oon saanu tosi paljon tietoo asioista niinku Tumblrin kautta, et niit, just niinku tää koko Ferguson, niinku situaatio, tai whatever, niinku ”situation”, mikä se on... öö... tilanne, niin en mä ois varmaan tienny siit melkeen mitään ilman sitä, tai mua ei ois niinku kiinnostanu, ja... No muitaki asioita, et... et silleen... öö... No oon mä saanu tosi paljon informaatioo, ja just, et näis ryhmäkeskusteluis me keskustellaan aika usein näist tämmösist asioist just, et se on niinku... Se on myös, niinku tärkeetä mulle, et... Ja et mä tykkään keskustella... Nii...”

4.3 CONCLUSION

Humans as social animals are naturally fascinated by social phenomena, and in the modern era different social media technologies being an important mediator in them, it is no wonder that they engage us so strongly in our everyday lives. The adolescents’ degree of engagement in the digital technologies clearly differs quite strongly, and some socio-digital participators are much more geeked out in their practices than others. The more geeked out adolescent’s networks are widely distributed geographically (Ito et.al., 2008), and the development of their individual socio-digital interests follow strongly the classic, four phase model of interest development (Hidi & Renninger, 2006). They also involved both a lot of self-directed and peer-based learning happening in specialized knowledge groups that are also important referee peer groups for the adolescents (Ito et.al., 2008). The interest related socio-digital networks offer both support and constraint to the adolescents (Wasserman & Faust), and for example the digital gamers’ parents often have more controversial feelings related to their child’s hobby compared to e.g. traditional team sports players’. It is, however, also likely that there are some strong, conventional stereotypes related to these feelings. Being fundamentally social in nature, modern technologies seem to be naturally rewarding to humans, which also makes them, to some extent, addictive. There are also some studies that consider ICT addiction as an important problem to recognize in daily life settings (Dhir, 2015), but however, since individual adolescents don’t seem to experience this “addiction” to have any negative consequences

in their lives, and it is more a norm than an exception in modern society to use ICT, it is quite problematic to use the term “addiction” in this connection.

There were multiple discoveries made in this study, most of which verified the results of previous research and in addition provided important, qualitative data based insights into the personal, socioemotional experiences of adolescents on their socio-digital realities. However, there were many questions that the data, unfortunately, wasn't sufficient to answer as such, and that further research is needed on. First of all, the small amount of gamers in the study made it difficult to make any reliable generalizations on them, and because of the fact that their networks are quite distributed geographically and are not only restricted to their school, it would be important to study these networks and their behaviour in different sorts of environments. Also the experiences of personal fulfilment, the quality over the quantity of the relationships in all three groups here investigated, but especially the gamers having smallest networks based on the network questionnaire data, is an important question for further research. The heavy gamers' actual gaming practices, how they actually work related to their interest was also not so easy to investigate by the method used in the study, and the means of observation, for example, would work a lot better for this purpose. The other important discovery that should be looked upon in more detail are the socioemotional reasons behind excessive technology engagement. There seem to be many distinctive attributions according to the interviewees' reflections that they found to be the working reasons behind their excessive technology use, such as teasing, tragic life events and also being in a relationship. Last, but not certainly least, are the gender differences related to ICT use and the cultural historical reasons behind the fact that boys rather than girls are thought to be somehow naturally better qualified for using computers and getting deeper engaged in technology is an important subject for further academic enquiry. Program code has an ever increasing impact on real life realities and relationships (Williams et.al., 2006), and no individual group of people should be allowed to get left technologically illiterate.

CONCLUDING REMARKS

Concerning ethical issues, the current research follows strictly the general ethical guidelines of the Mind the Gap -research and social scientific research in general. This means the data collected will not be handed over to any third parties without the permission of a project leaders. The participants of the study are not identifiable from the thesis, and they will be given distinctive ID numbers or nicknames. The school the interviews were conducted in isn't referred to by name in any part of the study. Also the material collected for the current study will be re-utilizable and publishable by for example the Mind the Gap -project team as long as good scientific reference practices are being followed.

The teacher training upper secondary school the interviews were conducted in is a teacher practice institution of a university. Therefore, the students of the school have, when signing up, agreed to be subjects of governmental and municipal research and development projects together with different departments of the university. This is why a separate proposal to the university ethics board was not necessary. The research subjects were, of course, made clear about the purpose of the study and their right to withdraw whenever they would desire, for one reason or another.

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REFERENCES

- Ainley, M., Hillman, K., & Hidi, S. (2002). Gender and interest processes in response to literary texts: Situational and individual interest. *Learning and Instruction*, 12(4), 411-428.
- Atzori, L., Iera, A., & Morabito, G. (2010). The internet of things: A survey. *Computer networks*, 54(15), 2787-2805.

- Barker, L. J. & Aspray, W. (2006). The state of research on girls and IT. In J. M. Cohoon & W. Aspray (Eds.), *Women and information technology: Research on underrepresentation* (pp. 3-54). Cambridge: MIT Press.
- Baron, N. S. (2008). *Always on: Language in an online and mobile world*. Oxford, United Kingdom: Oxford University Press.
- Barron, B. (2004). Learning ecologies for technological fluency: Gender and experience differences. *Journal of Educational Computing Research*, 31(1), 1-36.
- Blais, J. J., Craig, W. M., Pepler, D., & Connolly, J. (2008). Adolescents online: The importance of Internet activity choices to salient relationships. *Journal of youth and adolescence*, 37(5), 522-536.
- Borgatti, S. P., Everett, M. G., & Johnson, J. C. (2013). *Analyzing social networks*. Thousand Oaks, California: Sage.
- Bourdieu, P., & Wacquant, L. J. (1992). *An invitation to reflexive sociology*. Chicago, Illinois: University of Chicago press.
- Bronfenbrenner, U. (1996). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Brysbart, M., & Rastle, K. (2009). *Historical and conceptual issues in psychology*. Harlow, England: Pearson Education Limited.
- Bukowski, W. M., Hoza, B., & Boivin, M. (1994). Measuring friendship quality during pre-and early adolescence: The development and psychometric properties of the Friendship Qualities Scale. *Journal of social and Personal Relationships*, 11(3), 471-484.
- Burt, R. S. (2012). Network-related personality and the agency question: Multirole evidence from a virtual world1. *American Journal of Sociology*, 118(3), 543-591.
- Carr, N. (2011). *The shallows: What the Internet is doing to our brains*. New York, New York: Norton & Company.

Castells, M. (2001). *The Internet galaxy: Reflections on the Internet, business, and society*. Oxford: England: Oxford University Press.

Charlton, J. P. (2002). A factor-analytic investigation of computer 'addiction' and engagement. *British Journal of Psychology*, 93: 329–344.

Cole, H., & Griffiths, M. D. (2007). Social interactions in massively multiplayer online role-playing gamers. *CyberPsychology & Behavior*, 10(4), 575-583.

Correa, T., Hinsley, A. W., & De Zuniga, H. G. (2010). Who interacts on the Web? The intersection of users' personality and social media use. *Computers in Human Behavior*, 26(2), 247-253.

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, California: Sage.

Creswell, J. W., Plano Clark, V. L., Gutmann, M., & Hanson, W. (2003). Advanced mixed methods research designs. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social & behavioral research* (pp. 209–240). Thousand Oaks, California: Sage.

Denzin, N. K., & Lincoln, Y. S. (2011). *The SAGE handbook of qualitative research*. Thousand Oaks, California: Sage.

Desjarlais, M., & Willoughby, T. (2010). A longitudinal study of the relation between adolescent boys and girls' computer use with friends and friendship quality: Support for the social compensation or the rich-get-richer hypothesis?. *Computers in Human Behavior*, 26(5), 896-905.

Dhir, A. (2015). *On the Nature of Internet Addiction: What is it and how is it measured?* Helsinki, Finland: Picaset.

Domahidi, E., Festl, R., & Quandt, T. (2014). To dwell among gamers: Investigating the relationship between social online game use and gaming-related friendships. *Computers in Human Behavior*, 35, 107-115.

