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Finnish adolescents' time use: Time spent alone and time spent computing

Minna Ylikännö & Anne-Mari Jaakola
University of Turku

This study examines adolescents' alone time by utilising a Finnish time use survey from 2009-2010. In the public debate, it is feared that young people spend too much time alone in front of computers instead of being socially and physically active. This descriptive study provides answers to questions of how much time 10- to 19-year-old adolescents spend alone and how much time is devoted to computing and other activities. Finnish adolescents spend on average 4 hours and 33 minutes alone per day. Adolescents spending more time alone devote significantly more time to computing and less time to social interaction and sports. Girls spend more time alone, but boys spend more time in computing, which may have more adverse effects on their well-being. More research to better understand the relationship between computing and adolescents' welfare is needed.
Keywords: Time use, adolescence, screen time, computing, time use research, time-diary data

Introduction

In this descriptive study, Finnish adolescents' time spent alone and time spent on computing is examined. The present study will provide new knowledge on a very important topic which has been little studied. Adolescents' time use and especially screen time has received little attention in the sociological research, although research on families' and parents' time use is quite well established (see e.g. Ylikännö, Pääkkönen, & Hakovirta, 2014; Craig & Mullan, 2011; Crosnoe & Trinitapoli, 2008; Craig, 2006; Gauthier, Smeeding, & Furstenberg, 2004; for adolescents' time use, see e.g. Pääkkönen, 2005). Adolescents are the first to adapt to the modern computerised world, and therefore, research on time use and more specifically on time spent in front of a computer is needed.

Adolescents' loneliness is a current issue in Finland (see e.g. Junttila, 2015). Increased loneliness and social withdrawal are seen threats to adolescents' well-being and development, not only in Finland but also in other modern societies (Rönkä, Rautio, Koiranen, Sunnari, & Taanila, 2014; Sharabi, Levi, & Margalit, 2012; Ruiz-Casares, 2012; Junttila, Laakkonen, Niemi, & Ranta, 2008). Withdrawal from social relationships is often linked to increased screen time. Adolescents' time spent on computing per day is rapidly increasing and in Finland, for example, between 2000 and 2010, computing time among adolescents doubled to well over an hour each day (Pääkkönen & Hanifi, 2012; see also Hanifi, 2015; Repo & Nätti, 2015).

Minna Ylikännö, PhD, works as a University Lecturer and Anne-Mari Jaakola, M.soc. sci., works as a University Teacher at the Department of Social Research, University of Turku. Contact: Minna Ylikännö, tel. 35823338896, email: minna.ylikanno@utu.fi and Anne-Mari Jaakola, tel. 35823335643, anne-mari.jaakola@utu.fi.

When a child grows up, the developmental transition from childhood to adulthood affects time use, so the child will become independent in relation to the parents and will need both more social peer relationships and more functional stimuli outside the family (Larson, 1990; Larson & Lowe, 1990). More time is spent with friends, and solitary time also increases. Alongside this developmental transition, however, Finnish time use surveys show that there is also a temporal change in the alone time; time spent alone has increased significantly among adolescents since the end of the 1980s (Miettinen & Rotkirch, 2012; Österbacka & Mattila-Wiro, 2009).

To what extent alone time has increased due to increased screen time and, furthermore, to what extent this is a cause for concern is under debate. Some studies suggest that social media may enable the activeness, participation and sociality of adolescents in a new way (Stepanikova, Nie, & He, 2010), while others find that massive amounts of screen time impoverish social skills and even increase social fears and emotional isolation in young people (Sigman, 2012; Bonetti, 2010; Hardie & Tee, 2007), thus increasing the experience of loneliness. Social withdrawal and emotional isolation have been particularly linked to the problematic use of computer gaming (Scharkow, Festl, & Quandt, 2014). Hence, it may be that different forms of computer use have different kinds of implications with respect to adolescents' social skills and social participation.

