

IT/MEDIA USE AND PSYCHOLOGICAL DEVELOPMENT AMONG DUTCH YOUTH

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ABSTRACT

This article describes Dutch adolescents' media time use – reading, radio, TV and computer/ Internet -- and how this media/IT use is related to their maturation. Four domains of development are distinguished: 1) cognitive, focusing on educational achievement; 2) socio-moral, which looks at the quality of their social networks (especially with parents and peers) and externalizing problems (e.g. fighting, stealing); 3) emotional, with the focus on internalizing problems (happiness, loneliness); and 4) physical (perceived health, health-endangering behavior). In a national sample of 9782 Dutch youth aged 12-18 interviewed in the Winter of 2001-02, only slight correlations were found between media/IT use on the one hand, and developmental state on the other. There were some intriguing relations, however, between IT use and mass media use.

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That the advent of new media in society has social consequences is rarely supported by empirical evidence. In leading countries like the US, the Scandinavian countries and the Netherlands, Internet penetration has recently passed the point where half of the population is connected, and young people are among the heaviest users of the Internet during leisure time and score highly on digital skills. Although teenagers were too young to be early adopters of PCs, this study of their media use sheds light on the way Internet may be changing their lives and possibly those of other age groups.

The mass media can be regarded as a socializing agency in addition to the family and education (McQuail 2000; Wright 1986). A considerable share of the knowledge that children, like adults, have about the world around them stems wholly or partly from the media. This concerns not just factual information but also norms and values that emerge from the behavior of fictional characters on the screen or in books. The media have invariably been a source of ambivalence for parents and professional educators. Media can be very instructive, but they can also entail risks. Since the advent of the mass media, there has been concern about the possible harm that media messages can exert on child development, about newspapers and radio (Katz and Lazarsfeld 1955), film and television (Van der Voort 1997) and more recently about computer games, following youth shooting incidents in the US and Germany.

The same ambivalence applies to the purchase of PCs. Parents generally want the best for their children and regard computers as a useful way of supporting their children's performance at school and possibly also as helpful for their children's opportunities in the labor market. Children might even find themselves at a disadvantage in relation to others in later life by not having had a computer at home. Four out of every five parents consider that a home computer is good for children's educational achievement (Tapscott 1998: 22). Parents are also buying more and more CD-ROMs for their children (Van Petegem 1999). Apart from the assumed benefits, however, parents also fear the negative influence of exposure to undesired content (porn and violence) and of the competition in time use with other matters considered to be more important (see Valkenburg 1997).

Which media activities have an influence on the development of young people? To answer this question, the term 'developmental state' includes a variety of developmental areas (cognitive, emotional and socio-moral development) at a specific moment in time. Based on developmental psychology, several indicators have been selected from Zeijl (2003). These include the quality of relationships with parents and peers, exhibiting criminal behavior, use of drugs and alcohol, and having emotional problems. Research on the 'yield' of media activities from a media comparative perspective is sparse. This contribution to the debate must be viewed as a first and modest exploration, because the question of the relationship between media/IT use and development is particularly complex.

Lacking panel data to establish causal effects, the Dutch National Pupil Study (NSO) mail survey was carried out in the Netherlands in the winter of 2001/2002 among secondary school students. The nationally representative survey had a response of 44% and 9782 completed questionnaires, weighted by a number of variables to match Census data by region, school denomination, type of school and grade – based on information from Statistics Netherlands.

The next section describes the place the media occupy in the everyday lives of young people, on the basis of trends (1990-2000) in access to the media at home, and the use that is made of them mainly by young people aged 12-18. The following section then examines empirical relationships between media use and the cognitive, emotional and socio-moral development of children, taking account of differences in their backgrounds. It is assumed that the media play an important role in this formation of identity and personal development.

MEDIA AND IT IN THE LIVES OF YOUNG PEOPLE

Television has been an established part of the households in which children grow up for a number of decades. During the 1990s, it was increasingly common for children to be in a home with two or more television sets (Table 1). More sets had teletext and were linked to a video recorder. All these developments facilitate more individual viewing behavior, as people are increasingly in a position to watch programs at a time of their own choosing. During the same period the CD player also became established in households of people who had initially been hesitant. The result was that by the end of the 1990s the record player had given way almost universally to the CD player.