- Domahidi, E., & Quandt, T. (2014). "And all of a sudden my life was gone...": A biographical analysis of highly engaged adult gamers. *new media & society*, 1461444814521791.
- Donald, M. (1991). *Origins of the modern mind: Three stages in the evolution of culture and cognition*. Cambridge, Massachusetts: Harvard University Press.
- Elmes, D.G., Kantowitz, B.H., Roediger, H.L., (2012). *Research methods in psychology*. Wadsworth California: Cengage Learning.
- Eynon, R., & Malmberg, L. E. (2011). A typology of young people's Internet use: Implications for education. *Computers & Education*, 56(3), 585-595.
- Flick, U. (2007). *Designing qualitative research*. Thousand Oaks, California: Sage Publications.
- Krippendorff, K. (2012). *Content analysis: An introduction to its methodology*. Sage. Thousand Oaks, California: Sage Publications.
- Franzoi, S. L. (2009). *Social psychology (5th. ed. ed.)*. New York, New York: McGraw-Hill.
- Frostling-Henningsson, M. (2009). First-person shooter games as a way of connecting to people: "Brothers in blood". *CyberPsychology & Behavior*, 12(5), 557-562.
- Gee, J. P., & Hayes, E. R. (2011). *Language and learning in the digital age*. Abingdon, Oxon: Routledge.
- Grauer, Yael (2015, May 9). Security News This Week: Turns Out Baby Monitors Are Wildly Easy to Hack. *Wired*. Retrieved from: <http://www.wired.com/2015/09/security-news-week-turns-baby-monitors-wildly-easy-hack/>.
- Grill-Spector, K., & Weiner, K. (2014). The functional architecture of the ventral temporal cortex and its role in categorization. *Nature Reviews Neuroscience*, 15, 536-548.

Grüsser, S. M., Thalemann, R., & Griffiths, M. D. (2006). Excessive computer game playing: evidence for addiction and aggression?. *CyberPsychology & Behavior*, 10(2), 290-292.

Hakkarainen, K., Hietajärvi, L., Alho, K., Lonka, K., & Salmela-Aro, K. (2015). Socio-digital revolution: Digital natives vs digital immigrants. In J. D. Wright (editor-in-chief) *International encyclopedia of the social and behavioral sciences* (pp. 918-923). 2nd Edition, Vol 22. Oxford, England: Elsevier.

Hakkarainen, K., Ilomäki, L., Lipponen, L., Muukkonen, H., Rahikainen, M., Tuominen, T., Lakkala, M. & Lehtinen, E. (2000). Students' skills and practices of using ICT: Results of a national assessment in Finland. *Computers & Education*, 34(2), 103-117.

Lipponen, L., Ilomäki, L., Järvelä, S., Lakkala, M., Muukkonen, H., Rahikainen, M., & Lehtinen, E. (1999). *Tieto- ja viestintäteknikka tutkivan oppimisen välineenä*. Helsinki, Finland: Multiprint.

Hakkarainen, K., Lonka, K., & Lipponen, L. (2004). *Tutkiva oppiminen. Järki, tunteet ja kulttuuri oppimisen sytyttäjinä*. Helsinki: WSOY.

Haythornthwaite, C. (2005). Social networks and Internet connectivity effects. *Information, Community & Society*, 8(2), 125-147.

Hidi, S., Berndorff, D., & Ainley, M. (2002). Children's argument writing, interest and self-efficacy: An intervention study. *Learning and instruction*, 12(4), 429-446.

Hidi, S., Renninger, K. A., & Krapp, A. (2004). Interest, a motivational variable that combines affective and cognitive functioning. *Motivation, emotion, and cognition: Integrative perspectives on intellectual functioning and development*, 89-115.

Hietajärvi, L., Nuorteva, M., Tuominen-Soini, H., Hakkarainen, K., Salmela-Aro, K., & Lonka, K. (2014). Kuudesluokkalaisten nuorten sosiodigitaalinen osallistuminen, kiinnostuksen kohteet ja kouluhyvinvointi. *Kasvatus: Suomen kasvatustieteellinen aikakauskirja* 45 (2014): 5.

- Hietajärvi, L., Tuominen-Soini, H., Hakkarainen, K., Salmela-Aro, K., & Lonka, K. (2015). Is Student Motivation Related to Socio-digital Participation? A Person-oriented Approach. *Procedia-Social and Behavioral Sciences*, 171, 1156-1167.
- Hiilinen, T. (2015, October 29). Elektronisen urheilun superviikonloppu. Yle. Retrieved from: <http://yle.fi/aihe/artikkeli/2015/10/29/elektronisen-urheilun-superviikonloppu>.
- Hiilinen, T. (2015, August 8). Maailman suurin elektronisen urheilun turnaus huipentuu yöllä. Yle. Retrieved from: <http://yle.fi/aihe/artikkeli/2015/10/29/elektronisen-urheilun-superviikonloppu>.
- Hirsjärvi, S., Remes, P., & Sajavaara, P. (2009). *Tutki ja kirjoita*. Porvoo, Finland: Tammi.
- Hogan, B., Carrasco, J. A., & Wellman, B. (2007). Visualizing personal networks: working with participant-aided sociograms. *Field Methods*, 19(2), 116-144.
- Hsu, S., Wen, M., & Wu, M. (2009). Exploring user experiences as predictors of MMORPG addiction. *Computers and Education*, 53(3), 990-999.
- Hussain, Z. & Griffiths, M. (2009). The attitudes, feelings, and experiences of online gamers: A qualitative analysis. *Cyberpsychology and Behavior*, 12(6), 747-753.
- Huvila, I., Holmberg, K., Ek, S., & Widén-Wulff, W. (2010). Social capital in second life. *Online Information Review*, 34, 295-316.
- Hyman, S. E. (2005). Addiction: a disease of learning and memory. *American Journal of Psychiatry*, 162(8), 1414-1422.
- Ito, M., Baumer, S., Bittanti, M., boyd, d., Cody, R., Stephenson, B. H., Hosrt, H. A., Lange, P. G., Mahendran, D., Martinez, K.Z., Pascoe, C.J., Perkel, D. Robinson, L. Sims, C., & Tripp, L. (2009). *Hanging out, messing around, and geeking out: Kids living and learning with new media*. Cambridge, Massachusetts: MIT Press.

- Ito, M., Horst, H. A., Bittanti, M., Stephenson, B. H., Lange, P. G., Pascoe, C. J., ... & Martínez, K. Z. (2009). *Living and learning with new media: Summary of findings from the Digital Youth Project*. Cambridge, Massachusetts: MIT Press.
- Jansz, J. & Martens, L. (2005). Gaming at a LAN event: The social context of playing video games. *New Media & Society*, 7, 333–355.
- Jansz, J. & Tanis, M. (2007). Appeal of playing online first person shooter games. *CyberPsychology & Behavior*, 10, 133-136.
- Java, A., Song, X., Finin, T., & Tseng, B. (2007, August). Why we twitter: understanding microblogging usage and communities. In *Proceedings of the 9th WebKDD and 1st SNA-KDD 2007 workshop on Web mining and social network analysis* (pp. 56-65). ACM.
- Jenkins, H., Camper, B., Chisholm, A., Grigsby, N., Klopfer, E., Osterweil, S., Perry, J., Tan, P., Weise, M., & Guan, T.C. (2009). From serious games to serious gaming. In U. Ritterfeld, M. Cody, & P. Vorderer (Eds.) *Serious games: Mechanisms and effects* (pp. 448-468), New York, New York: Routledge.
- Karakainen, M. T., Kivinen, O., & Tervahartiala, K. (2013). Kouluikäisten tietoteknologian vapaa-ajan käyttö. *Nuorisotutkimus*, 31(2), 20-33.
- Kelly, K. (1998). The third culture. *Science*, 279, 992-993.
- Kennedy, G., Judd, T., Dalgarno, B., & Waycott, J. (2010). Beyond natives and immigrants: Exploring types of net generation students. *Journal of Computer Assisted Learning*, 26(5), 332-343.
- Kim, E., Namkoong, K., Ku, T., & Kim, S. (2008). The relationship between online game addiction and aggression, self-control, and narcissistic personality traits. *European Psychiatry*, 23(3), 212-218.
- Kivinen, O., Karakainen, M. T., & Anttila, A. (2014). Erot hypertekstien ja lineaaristen verkkotekstien opiskelutavoissa sekä luetun ymmärtämisessä. *Kasvatus: Suomen kasvatustieteellinen aikakauskirja* 45 (2014): 2.