As regards time use, increased screen time has been found to reduce physical activity as well as sleep time (Miettinen & Rotkirch, 2012; Tynjälä & Kannas, 2004; Van der Bulck, 2004). Van den Bulck's (2004) study shows that children get significantly less sleep if they have a television or a computer in their room. A study by Olds, Ferrar, Gomersall, Maher, & Walters (2012) shows a significant decrease in time spent on physical activity and an increase in obesity amongst adolescents as time spent on computers increases (see also Ferrar,

Olds, & Maher, 2013; Subrahmanyam, Kraut, Greenfield, & Gross, 2000). Furthermore, a study by Dworak, Schierl, Bruns, & Strüder (2007) shows that television watching and computer gaming amongst adolescents are negatively associated with how much reading these adolescents do.

Conceptually, the concept of alone time differs from the concepts of loneliness and being alone. It does not necessarily include an emotional and subjective experience coming from social withdrawal or dissatisfaction with social relationships, as is found in the concepts of loneliness and being alone (Russell, Cutrona, McRae, & Gomez, 2012; Ruiz-Casares, 2012; Junttila & Vauras, 2009; Weiss, 1973). While social media may enable the activeness, participation and sociality of adolescents in a new way (see e.g. Stepanikova et al. 2010), time spent alone does not necessarily mean loneliness or social exclusion.

This study sheds light on adolescents' time use, focusing on their time spent alone as well as their time spent computing. Investigating the time use of adolescents will open up one perspective on the construction of their social reality. As part of that, the present article discusses the risks and opportunities that can be linked to adolescents' time spent alone and to solitude, from the perspective of time use.

Data and methods

Data used in this study derives from the Finnish Time Use Survey (FTUS) 2009–2010. It is a time-diary survey conducted by Statistics Finland, consisting of 7,480 diary days kept by 3,795 individuals in Finnish households. The data includes information regarding the daily activities of the respondents, where the respondents have been and with whom they have been while performing these activities (Pääkkönen & Hanifi, 2012.)

We restrict the data to respondents from the ages of 10 to 19 who live either in a single-parent or two-parent household and whose main activity is reported as being a pupil/student. Data is also restricted to those days reported to be normal schooldays, weekend days or holidays. Hence, for example, sick days are excluded from the study. The final sample consists of 649 adolescents, of whom 334 (52 %) are boys and 315 (48 %) are girls.

For the descriptive analysis, we divide the adolescents into two groups, "Less Alone" and "More Alone", based on the median time adolescents spend alone per day (4 h 10 min). By naming the groups this way, we do not imply that the adolescents in our study would necessarily be lonely. In the time use research, time spent alone refers to time that has been spent without any other persons being physically present. Therefore, when analysing the time spent alone, we do not know whether, for example, the adolescent is chatting online with someone. The activity itself may hence not be solitary, even though it is performed alone.

The FTUS includes 146 time use categories. These categories can be merged into aggregate level categories such as paid work or housework. Since we are especially interested in the time spent computing (not all forms of screen time), this category will be described to a more accurate degree than the other time use activities. The FTUS includes six categories for computing: programming, information search, instant messaging, other messaging, gaming and other non-specified computer use. The results for time use are reported in minutes per day.

Results

Finnish adolescents spend on average 4 hours and 33 minutes alone per day (Table 1). That is half an hour more than a decade earlier and one hour and twenty minutes more than twenty years earlier (Österbacka, 2010, p. 181). Girls spend somewhat more time alone per day than boys. For girls, the average alone time is 4 hours and 38 minutes, and for boys, 4 hours and 29 minutes. However, "More Alone" boys spend on average significantly more time alone than "More Alone" girls.

The time spent alone increases with age (Table 1). Additional analyses (not presented in the Table 1) show that a 10-year-old Finnish adolescent spends on average 2 hours and 58 minutes and a 19-year-old adolescent 7 hours 16 minutes alone per day. The difference is huge, emphasising the developmental transition that adolescents go through in their teens (see Larson, 1990; Larson & Lowe, 1990).

"More Alone" adolescents spend significantly less time in sleeping or pursuing hobbies, in social interaction outside the home or in sports/physical training than do "Less Alone" adolescents (Table 2). "More Alone" adolescents spend more time on homework, reading and computing than do "Less Alone" adolescents. Hence, the "More Alone" adolescents are less physically and socially active in their leisure time, and instead of being socially active, for example, in pursuing hobbies, they spend a lot of time in reading books, doing homework and computing.