As noted, families with children were ahead of other households in the distribution of the PC (Van Dijk et al. 2000). In 1995 over two-thirds of families with children already had a home computer and that share rose to 86% in 2000. The advent of the World Wide Web has particularly increased the ability to obtain information and communicate with others. During the same period, however, the possibilities for obtaining information at home via printed media declined for young people, in particular the sharp fall in the percentage of households with a daily newspaper delivery in Table 1. The library membership of young people also declined, as the borrowing of books for personal use fell between 1995 and 1999 from 73% to 68%; among 6-11-year-olds, however, there was a slight increase from 81% to 83%. Nevertheless, Table 1 documents how audiovisual media and IT gained ground during the 1990s, while newspapers and library membership lost ground.

The leisure behavior of young people is affected not just by education but also to a marked degree by their family circumstances. At higher socio-economic levels there is often more equipment and generally also more expensive and versatile appliances. Families with one or both parents in the highest education category turn out to be somewhat less television-minded and more reading-minded than the secondary education groups. Subscription to a newspaper is

**TABLE 1 MEDIA EQUIPMENT IN HO USEHOLDS WITH CHILDREN (0-18 YEARS), 1990-2000
(IN PERCENTAGES)**

	1990	1995	2000
Two or more TVs	47%	62%	67%
Teletext	48	80	96
Video	64	86	94
CD player	54	93	90
Newspaper	73	70	62
Library member ^a	88	92	82
PC	41	68	86

^a Person-based, i.e. percentages for the group of young people (aged 12-18) who were themselves respondents in the survey.

Source: Social and Cultural Planning Office (Time Use Survey)

more than three times as common in households where at least one of the parents has university level education than in households where the parents have completed no more than primary education. Also notable is the large difference in PC ownership between households with parents having no more than primary education and other households, although 72% of low education households indicated in 2000 that they had a home computer. Education differences are, however, still found in the ownership of expensive laptops.

Media use: Young Dutch people therefore grow up in households in which they have extensive possibilities for using the available media. Equal opportunity does not lead to equal use, since teenagers do *estimate* that they watch much more television (15 hours per week) than primary schoolchildren (12 hours) or toddlers and infants (6 hours). However, a study of the programming on Dutch television aimed at children up to the age of 12 has indicated that the range of programs aimed at children increased remarkably between 1989 and 2001 with the advent of commercial channels (Nikken 2003). Whereas the public broadcasting organizations transmitted a total of nearly three hours a day of programs aimed specifically at this age group on their three channels in 1989, in 2001 the three public and eight commercial channels with a national reach together supplied about 40 hours of children's programs per day.

In order to compare television viewing with other media use, Dutch Time Use Survey (TUS) data have also been used (see also De Haan and Huysmans 2002b) for persons aged 12 and over. Table 2 shows substantial shifts have in fact taken place in the television viewing of young people. Following an increase in viewing time in the first half of the 1990s, viewing time fell sharply in the second half. The time spent on reading books fell by half during the first half of the decade between 1990 and 1995, stabilizing thereafter. The reading of newspapers and magazines fell to a lesser extent.

Against the fall in the use of traditional media, there has been an increase in the time spent at the computer, mainly accounted for by boys.

TABLE 2 TIME SPENT ON MEDIA AND ICT USE AS A PRIMARY ACTIVITY BY DUTCH YOUTH (12-18 YEARS), 1990-2000 (IN MINUTES PER DAY)

	Watching TV/video			Listening radio/audio			Reading books			Reading newspapers			Reading magazines			Using the computer			Internet 2000
	90	95	00	90	95	00	90	95	00	90	95	00	90	95	00	90	95	00	
Minutes per day	106	115	92	15	11	11	14	6	6	3	2	1	6	6	4	8	18	25	6

Source: Social and Cultural Planning Office (Time Use Survey)

Although the number of girls using the computer approaches that of boys, the latter still spent three times as long at a PC in 2000 as girls. The obvious conclusion is that the growth in computer time has been at the expense of television viewing. The latter undeniably fell heavily in the second half of the 1990s, but even more among girls than among boys. The fall of half an hour a day among girls is also much greater than the additional six minutes they devoted to the computer between 1995 and 2000. A comparable development may be seen if we compare 12-15-year-olds with 16-18-year-olds. Among the first group computer use rose relatively sharply, whereas the latter reduced their television viewing. There is therefore no question of any clear-cut substitution mechanism between computer use and television viewing.

Boys on average spend three times as long at the computer offline as girls, but girls take the lead in Internet use. The same pattern, but somewhat less pronounced, applies to the age groups: 12-15-year-olds spend more time at the PC off-line, but somewhat less on online use. This differs for own level of education and that of the parents, where the better educated consistently use the PC more both offline and online.