- Klimmt, C. & Hartmann, T. (2008). Mediated interpersonal communication in multiplayer video games: Implications for entertainment and relationship management. In E. A. Konjin, S. Utz, M. Tanis, & S. B. Barnes (Eds.), *Mediated interpersonal communication* (pp. 309–330). Thousand Oaks, CA: Sage.
- Kraut, R. E., Rice, R. E., Cool, C., & Fish, R. S. (1998). Varieties of social influence: The role of utility and norms in the success of a new communication medium. *Organization Science*, 9, 437-453.
- Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T., & Scherlis, W. (1998). Internet paradox. A social technology that reduces social involvement and psychological well-being? *American Psychologist*, 53, 1017-1031.
- Krippendorff, K. (2004). *Content analysis: An introduction to its methodology* (2nd. Ed.). Thousand Oaks, California: Sage Publications.
- Kupiainen, R. (2013). Diginatiivit ja käyttäjälähtöinen kulttuuri. *Widerscreen*, 1, 2013-1.
- Kvale, S. (2008). *Doing interviews*. Thousand Oaks, California: Sage Publications.
- Lyons, E., & Coyle, A. (2007). *Analysing qualitative data in psychology*. Thousand Oaks, California: Sage Publications.
- Kynäslahti, H., Kupiainen, R., & Lehtonen, M. (2007). Näkökulmia mediakasvatukseen. *Mediakasvatusseuran julkaisuja*, 1(2007), 61-64.
- Lenhart, A., Kahne, J., Middaugh, E., Margill, A. R., Evans, C., & Vitak, J. (2008, September 16). Teens, video games, and civics: Teens' gaming experiences are diverse and include significant social interaction and civic engagement. ERIC Collection. Retrieved from <http://eric.ed.gov/?id=ED525058>.
- Marsden, P. V. (2002). Egocentric and sociocentric measures of network centrality. *Social networks*, 24(4), 407-422.
- McCarty, C., Molina, J. L., Aguilar, C., & Rota, L. (2007). A comparison of social network mapping and personal network visualization. *Field Methods*, 19(2), 145-162.

Merikivi, J. (2013). Still believing in virtual worlds: A decomposed approach. Turku, Finland: Suomen yliopistopaino Oy – Juvenes Print.

Mind the Gap (2016, January 5). In English. Retrieved from: <http://blogs.helsinki.fi/mindthegap/inenglish/>.

Niemelä, E. (1998). Sosioemotionaalinen kehitys ja sen häiriöt. Jyväskylä, Finland: Jyväskylän yliopisto.

Niiniluoto, I. (1980). Johdatus tieteenfilosofiaan: käsitteen- ja teorianmuodostus. Helsinki, Finland: Otava.

Ahonen, T., Lyytinen, H., Lyytinen, P., Nurmi, J. E., Pulkkinen, L., & Ruoppila, I. (2006). Ihmisen psykologinen kehitys. Helsinki, Finland: WSOY.

Pennington, D. C., Gillen, K., & Hill, P. (1999). Social psychology. London, England: Arnold.

Prensky, M. (2001). Digital natives, digital immigrants. *On the horizon*, 9(5), 1-6.

Rainie, L. & Wellman, B. (2012). Networked: The new social operating system. Cambridge, Massachusetts: MIT Press.

Reich, S.M., Subrahmanyam, K., & Espinoza, G.(2012). Friending, IMing, and hanging out face-to-face: Overlap in adolescents' online and offline social networks. *Developmental Psychology*, 48(2), 356-368.

Reinecke, L. (2009). Games and recovery: The use of video and computer games to recuperate from stress and strain. *Journal of Media Psychology*, 21, 126-142.

Renninger, A., Hidi, S., & Krapp, A. (2014). The role of interest in learning and development. New York, New York: Psychology Press.

Rheingold, H. (2012). Net smart: How to thrive online. Cambridge, Massachusetts: MIT Press.

- Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. Oxford: England: Oxford University Press.
- Ruokamo, H., Hakkarainen, P., & Eriksson, M. (2011). Designing a model for enhanced teaching and meaningful e-learning. *Informed Design of Educational Technologies in Higher Education: Enhanced Learning and Teaching: Enhanced Learning and Teaching*, 375.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68.
- Salmela-Aro, K., Muotka, J., Hakkarainen, K., Alho, K., & Lonka, K. (2016). School Burnout and Engagement Profiles among Digital Natives in Finland: A person-oriented approach. *European Journal of Developmental Psychology*.
- Scott, J. (2000). *Social network analysis: A handbook* (2nd ed.). London, England: Sage.
- Shaffer, H. J., Hall, M. N., & Vander Bilt, J. (2000). " Computer addiction": a critical consideration. *American Journal of Orthopsychiatry*, 70(2), 162.
- Shen, C. & Williams, D. (2011). Unpacking time online: Connecting Internet and massively multiplayer online game use with psychosocial well-being. *Communication Research*, 38(1), 123-149.
- Shirky, C. (2010). *Cognitive surplus: Creativity and generosity in a connected age*. London, England: Penguin.
- Spanagel, R., & Weiss, F. (1999). The dopamine hypothesis of reward: past and current status. *Trends in neurosciences*, 22(11), 521-527.
- Sugarbaker, M. (1998). What is a geek? Retrieved from <http://www.gibberish.com/gazebo/articles/geek3.html>.
- Suomen virallinen tilasto. (2015, June 10). Lukiokoulutus. Helsinki: Tilastokeskus. Retrieved from http://www.stat.fi/til/lop/2014/lop_2014_2015-06-10_tie_001_fi.html.

Tabachnick, B. G., & Fidell, L. S. (cop. 1989). *Using multivariate statistics* (2nd ed. ed.). New York, New York: HarperCollins.

Tassi, P. (2015, August 9). Evil Geniuses Take Home Record \$6.6M First Prize In Valve's 'Dota 2' International. *Forbes*. Retrieved from: <http://www.forbes.com/sites/insertcoin/2015/08/09/evil-geniuses-take-home-record-6-6m-first-prize-in-valves-dota-2-international/>.

Tomasello, M. (2009). *The cultural origins of human cognition*. Cambridge Massachusetts: Harvard University Press.

Trepte, S., & Reinecke, L. (2011). The pleasures of success: Game-related efficacy experiences as a mediator between player performance and game enjoyment. *Cyberpsychology, Behavior, and Social Networking*, 14(9), 555-557.

Trepte, S., Reinecke, L., & Juechems, K. (2012). The social side of gaming: How playing online computer games creates online and offline social support. *Computers in Human Behavior*, 28(3), 832-839.

Tuominen-Soini, H. (2012). Student motivation and well-being: Achievement goal orientation profiles, temporal stability, and academic and socio-emotional outcomes.

Wasserman, S., & Faust, K. (1994). *Social network analysis: Methods and applications*. Cambridge, Massachusetts: Cambridge University Press.

Wellman, B. (2007). Challenges in collecting personal network data: The nature of personal network analysis. *Field Methods*, 19(2), 111.

Williams, D. (2006). Groups and goblins: The social and civic impact of online games. *Journal of Broadcasting and Electronic Media*, 50, 651-681.

Williams, D., Ducheneaut, N., Xiong, L., Zhang, Y., Yee, N., & Nickell, E. (2006). From tree house to barracks: The social life of guilds in *World of Warcraft*. *Games and Culture*, 1, 338-361.

Väljjarvi, J., Kupari, P., Ahonen, A.K., Arffman, I., Harju-Luukkainen, H., Leino, K., Niemivirta, M., Nissinen, K., Salmela-Aro, K., Tarnanen, M., Tuominen-Soini, H., Vettenranta, J., & Vuorinen, R. (2015). Millä eväillä osaaminen uuteen nousuun? PISA 2012 –tutkimustuloksia. Helsinki, Finland: Opetus- ja kulttuuriministeriön julkaisuja 2015:6.