As regards gender, time spent attending school classes varies between boys and girls. This is an interesting result, but it cannot be exhaustively explained with the information available in the data. It may be, for example, that there is a difference in accuracy between boys' and girls' diary entries. Gender also matters in that "More Alone" boys spend less time at school than "Less Alone" boys (although the difference is not significant), whereas the opposite holds true for girls (Table 2). In other words, girls tend to be more social and boys more alone outside of school, as regards their time use.

The most dramatic gender difference between "Less Alone" and "More Alone" groups concerns the time spent on computing (Table 2). "More Alone" boys spend almost three hours per day on computing, which is almost two hours more than "Less Alone" boys. Among girls, the time spent on computing doesn't vary as dramatically according to the time spent alone. "More Alone" girls spend on average one and a half hours daily in computing, which is half an hour more than "Less Alone" girls.

The same kind of gender difference as in computing can be seen in time used in sports (Table 2). Both "More Alone" boys and girls spend significantly less time in physical activities than "Less Alone" adolescents. However, the dif-

Table 1
Data description

	All	"Less Alone"	"More Alone"
n	649	344	306
All, %	100.0	52.9	47.1
Boys, %	51.5	56.8	43.2
Girls, %	48.5	48.9	51.1
Age, mean	13.9	13.3	14.6
Average time spent alone, min/day	273	137	426
Average time spent alone by boys, min/day	269	132	449
Average time spent alone by girls, min/day	278	143	407
Median time spent alone, min/day	250	150	400

Source: FTUS 2009-2010.

Table 2
Time use of Finnish adolescents by alone time group and gender (min/day)

	Sleep	Attending school classes	Homework	Domestic work	Hobbies	Social interaction at home	Social interaction outside home	Computing
All								
"Less Alone"	580	160	14	45	71	13	58	75
"More Alone"	556	168	35	52	48	9	37	135
Boys								
"Less Alone"	572	190	15	32	65	10	55	88
"More Alone"	561	171	28	36	47	5	29	177
Girls								
"Less Alone"	591	123	13	62	77	16	62	58
"More Alone"	550	166	41	66	48	12	45	97

Source: FTUS 2009-2010.

ference is greater between "Less Alone" and "More Alone" boys than between "Less Alone" and "More Alone" girls. In the public debate, attention is paid to adolescents' obesity and their too low levels of physical activity (see e.g. Elgar et al., 2015). But according to our results, this does not apply equally to all adolescents. Boys who spend less time alone spend less time in front of the computer and more time in social activities, and are also physically active.

While computing, most time is spent on playing computer games and unspecified activities such as watching videos and listening to music. "Less Alone" adolescents use 33 minutes in gaming, and "More Alone" adolescents, 42 minutes per day (Figure 1). Between the two groups, there is significant variation in the time spent on programming/information search and in messaging. Regarding the former, it can be at least partly explained by the fact that the "More Alone" adolescents use more time in homework per day (Table 1). Messaging probably replaces some of the social activity that "More Alone" adolescents spend less time in.

Again, the differences in computing time between "Less Alone" and "More Alone" groups are more apparent among boys than among girls. "More Alone" boys use significantly more time in programming and information search, instant messaging and in especially in gaming than do "Less Alone" boys (Figure 1). Among girls, significant variation exists only in non-specified computer use; "More Alone" girls use significantly more time in these forms of computing than do "Less Alone" girls. These activities, which include watching videos and listening to music, are of course an equal way of using the computer and hence should not be left unnoticed when discussing the possible negative or positive implications of increased screen time.

Discussion

On a daily basis, Finnish adolescents spend on average over four hours alone. However, there is huge variation in the alone time, especially between the youngest and oldest adolescents. This result is in line with the earlier research on developmental transition; when growing up, adolescents need to spend more time with friends and to create an independent relationship with their parents (Larson, 1990; Larson & Lowe, 1990).