APPENDICES

APPENDIX 1: LUKIOLAISTEN SOSIODIGITAALISEN OSALLISTUMISEN HAASTATTELURUNKO: NUORTEN KIINNOSTUKSET, KAVERISUHTEET, OPISKELU JA TOIMINTA NETTISIVUILLA

[Kysy kaikissa kohdissa aina ensiksi yleinen kysymys ja tarkenna kysymystä vain mikäli haastateltava ei ymmärrä kysymystä tai tuntuu tarvitsevan tarkennusta. Ole mieluummin passiivinen kuin aktiivinen antaen haastateltavan itse puhua ja kertoa. Odota, että hän on päässyt ajatuksen loppuun ja kysy tarvittaessa tarkentavia kysymyksiä: Kerro tarkemmin? Mitä siihen sisältyy? Antaisitko esimerkkejä? Kussakin kohdassa on tärkeä aluksi kuvata nuoren toimintaa yleensä ja vasta sitten siirrytään käsittelemään tietotekniikan/netin välittämää toimintaa]

HAASTATTELUN ALOITTAMINEN

Hei, minun nimeni on [_____] ja teen haastattelua Mind the Gap tutkimukseen liittyen, jossa ovat mukana mm. Helsingin ja Turun yliopistot. Olemme pyytäneet sinut haastateltavaksi, koska haluamme ymmärtää lukiolaisten kiinnostuksia, kaverisuhteita, ja toimintaa netissä. Haastatteluun menee noin tunnin verran.

Kaikki mitä minulle kerrot on luottamuksellista. Heti kun haastattelu on tehty, se puretaan nauhoilta tekstiksi. Sinulle ja mainitsemillesi kavereille annetaan koodinumero niin ettei kukaan saa jälkikäteen tietää henkilöllisyyttäsi. Sinulla on missä tahansa vaiheessa oikeus vetäytyä tutkimuksesta ja kieltää sinulta kerätyn aineiston käyttö.

TEEMA 1. SOSIAALINEN HENGAILEMINEN NETISSÄ

[Tämän osion tarkoituksena on orientoida haastatteluun ja alustavasti kartoittaa haastateltavan sosiodigitaalisen osallistumisen käytäntöjä. Olennaista on pyytää haastateltavaa antamaan konkreettisia esimerkkejä sosiodigitaalisesta toiminnastaan ympäriryöiden vastausten sijaan (kertoa tyypillinen esimerkki, kuvailla erilaisia tapoja käyttää sovellutuksia, palauttaa mieleensä jokin mieleenpainunut tilanne tms)]

Kyselisin aluksi siitä millä tavalla käytät nettiä ja mobiililaitteita yhteydenpitoon kavereidesi kanssa

Välineet ja sovellukset

- Millä tavalla olet yhteydessä kavereihisi silloin kun kasvoista kasvoihin kohtaaminen ei ole mahdollista?
- Onko sinulla älypuhelin, jolla olet koko ajan netissä vai menetkö nettiin tietokoneella?
- Missä määrin käytät koulun antamaa läppäriä yhteydenpitoon kavereiden kanssa? Vai käytätkö omaa tietokonettasi?
- Mitä sovellutuksia käytät yleensä yhteydenpitoon kavereidesi kanssa? (esim. Facebook, Whatsup, KIK, IRC, Instagram, Twitter)
- Mitkä näistä olisivat sinulle tärkeimpiä a) verkostopalveluja tai b) pikaviestisovellutuksia (valitse yksin kumpaakin).

Verkostopalvelut

- Kertoisitko kuinka käytät itsellesi tärkeintä **verkostopalvelua, kuten esimerkiksi Facebook?**
- Kuinka paljon sinulla on kavereita tässä verkostopalvelussa [Facebook]?
- Kuinka suureen joukkoon kavereita olet [palvelun] välityksellä tiiviisti vastavuoroisessa yhteydessä? (joko päivittäin tai viikoittain)
- Mistä nämä parhaat kaverit tulevat (koulusta, lähinaapuristosta, harrastuksista, muualta)?
- Mihin eri tarkoituksiin käytät sovellutusta? Mitä asioita siellä tyypillisesti teet? Kerro esimerkkejä
 - Kuinka usein seuraat kavereidesi päivityksiä?
 - Kuinka usein tykkäät heidän tekemisistään?
 - Kuinka usein kommentoit heidän tekemisiään?
 - Kuinka paljon jaat omia tekemisiäsi?
 - Mitä asioita jaat verkostopalvelun kautta? (kuvat, kommentit?) Kerro esimerkkejä
 - Millaista palautetta tai reaktioita tämä on synnyttänyt?
- Oletko kavereidesi kanssa perustanut omia ryhmiä? Missä tarkoituksessa? Kuinka ne

toimivat? Esimerkkejä

- Oletko mukana joissakin muiden luomissa ryhmissä? Mihin aiheisiin liittyvät? Miten toimivat? Esimerkkejä
- Kuinka tapasi käyttää verkostopalvelua on muuttunut ja kehittynyt?
- Kertoisitko jonkun tyypillisen esimerkin verkostopalvelun [Facebook] käytöstä (mitä tehtiin, keitä mukana, mitä tapahtui, miltä tuntui)

Pikaviestipalvelut

- Kertoisitko kuinka käytät itsellesi tärkeintä **pikaviestipalvelua, kuten esimerkiksi Whatsup?**
- Kuinka moneen kaveriin olet pikaviestipalvelun välityksellä vastavuoroisesti yhteydessä? Kuinka usein viestittelette?
- Mistä he tulevat (koulu, naapurusto, harrastukset, muualta)
- Oletko perustanut palveluun ryhmiä erilaisia kaveripiirejä varten? Missä tarkoituksessa? Kuinka ne toimivat?
- Missä tilanteessa käytät pikaviestipalvelua? Mitä tarkoituksia se palvelee?
- Mistä asioista yleensä viestittelette? Mitä asioita viestit sisältävät?
 - Käytännöt asioista sopiminen (tapaamiset)
 - Oman tilanteen raportoiminen (toimintatilanne, myönteiset ja kielteiset tunteet)
 - Kaverin tilanteen raportoiminen (toimintatilanne, myönteiset ja kielteiset tunteet)
 - Avun pyytäminen ja antaminen
- Kuinka usein aloitat itse viestittelyn tai vain vastaat kavereiden viesteihin?
- Kertoisitko jonkun tyypillisen esimerkin pikaviestipalvelun käytöstä (kuinka viestittely käynnistyy, miksi se tapahtuu, keitä mukana, mitä tapahtui, miltä tuntui)?

Psyykkiset tarpeet ja sosiaalinen hengailu

- Voisitko tämän osuuden lopuksi kuvailla millaisia tarpeita verkostopalvelun ja pikaviestipalvelun käyttäminen palvelee? (toiminnan organisointi, tiedon välittäminen, tunnetasapainon ylläpitäminen, kiinnostusten jakaminen, kaveryhteisön ylläpitäminen)

TEEMA 2. ITSEÄ INNOSTAVIEN ASIOIDEN (HARRASTUKSET/KIINNOSTUS) KARTOITTAMINEN

[Tämän teeman tarkoituksena on kartoittaa haastateltavan kiinnostusten ohjaamaa toimintaa yleisesti. Olisi tärkeää saada haastateltavat kuvaamaan kiinnostustensa ja harrastustensa koko kirjoa. Seuraavassa osassa kuvataan jonkun valitun kiinnostuksen pohjalta heidän henkilökohtaista sosiaalista verkostoaan. Koska haastateltavilla on tapana ymmärtää ”harrastukset” liian vaativasti (vakavina harrastuksina), on tärkeää auttaa heitä ymmärtämään, että myös jokin lyhytaikaisenkin innostus voi sopia tarkoitukseen. Samalla kartoitetaan kunkin harrastuksen tai kiinnostuksen sosiodigitaalista ulottuvuutta eli netin tarjoamaa tukea ja lisäarvoa.]

Seuraavassa haluaisimme kysyä sinulta kiinnostuksistasi tai harrastuksistasi eli asioista, joiden tekemisestä pidät ja jotka ainakin joskus saavat sinut innostumaan. Kysymyksessä voi olla asiasta, josta olet joko lyhyemmän tai pidemmän ajan ollut kiinnostunut. Niiden ei tarvitse olla kuitenkaan mikään vakavia harrastuksia, vaan voivat olla joko ohimeneviä tai pysyviä kiinnostuksia.