Today's worries in Finland and in other modern computerised countries relate to the increased alone time of adolescents and, alongside that, the increased screen time and time spent in front of a computer. According to our results, adolescents who spend more time alone also spend significantly more time in computing. This phenomenon is more apparent among boys than girls; "More Alone" boys spend on average three hours in computing every day. At the same time, their "Less Alone" peers spend more time in social activities, hobbies and sports. On the other hand, "More Alone" adolescents spend more time in reading books and in doing homework than do "Less Alone" adolescents, and hence, to

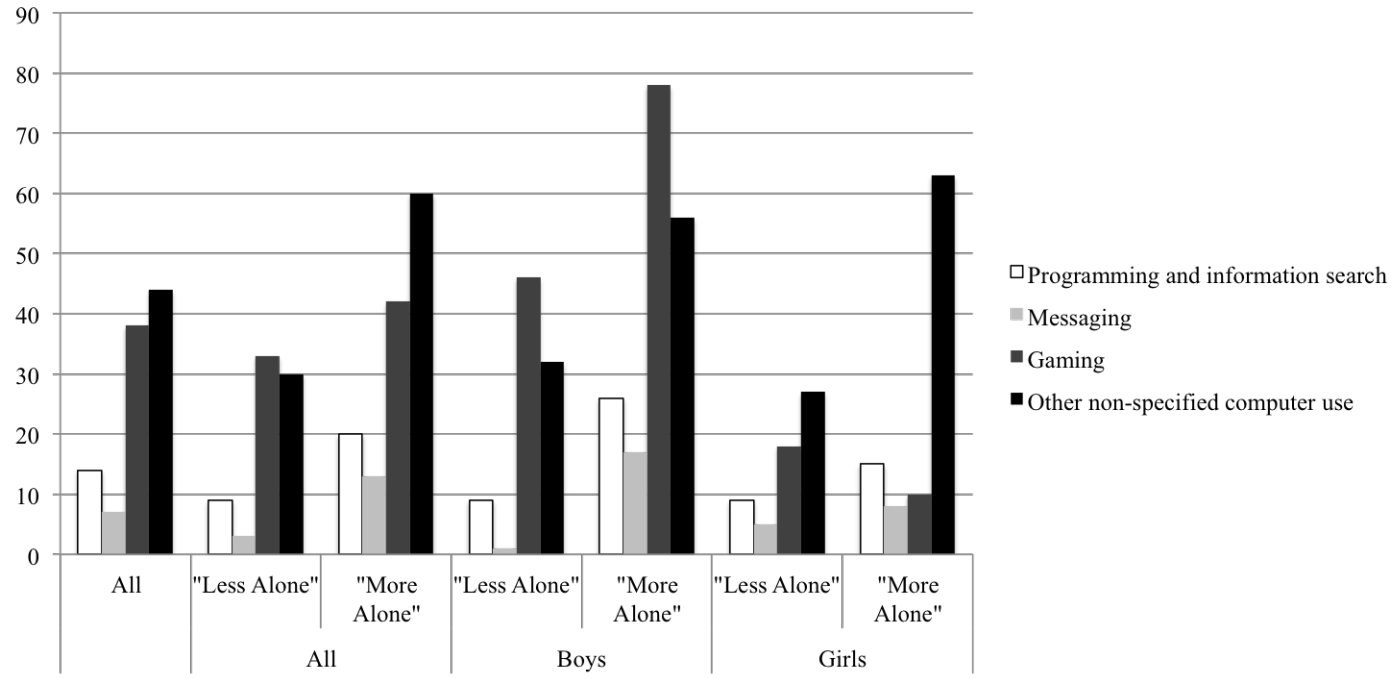

Figure 1. Time used in computing by alone time group and by form of computer use (min/day). *Source: FTUS 2009-2010.*

some extent, increased time in computing is linked to intellectual activities.

When in front of the computer, adolescent boys play games more often, while girls listen to music, watch videos and use the computer for other unspecified activities. This is especially true for those adolescents spending a lot of time alone on a daily basis. ”More Alone” boys and girls use also more time in messaging than do their ”Less Alone” peers. It has been argued that social media may enable the activeness, participation and sociality of adolescents in a new way (Stepanikova et al., 2010), but if most of the computing time is used for something other than keeping in contact with friends or others, for example, in gaming, we may witness an increasing experiences of loneliness in the future (see e.g. Scharkow et al., 2014; Sigman, 2012; Bonetti, 2010; Hardie & Tee, 2007).