- Eli mistä asioista olet kiinnostunut? Millaisia harrastuksia sinulla on? Millaiset asiat sinua innostavat?
- Kerro kustakin kiinnostuksen kohteesta/harrastuksesta yleisesti a) missä ja milloin harrastus alkanut; b) kuinka tärkeä ja keskeinen se on sinulle; c) keitä henkilöitä siihen on liittynyt, ja d) millaista oppimista tai kehitystä on tapahtunut.
- Missä määrin käytät nettiä näihin harrastuksiin liittyvässä toiminnassa (vertaissuhteet, uuden tiedon etsintä tai taitojen mallista oppiminen)?
- Onko sinulla joitakin muita harrastuksia?
- Valitse jokin kiinnostus, jossa ja vastaa seuraaviin tarkempiin kysymyksiin sen pohjalta (mielellään sellainen, johon netti liittyyisi jollakin tavalla)

TEEMA 3. KIINNOSTUKSEEN LIITTYVÄ OPPIMINEN JA HENKILÖKOHTAINEN VERKOSTO

3.1 Seuraavassa pyytäisin sinua hahmottamaan valittua kiinnostusta, siihen liittyvää toimintaa ja henkilöitä piirroksen avulla. Piirros voisi olla vaikka aikajana, kehityskäyrä tai vaikkapa verkostokartta (ohessa pari esimerkkiä). Piirros on muistisi tukena ja sen avulla voit kuvata asioita, joita ei ehkä ole helppoa sanallisesti kertoa.

Olemme erityisen kiinnostuneita niistä **avaintapahtumista** ja **käännekohtista**, jotka ovat vaikuttaneet kiinnostukseen liittyvään toimintaan.

- **Avaintapahtumat** ovat sinun merkityksellisiksi kokemiesi jokapäiväisen elämän tapahtumia, jotka ovat vaikuttaneet kiinnostuksen kehitykseen (ks. Tripp, 1993, 1994).
- **Käännekohdat** ovat puolestaan tilanteita, joissa kiinnostukseen liittyvä toiminta on olennaisesti muuttanut suuntaa (esimerkiksi uuden harrastuksen aloittaminen, uusien harrastuskavereiden löytäminen)
- Avaintapahtumat voivat olla **palkitsevia** (innostavia tapahtumia, jotka rohkaisevat toiminnan jatkamiseen) tai **haastavia, ongelmallisia kohtia** (turhauttavat kokemukset, vaikeuksien tai esteiden kohtaaminen)
- Avaintapahtumat voivat liittyä kiinnostukseen liittyvän toiminnan aloittamiseen, oman osaamisen muodostukseen (taitojen oppiminen), ohjaukseen tai tuen saamiseen, tai pääsemiseen johonkin kiinnostukseen liittyvään yhteisöön)
- Ne ovat voineet tapahtua yksin, vertaisten kanssa, tai aikuisilla on voinut olla niissä oma roolinsa. Henkilöt voivat olla avaintapahtumiin jollakin lailla vaikuttaneita tai niihin jossakin roolissa, etäältäkin, osallistuneita.

Ajattele kiinnostustasi ja siihen liittyvää toimintaa. Miltä se näyttäisi paperille piirrettynä. Mieti millaisia avainkohtia tai tapahtumia kiinnostukseen liittyvässä toiminnassa on esiintynyt ja merkitse ne selkeästi piirustukseen. Tarkoituksemme on haastattelussa kysyä sinulta näistä avainkohdista yksi kerrallaan, kuvata mitä niissä tapahtui ja ketkä olivat siinä mukana.

1. Kuvaile mitä avaintapahtumassa x tapahtui

Missä ja milloin tämä avaintapahtuma sattui (vuosi)

Mitä asioita avaintapahtumaan liittyi

Millainen kokemus se oli?

Miten se vaikuttiko sinuun?

Miksi tapahtuma oli oleellinen?

Oliko tapahtuma palkitseva vai haastava luonteeltaan? Missä suhteessa?

2. Mikä oli muiden ihmisten rooli avaintapahtumassa? Oliko joillakin henkilöillä avaintapahtuman kannalta merkityksellinen rooli? Ketkä kavereistasi jakoivat avaintapahtumaa kanssasi tai vaikuttivat siihen. Kirjoita heidän nimensä (etunimi ja sukunimi)

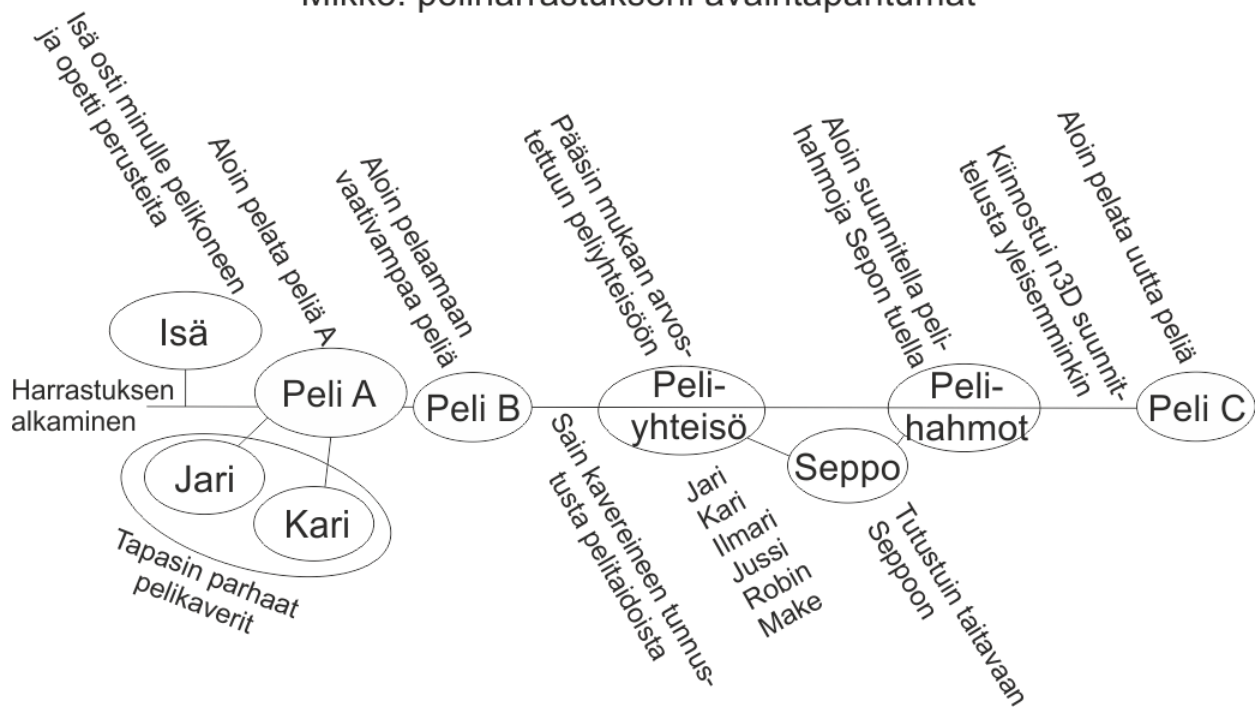
3. Kerro tarkemmin kustakin henkilöstä. Kuka hän on? Mitä on sinun suhteesi häneen? Mikä on hänen roolinsa? Mitä hän merkitsee sinulle ja kiinnostuksellesi?

- a. Henkilö ikä
- b. Rooli (kaveri, opettaja, vanhempi, ohjaaja)
- c. Tutustuminen, missä milloin
- d. Kuinka läheinen suhde (tiiviyys, vastavuoroisuus)
- e. Millaisessa suhteessa olet häneen nykyään

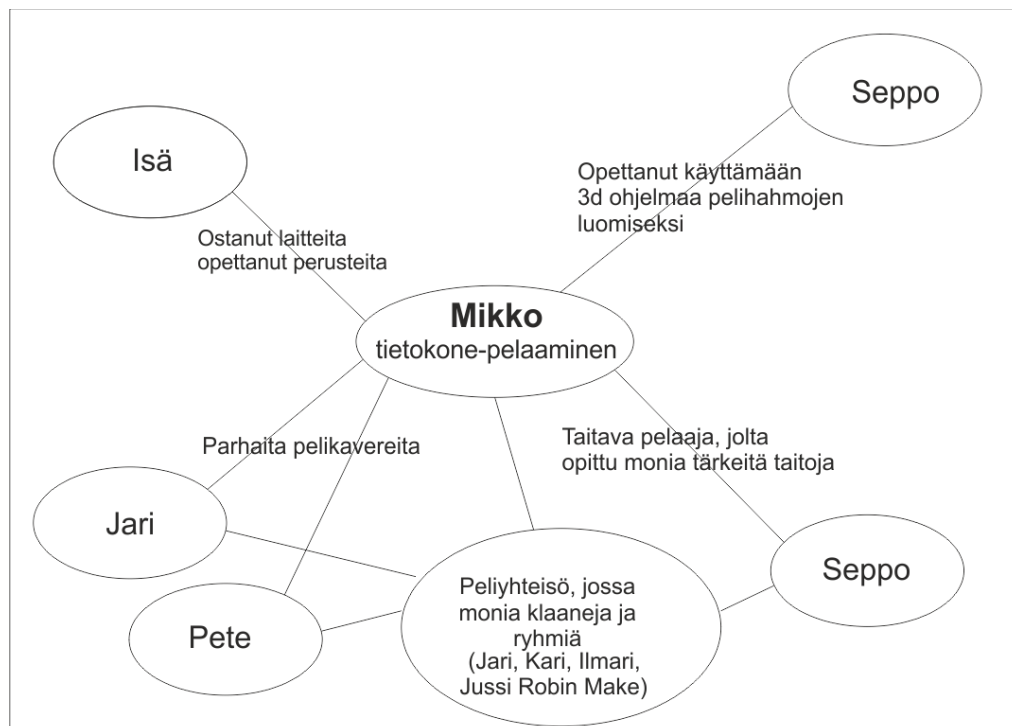
4. Tuntevatko avaintapahtumiin liittyneet henkilöt toisensa?

KAKSI ESIMERKKIPIIRUSTUSTA KIINNOSTUKSEEN LIITTYVÄSTÄ OPPIMISVERKOSTOSTA

Mikko: peliharrastuksen avaintapahtumat



KUVIO 1. AIKAJANALLE SIJOITETTU KIINNOSTUKSEN KEHITTYMINEN



KUVIO 2. KIINNOSTUKSEEN LIITTYVÄ HENKILÖKOHTAINEN VERKOSTO

3.2 Apukysymyksiä piirroksessa esitettyjen avaintapahtumien hahmottamiseksi

Kiinnostuksen herääminen

- Kuinka kiinnostuksesi alun perin heräsi? Mitkä avaintapahtumat sen virittivät tai sytyttivät?
- Ketkä olivat harrastuksen alkaessa avainhenkilöt ja kuinka he auttoivat? Täydennä kuviota tarvittaessa

Kiinnostuksen sosiaalinen jakaminen

- Olet merkinnyt piirrokseseen joitakin kavereistasi, jotka jakavat kiinnostustasi? Voisitko käydä heidät lävitse yksi kerrallaan ja kuvata millaista kiinnostukseen liittyviä asioita jaatte?
- Millä tavalla olette yhteydessä keskenänne? Missä yhteyksessä ja kuinka usein tapaatte? (kuinka usein kasvoista kasvoihin tapaamisia, entä yhteydenpito netin välityksellä)
- Missä määrin olet tutustunut uusiin ihmisiin, jotka jakavat kiinnostuksesi? Missä yhteydessä?

Kiinnostukseen liittyvä taitojen oppiminen

- Kun ihmiset innostuvat jostakin asiasta ja osallistuvat siihen liittyvään toimintaan, se saa heidän osaamisensa vähitellen kehittymään, vaikka eivät tulisi taitavammiksi siinä.
- Oletko huomannut, että olisi tullut jossakin suhteessa taitavammaksi kiinnostukseen liittyvässä toiminnassa? Missä suhteessa niin on tapahtunut? Kerro esimerkkejä?
- Onko kiinnostukseesi liittynyt joidenkin taitojen harjoittamista tai osaamisen kehittämistä? Minkä? (Esim. pelaamiseen havaintomotoriikka ja strateginen päätöksenteko)

Kiinnostukseen liittyvä ohjaava tuki

- Kuvailenko kiinnostuksen suhteen mahdollisesti saamaasi ohjausta ja tukea (esimerkiksi vanhemmat, kokeneemmat nuoret, aikuiset opettajat ja valmentajat)
- Keneltä opit uusia kiinnostukseen liittyviä tietoja ja taitoja?

Kiinnostukseen liittyvä innostuminen ja turhautuminen

- Mikä sinua innostaa/on innostanut tämän asian tekemisessä? Mitä tähän toimintaan osallistuminen antaa sinulle? Esimerkkejä
- Onko kiinnostukseen sisältynyt turhauttavia kokemuksia ja pettymyksiä. Kerro esimerkki? Kuinka olet niistä selviytynyt? Millaista tukea saanut muilta?
- Mitkä asiat ovat tukeneet/rajoittaneet osaamisesi kehittymistä?

Kiinnostukseen liittyvä sosiaalinen tunnustus

- Oletko saanut rohkaisua tai tunnustusta kiinnostukseen liittyvästä aktiivisesta osallistumisestasi, innostuksestasi tai hankkimistasi taidoista? Jos olet, niin keneltä, millaista ja missä tilanteessa?
- Miten haluaisit jatkaa kiinnostukseen liittyvää toimintaa tulevaisuudessa? Millaisia näköaloja, päämääriä tai haaveita sinulla on?

Netin rooli kiinnostukseen liittyvän osaamisen kehittämisessä

- **Aluksi kysytään yleisesti ja vasta sitten tietotekniikan/netin roolista joko taidon harjoittamisen välineenä, kohteena tai ympäristönä]**
- Monta kertaa kun ihmisellä on joku kiinnostus, hän käyttää sosiaalista mediaa ja internetiä siihen liittyvien asioiden tekemiseen tai uuden tiedon hankkimiseen? Miten sinun tapauksessasi?
- Missä määrin teet kiinnostukseesi liittyviä asioita netissä? Oletko käyttänyt tietotekniikkaa tai nettiä johonkin kiinnostukseesi liittyvän tiedon tai taidon hankkimiseksi? (uTube videot, nettisivustot, sähköiset materiaalit)?
- Onko kiinnostukseen liittynyt jonkinlaista omaa tuottamista ja tiedon tai median jakamista (esimerkiksi valokuvat, videot, ohjelmat, tekstit) ja uudelleen välittämistä?
- Missä määrin tarve kiinnostukseen liittyvän taidon/osaamisen syventämiseen on saanut sinut luomaan netissä yhteyksiä uusiin ihmisiin tai yhteisöihin?
- Koetko kuuluvasi sinua kiinnostavia asioita jakavaan nettiyhteisöön? Oletko löytänyt sieltä hengenheimolaisia?

Mitä asioita nettiosallistumiseen sisältyy?

- Kiinnostukseen liittyvän sosiaalisen toiminnan organisointi
- Kiinnostukseen liittyvän uuden tiedon etsintä internetistä (verkkosivustot, videot)
- Omien kiinnostukseen liittyvien kysymysten ja kommenttien esittäminen keskustelupalstoilla
- Kiinnostukseen liittyvien omien tuotosten (media) jakaminen
- Kiinnostukseen liittyviin tapahtumiin osallistuminen

TEEMA 4. AKATEEMINEN TUKI

[Tässä on tärkeää kysyä yhtäältä 1) kuinka koulussa käytetään läppäreitä opiskelun tukena opettajan ja koulun ohjeistamana ja toisaalta 2) millaisia omaehtoisesti ja vertaisyhteisöllisesti syntyneistä teknologian välittämiä opiskelukäytäntöjä nuoret ovat kehittäneet.

Lukio-opiskeluun orientoituminen

- Kuinka suhtaudut kouluun ja opiskeluun? Missä määrin pidät lukiossa opiskelusta?
- Oliko lukioon hakeutuminen sinulle itsestään selvää? Minkälaisia tulevaisuuden suunnitelmia sinulla on?
- Missä määrin koet, että opiskelun asettamat haasteet ja vaatimukset kasvoivat siirryttäessä yläasteelta lukioon?