We cannot therefore conclude that adolescents spending more time alone will automatically be lonely. Adolescents spending more time alone in their rooms, for example, doing homework and computing, may well be socially active through the Internet and various social media. This is something that should definitely be studied further. With the coming of computers and the Internet, our time use has changed dramatically. Computers connected to global networks offer a variety of possibilities in using leisure time: shopping, watching movies and videos, listening to music, reading books and newspapers, visiting blogs and messaging with friends, to mention just a few.

With the current time use data (FTUS), we cannot identify the reasons why Finnish adolescents end up spending time alone. They may consider it the most preferable way of spending time without feeling lonely or shut out from social networks. On the other hand, for some adolescents, time spent alone may be a get-away from the reality of bullying and name-calling. Therefore, in the future, we need more detailed data on the adolescents' time use, including information on the meaningfulness of this time use. In this article, we were able to scratch the surface of what is involved in the computer use of adolescents. Technological development poses great challenges unless we are aware of how today's adolescents and future generations of youth construct their social reality. Categorically denying the use of computers to the adolescents would not solve the potential problems linked to the increased screen time.

References

Bonetti, L., Campbell, M. A., & Gilmore, L. (2010). The relationship of loneliness and social anxiety with children's and adolescents' online communication. *Cyberpsychology, Behavior, and Social Networking*, *13*, 279–285.

Craig, L. (2006). Does father care mean fathers share? A comparison of how mothers and fathers in intact families spend time with children. *Gender & Society*, *20*, 259–281.

Craig, L., & Mullan, K. (2011). Shared parent–child leisure time in four countries. *Leisure Studies*, *31*, 211–229. doi: 10.1080/02614367.2011.573570

Crosnoe, R., & Trinitapoli, J. (2008). Shared family activities and the transition from childhood into adolescence. *Journal of Research on Adolescence*, *18*, 23–48.

Dworak, M., Schierl, T., Bruns, T., & Strüder, H. K. (2007). Impact of singular excessive computer game and television exposure on

sleep patterns and memory performance of school-aged children. *Pediatrics*, *120*, 978–985.

Elgar, F. J., Pförtner, T.-K., Moor, I., De Clercq, B., Stevens, G. W., & Currie, C. (2015). Socioeconomic inequalities in adolescent health 2002–2010: A time-series analysis of 34 countries participating in the Health Behaviour in School-aged Children study. *The Lancet*, *385*, 23–29.

Ferrar, K., Olds, T., Maher, C., & Maddison, R. (2013). Time use clusters of New Zealand adolescents are associated with weight status, diet and ethnicity. *Australian and New Zealand Journal of Public Health*, *37*, 39–46.

Gauthier, A. H., Smeeding, T. M., & Furstenberg, F. F. (2004). Are parents investing less time in children? Trends in selected industrialized countries. *Population and Development Review*, *30*, 647–672.

Hanifi, R. (2015). Yksin oleminen on lisääntynyt (Alone time has increased). In A.-H. Anttila, T. Anttila, M. Liikkanen, & H. Pääkkönen (Eds.), *Ajassa kiinni ja irrallaan. Yhteisölliset rytmit 2000-luvun Suomessa* (pp. 123–134). Helsinki: Tilastokeskus.

Hardie, E., & Tee, M. Y. (2007). Excessive internet use: The role of personality, loneliness and social support networks in Internet addiction. *Australian Journal of Emerging Technologies and Society*, *5*, 34–47.

Junttila, N. (2015). *Kavereita nolla: Lasten ja nuorten yksinäisyys (Zero friends. The loneliness of children and adolescent)*. Helsinki: Tammi.

Junttila, N., Laakkonen, E., Niemi, P., & Ranta, K. (2008). Modeling the interrelations of adolescent loneliness, social anxiety and social phobia. *Scientific Annals of the Psychological Society of Northern Greece*, *8*.

Junttila, N., & Vauras, M. (2009). Loneliness among school-aged children and their parents. *Scandinavian Journal of Psychology*, *50*, 211–219.

Larson, J. H., & Lowe, W. (1990). Family cohesion and personal space in families with adolescents. *Journal of Family Issues*, *11*, 101–108.