Vertaisoppiminen

- Keneltä voit pyytää auttamaan tarvitessasi apua koulutehtävissäsi (opettajia lukuun ottamatta)?
- Missä määrin vanhempasi auttavat/voivat auttaa sinua koulutehtävissä?
- Missä määrin kaverit auttavat sinua opiskelussa? Miten se tapahtuu? Netin välityksellä? "Livenä"?
- Missä määrin autat itse kavereita koulutyössä? Miten se tapahtuu?

Tietotekniikan käyttö koulussa

- Missä määrin käytätte nettiä oppimistehtävien tekemisessä koulussa? (Kerro esimerkki)
- Käytättekö koulun antamaa läppäriä tässä apuna? Jos kyllä, niin mitä sovellusta/sovelluksia? Millä tavalla?
- Teetkö tiedonhakuja netissä koulutehtäviä varten? Kerro esimerkkejä? Mistä ja millä tavalla yleensä etsit tietoa?
- Millaisesta informaatiosta on kysymys? Oletko tyytyväinen löytämäsi informaatioon? Miten arvioit sen luotettavuutta? Miten työstät sitä?
- Oletteko tehneet läppäreiden varassa jotakin laajempaa projektia? Kerro jokin esimerkki itseäsi innostaneesta projektista: Kuvaa aihetta, käytettyjä sovellutuksia, tietohakua, opiskelijoiden yhteistoimintaa, tuotoksia?

Omaehtoinen sosio-digitaalisten välineiden käyttö opiskelun tukemiseen

- Kuinka käytät läppäriä koulun ulkopuolella opiskelutarkoituksin (kotitehtävät, sähköisen oppimateriaalin käyttäminen, tietohakujen tekeminen)?

- Oletko kehittänyt omia tapoja käyttää tietsikkaa opiskelun tukena (esimerkiksi muistiinpanojen tekeminen, päiväkirjan pitäminen, visualisointi (käsitekartat, kaavakuvat), internet-materiaalien kokoaminen ja jäsentäminen).
- Ketkä ovat ohjanneet ja neuvoneet sinua tietsikan ja netin käytössä opiskelun tukena?
- Missä määrin käytät nettiä koulutehtäviin liittyvien neuvojen antamisessa ja vastaanottamisessa?
- Kuinka paljon se tapahtuu omasta aloitteesta tai opettajan kehotuksesta?
- Missä määrin jaatko koulutyössä tarpeellista nettimateriaalia sosiaalisen median välityksellä kavereidesi kanssa ilman opettajan kehotusta? Kerro esimerkkejä.

TEEMA 5. TIETOTEKNIIKAN OSAAMINEN

[Kysytään lopuksi kaikilta vielä systemaattisesti tietotekniikkaan suhtautumisesta ja sen osaamisesta]

Orientaatio tietotekniikkaan

- Miten suhtaudut tietotekniikkaan? Oletko innostunut sen käytöstä opiskelussa vai mieluummin selviäisit ilman?

Osaamisprofiili

- Kertoisitko kuinka hyvin osaat käyttää tietokonetta tai erilaisia internet sovellutuksia? Mitä asioita osaat tehdä tietokoneella tai netissä?
 - Oletko oppinut joidenkin vaativampien teknisten taitojen hallintaa (käyttöjärjestelmien asentaminen, oheislaitteiden asentaminen, tietokoneen kokoaminen). Kerro konkreettisia esimerkkejä.
 - Oletko opetellut tietokoneohjelmointia tai siihen liittyviä taitoja
 - Entä median luominen tietokoneen avulla (kuvien muokkaus, videoiden editointi, animaatioiden tekeminen)?
 - Kuinka sinulta onnistuu verkkosivujen luominen?
- Mitä asioita et kunnolla hallitse? Mitä haluaisit oppia?
- Mistä olet taitosi oppinut? (kuinka vanhemmat/kaverit/opettaja tukeneet ja ohjanneet)
- Missä määrin käytät mielelläsi aikaa ja vaivaa tietotekniikan taitojen omaksumiseksi?

Tuen antaminen ja saaminen

- Kuinka usein joudut pyytämään apua tietotekniikan ongelmien ratkaisemiseksi? Kerro esimerkki tällaisesta tilanteesta.

- Miltä sinusta tuntuu törmätessä tällaiseen ylivoimaiseen ongelmaan?
- Kuinka selviät niistä? Mistä saat apua (kaverit, googlettaminen)?
- Missä määrin olet itse auttanut kavereita tai muita tietotekniikkaan liittyvien ongelmien ratkaisemisessa?

Sosiaalinen tunnustus

- Oletko saanut sosiaalista tunnustusta tietotekniikan osaamisesta?

TEEMA 6 SOSIODIGITAALINEN RIIPPUVUUS

[Lopuksi kysyisimme sinulta missä määrin olet kokenut netin käyttämiseen tai johonkin tietotekniseen kiinnostukseen, esimerkiksi pelaaminen, liittyvää riippuvuutta]

Riippuvuuden kokemus

- Onko sinusta vaikeaa keskeyttää netin käyttäminen/pelaaminen? Missä määrin tunnet kokevasi jonkinlaista netti/peli riippuvuutta?
- Kuinka vahvasti ajatuksesi pyörivät netin/pelaamisen ympärillä tavallisen päivän aikana? Ajatteletko nettiin/pelaamiseen liittyviä asioita silloinkin kun et ole koneen/netin ääressä?
- Tunnetko olosi levottomaksi, turhautuneeksi tai ärtyneeksi kun et jostakin syystä (verkko ei toimi) pääse nettiin/pelaamaan?

Psyykkisten tarpeiden kohdentuminen

- Oletko huomannut tarvetta olla netissä/pelata useammin tai pidempiä aikoja päästäksesi rentoutumaan?
- Missä määrin käytät nettiä/ pelaamista sulkeaksesi mielestäsi ikäviä asioita tai vastoinkäymisiä
- Missä määrin se palvelee ikävystymisen karkoittamista?
- Kuinka usein olet yrittänyt lopettaa tai rajoittaa netin käyttöä tai pelaamista? Kuinka se on onnistunut?

Kielteiset vaikutukset

- Oletko huomannut netinkäyttämisen/pelaamisen kielteisiä vaikutuksia (kaverisuhteet, koulu, perhesuhteet)?

- Missä määrin netin käyttöön/pelaamiseen suuntaamasi aika aiheuttaa konflikteja vanhempien/kavereiden kanssa?
- Laiminlyötkö päivittäisiä velvollisuuksiasi (kouluun tai perhe-elämään liittyviä) koska mieluummin olisit netissä tai pelaisit?
- Onko netin käyttö tai pelaaminen vaikuttanut keskittymiskykyysi?

HAASTATTELUN PÄÄTTÄMINEN

- Onko jotakin muuta mitä voisit kertoa itsestäsi, kaverisuhteistasi ja opiskelustasi? Onko jotakin mitä haluaisit lisätä? Olemme erittäin kiitollisia avustasi!

APPENDIX 2: THE INDEGREE VALUES OF THE 3 SDP GROUPS.

Basic participators

| | | Statistics | | |
|------------------------|---------|-------------------|---------------------------|------------------------|
| | | hangout_indegree | hangout_reciprocal_degree | ICT_expertise_indegree |
| N | Valid | 5 | 5 | 5 |
| | Missing | 0 | 0 | 0 |
| Mean | | 13,8000 | 18,0000 | ,4000 |
| Median | | 15,0000 | 17,0000 | ,0000 |
| Mode | | 5,00 ^a | 17,00 | ,00 |
| Std. Deviation | | 5,26308 | 9,24662 | ,54772 |
| Skewness | | -1,510 | ,534 | ,609 |
| Std. Error of Skewness | | ,913 | ,913 | ,913 |
| Kurtosis | | 3,002 | 2,115 | -3,333 |
| Std. Error of Kurtosis | | 2,000 | 2,000 | 2,000 |

a. Multiple modes exist. The smallest value is shown

Creative participators

| | | Statistics | | |
|------------------------|---------|-------------------|---------------------------|------------------------|
| | | hangout_indegree | hangout_reciprocal_degree | ICT_expertise_indegree |
| N | Valid | 7 | 7 | 7 |
| | Missing | 0 | 0 | 0 |
| Mean | | 8,5714 | 14,1429 | 1,7143 |
| Median | | 8,0000 | 14,0000 | ,0000 |
| Mode | | 3,00 ^a | 4,00 ^a | ,00 |
| Std. Deviation | | 4,42934 | 7,69044 | 2,92770 |
| Skewness | | ,223 | -,268 | 2,122 |
| Std. Error of Skewness | | ,794 | ,794 | ,794 |
| Kurtosis | | -1,153 | -1,649 | 4,735 |
| Std. Error of Kurtosis | | 1,587 | 1,587 | 1,587 |
| Minimum | | 3,00 | 4,00 | ,00 |
| Maximum | | 15,00 | 23,00 | 8,00 |

a. Multiple modes exist. The smallest value is shown

Gaming oriented participators

Statistics

| | | hangout_indegree | hangout_reciprocal_degree | ICT_expertise_indegree |
|------------------------|---------|------------------|---------------------------|------------------------|
| N | Valid | 3 | 3 | 3 |
| | Missing | 0 | 0 | 0 |
| Mean | | 6,6667 | 8,0000 | 2,3333 |
| Median | | 8,0000 | 8,0000 | 3,0000 |
| Mode | | ,00 ^a | ,00 ^a | ,00 ^a |
| Std. Deviation | | 6,11010 | 8,00000 | 2,08167 |
| Skewness | | -,935 | ,000 | -1,293 |
| Std. Error of Skewness | | 1,225 | 1,225 | 1,225 |

a. Multiple modes exist. The smallest value is shown

APPENDIX 3: ICT ADDICTION DESCRIPTIVES

Sum composite variable formation

| Composite variable | Sections | Cronbach's alfa | Section correlations | Mean (entire school) | St.dev. (entire school) |
|--------------------|---|-----------------|----------------------|----------------------|-------------------------|
| ICT addiction | a96.1_ICT_addiction: I have powerful urge to use ICT all the time | 0,796 | ,640 | 2,4765 | 0,99295 |
| | | | ,750 | | |
| | a96.2_ICT_addiction: Using ICT makes me neglect my schoolwork | | ,630 | | |
| | a96.3_ICT_addiction: I get angry when I have to stop using my computer | | ,645 | | |
| | a96.4_ICT_addiction: I use ICT to late night when its possible | | ,302 | | |
| | a96.5_ICT_addiction: I use energy drinks to be able to act longer on computer | | ,370 | | |

Whole group of participants

Statistics

ICT_addiction

| | | |
|------------------------|---------|-------------------|
| N | Valid | 17 |
| | Missing | 3 |
| Mean | | 2,9608 |
| Median | | 2,8333 |
| Mode | | 2,33 ^a |
| Std. Deviation | | ,92144 |
| Skewness | | ,196 |
| Std. Error of Skewness | | ,550 |
| Kurtosis | | ,882 |
| Std. Error of Kurtosis | | 1,063 |
| Minimum | | 1,00 |
| Maximum | | 5,00 |
| Percentiles | 25 | 2,4167 |
| | 50 | 2,8333 |
| | 75 | 3,7500 |

a. Multiple modes exist. The smallest value is shown

The basic participators

Statistics

ICT_addiction

| | | |
|------------------------|---------|-------------------|
| N | Valid | 3 |
| | Missing | 2 |
| Mean | | 2,0556 |
| Median | | 2,3333 |
| Mode | | 1,00 ^a |
| Std. Deviation | | ,94771 |
| Skewness | | -1,206 |
| Std. Error of Skewness | | 1,225 |

a. Multiple modes exist. The smallest value is shown

The gaming oriented participators

Statistics

ICT_addiction

| | | |
|----------------|---------|-------------------|
| N | Valid | 2 |
| | Missing | 1 |
| Mean | | 4,4167 |
| Median | | 4,4167 |
| Mode | | 3,83 ^a |
| Std. Deviation | | ,82496 |

a. Multiple modes exist. The smallest value is shown

The creative participators

Statistics

ICT_addiction

| | | |
|------------------------|---------|-------------------|
| N | Valid | 7 |
| | Missing | 0 |
| Mean | | 2,9762 |
| Median | | 3,0000 |
| Mode | | 2,00 ^a |
| Std. Deviation | | ,73553 |
| Skewness | | ,084 |
| Std. Error of Skewness | | ,794 |
| Kurtosis | | -1,458 |
| Std. Error of Kurtosis | | 1,587 |
| Minimum | | 2,00 |
| Maximum | | 4,00 |

a. Multiple modes exist. The smallest value is shown

Different questions on all participants

| | | a96.1_ICT_addicti on: I have powerful urge to use ICT all the time | a96.2_ICT_addicti on: Using ICT makes me neglect my schoolwork | a96.3_ICT_addicti on: I get angry when I have to stop using my computer | a96.4_ICT_addicti on: I use ICT to late night when its possible |
|------------------------|---------|---|---|---|--|
| N | Valid | 19 | 19 | 18 | 18 |
| | Missing | 1 | 1 | 2 | 2 |
| Mean | | 4,26 | 3,53 | 2,94 | 4,39 |
| Median | | 4,00 | 4,00 | 2,00 | 4,00 |
| Mode | | 4 | 2 ^a | 2 | 4 |
| Std. Deviation | | 1,695 | 1,504 | 1,626 | 1,883 |
| Skewness | | -,538 | -,056 | ,562 | -,162 |
| Std. Error of Skewness | | ,524 | ,524 | ,536 | ,536 |
| Kurtosis | | -,262 | -1,462 | -1,115 | -,990 |
| Std. Error of Kurtosis | | 1,014 | 1,014 | 1,038 | 1,038 |
| Minimum | | 1 | 1 | 1 | 1 |
| Maximum | | 7 | 6 | 6 | 7 |
| Percentiles | 25 | 3,00 | 2,00 | 2,00 | 2,75 |
| | 50 | 4,00 | 4,00 | 2,00 | 4,00 |
| | 75 | 6,00 | 5,00 | 5,00 | 6,00 |
| | | a96.5_ICT_addiction: I use energy drinks to be able to act longer on computer | a95.6_ICT_addiction: Using ICT is causing problems in my relationships | | |
| N | Valid | 19 | 19 | | |
| | Missing | 1 | 1 | | |
| Mean | | 1,68 | 1,53 | | |
| Median | | 1,00 | 1,00 | | |
| Mode | | 1 | 1 | | |
| Std. Deviation | | 1,493 | 1,124 | | |
| Skewness | | 2,961 | 2,420 | | |
| Std. Error of Skewness | | ,524 | ,524 | | |
| Kurtosis | | 9,405 | 5,390 | | |
| Std. Error of Kurtosis | | 1,014 | 1,014 | | |
| Minimum | | 1 | 1 | | |
| Maximum | | 7 | 5 | | |
| Percentiles | 25 | 1,00 | 1,00 | | |
| | 50 | 1,00 | 1,00 | | |
| | 75 | 2,00 | 2,00 | | |

Gaming oriented participators

a95.6 ICT_addiction: Using ICT is causing problems in my relationships

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------------------|-----------|---------|---------------|--------------------|
| Valid Completely disagree | 1 | 33,3 | 50,0 | 50,0 |
| Valid 2 | 1 | 33,3 | 50,0 | 100,0 |
| Total | 2 | 66,7 | 100,0 | |
| Missing System | 1 | 33,3 | | |
| Total | 3 | 100,0 | | |

Creative participators

a95.6 ICT_addiction: Using ICT is causing problems in my relationships

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------------------|-----------|---------|---------------|--------------------|
| Valid Completely disagree | 4 | 57,1 | 57,1 | 57,1 |
| Valid 2 | 2 | 28,6 | 28,6 | 85,7 |
| Valid 4 | 1 | 14,3 | 14,3 | 100,0 |
| Total | 7 | 100,0 | 100,0 | |

Basic participators

a95.6 ICT_addiction: Using ICT is causing problems in my relationships

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------------------|-----------|---------|---------------|--------------------|
| Valid Completely disagree | 4 | 80,0 | 80,0 | 80,0 |
| Valid Completely agree | 1 | 20,0 | 20,0 | 100,0 |
| Total | 5 | 100,0 | 100,0 | |