Larson, R. W. (1990). The solitary side of life: An examination of the time people spend alone from childhood to old age. *Developmental Review*, *10*, 155–183.

Miettinen, A., & Rotkirch, A. (2012). *Yhteistä aikaa etsimässä. Lapsiperheiden ajankäyttö 2000-luvulla (Searching for common time. The time use of families in the 2000s)*. Helsinki: Väestöliitto.

Olds, T., Ferrar, K. E., Gomersall, S. R., Maher, C., & Walters, J. L. (2012). The elasticity of time: Associations between physical activity and use of time in adolescents. *Health Education & Behavior*, *39*, 732–736.

Pääkkönen, H. (2005). What do schoolchildren in Finland do with their time? *Society and Leisure*, *28*, 425–442.

Pääkkönen, H., & Hanifi, R. (2012). *Time use changes in Finland through the 2000s*. Helsinki: Statistics Finland.

Repo, K., & Nätti, J. (2015). Televisio ja tietokone nuorten ajankäytön rytmittäjänä (Television and computing rhythm the life of children and adolescents). In A.-H. Anttila, T. Anttila, M. Liikkanen, & H. Pääkkönen (Eds.), *Ajassa kiinni ja irrallaan. Yhteisölliset rytmit 2000-luvun Suomessa* (pp. 135–154). Helsinki: Tilastokeskus.

Ruiz-Casares, M. (2012). "When it's just me at home, it hits me that I'm completely alone": An online survey of adolescents in self-care. *The Journal of Psychology*, *146*, 135–153.

Russell, D. W., Cutrona, C. E., McRae, C., & Gomez, M. (2012). Is loneliness the same as being alone? *The Journal of Psychology*, *146*, 7–22.

Rönkä, A. R., Rautio, A., Koiranen, M., Sunnari, V., & Taanila, A. (2014). Experience of loneliness among adolescent girls and boys: Northern Finland Birth Cohort 1986 study. *Journal of Youth Studies*, *17*, 183–203.

Scharkow, M., Festl, R., & Quandt, T. (2014). Longitudinal patterns of problematic computer game use among adolescents and adults—A 2-year panel study. *Addiction*, *109*, 1910–1917.

Sharabi, A., Levi, U., & Margalit, M. (2012). Children's loneliness, sense of coherence, family climate, and hope: Developmental risk and protective factors. *The Journal of Psychology*, *146*, 61–83.

Sigman, A. (2012). Time for a view on screen time. *Archives of disease in childhood*, *97*, 935–942.

Stepanikova, I., Nie, N. H., & He, X. (2010). Time on the internet at home, loneliness, and life satisfaction: Evidence from panel time-diary data. *Computers in Human Behavior*, *26*, 329–338.

Subrahmanyam, K., Kraut, R. E., Greenfield, P. M., & Gross, E. F. (2000). The impact of home computer use on children's activities and development. *Future of Children*, *10*, 123–144.

Tynjälä, J., & Kannas, L. (2004). Koululaisten nukkumistottumukset, unen laatu ja väsyneisyys vuosina 1984–2002. In L. Kannas (Ed.), *Koululaisten terveys ja terveyskäyttäytyminen muutoksessa (The health and health behaviour of school children in transition)* (pp. 141–178). Jyväskylä: Jyväskylän yliopisto.

Van den Bulck, J. (2004). Television viewing, computer game playing, and internet use and self-reported time to bed and time out of bed in secondary-school children. *Sleep*, *27*, 101–104.

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

Ylikännö, M., Pääkkönen, H., & Hakovirta, M. (2014). Time use of Finnish fathers–Do institutions matter? In G. Eydal & T. Rostgaard (Eds.), *Fatherhood in the Nordic Welfare States. Comparing Care Policies and Practice* (pp. 103–119). Bristol: Policy Press.

Österbacka, E. (2010). Familjers tidsanvändning – Fokus på barn och unga. In U. Hämäläinen & O. Kangas (Eds.), *Perhepiirissä* (pp. 170–194). Helsinki: Kela.

Österbacka, E., & Mattila-Wiro, P. (2009). *Child perspectives on income and time use in Finnish families in the 1990s*. Helsinki: Kela.