Competition between media: The total media use of 12-18-year-olds amounted in 1990 to 17.8 hours per week, rising in 1995 to 18.5 hours, and then falling in 2000 to 17.1 hours. More interesting than the total use of all media combined are the shifts within that use. During the period 1995-2000 the Internet emerged as a form of leisure activity in the home and PCs also became more established. In the time-use survey only one activity can be designated as the principal activity every 15 minutes. Although it is often claimed that young people are adept at multitasking -- the simultaneous performance of various tasks (such as the combination of listening to music, conducting a chat session and doing homework) -- such combinations of activities are not often encountered in the time-use survey. Only listening to the radio or sound-recording media lends itself to combination with reading (an average of two minutes per day in 2000) and computer and Internet use (3.5 min). Watching television, reading printed media and using the computer/Internet are not readily combined and therefore compete with one another for young people's

TABLE 3 CORRELATIONS BETWEEN VIEWING TELEVISION/VIDEO, LISTENING TO RADIO/AUDIO, READING PRINTED MATTER, USING A COMPUTER AND THE INTERNET, YOUNG PEOPLE AGED 12-18, 2000

	TV/video	Radio/audio	Print media	Computer
Radio and audio	-0.02			
Printed media	0.02	-0.01		
Computer and Internet	-0.10	-0.14	0.08	
Computer	-0.01	-0.12	-0.04	
Internet	-0.24 *	-0.05	0.31 ***	-0.17 *

Significance: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Source: Social and Cultural Planning Office (Time Use Survey)

leisure time.

The cross-correlations in media use as principal activities are examined in Table 3, where negative correlations point to competition between those media (although it is also possible that the correlation can be attributed to a third factor). Many of the correlations in Table 3 are indeed negative, but they are seldom significant. Notably, there is no correlation between computer time and viewing time. Only if Internet use is examined separately is there a correlation: young people who use the Internet heavily watch less television and fewer videos. Internet use also divides young people in another respect, namely that Internet-using young people not only watch less television but also read more printed media. The significant correlations in Table 3 become only a little smaller, and remain significant, after controls for sex, age, own level of education and parents' education, ethnicity and ownership of a home computer. Given the negative correlation between using the Internet and viewing television and the positive correlation between using the Internet and reading, printed media, a negative correlation might be expected between reading and viewing television. This correlation turns out not to exist, with the explanation lying in the divergent use-patterns among Internet-users and nonusers. The former read print media more widely and watch less television than nonusers.

On this basis one might expect a negative correlation between reading and viewing, but this expectation is not borne out because within the (larger) group of non-Internet-users, those who both read and view spend more time in front of the TV than those who do not read. Within this group, there is therefore no competition between viewing and reading.

Computer skills: While nearly all young people have access to a computer at home, not all of them also have access to the Internet, nor the capability to use IT. Digital skills may be important in the information society for young people's development. Generally, secondary school pupils rate their skills highly, and these skills have increased in recent years, particularly their Internet skills (including email) but also (by their own estimation) in dealing with word

processors or drawing programs (De Haan and Huysmans 2002a). In general, pupils from the higher types of school say that they are more skilled than those from the lower types of school, and boys and indigenous persons regard themselves as more skilled than girls or immigrants. The home situation also emerges clearly in relation to the differences in digital skills: young people with well-educated parents state that they are more skilled than young people with poorly educated parents.

Thus, in summary, children of poorly educated parents lag behind as regards home computer ownership and access at home to a newspaper. Virtually all young people watch television, while the reading of printed media and listening to radio and audio systems is declining and computer and Internet use is clearly increasing. Time spent watching television appears to be suffering competition from the Internet in this age group. Internet use is coupled with greater reading, and reading is not experiencing competition from television viewing. The socio-economic status of the household in which young people grow up, expressed in the level of education attained by the parents, turns out to be correlated with differences in listening to radio and audio systems and computer and Internet use. No consistent differences between status groups were found for television and printed media. The question that arises now concerns the consequences that these media-use patterns could have for the development of young people.

MEDIA USE AND IT USE AND THE DEVELOPMENTAL MEASURES

Through competition for scarce time or by the direct influence of media content itself, the media can exert an influence on the development of young people. They can inspire them to take up activities that may be either desired or not by their parents. An important element of youth policy with respect to the media is the realization that the media also convey high-quality information and can support young people in their general development.

In the past the exposure of young people to certain kinds of literature was also a source of concern. In the United States the concern extends to listening to audio CDs with 'explicit lyrics', which bear a warning label. While educators concede that children can learn things from activities such as watching television, they also fear that this is at the expense of their creativity, performance at school and concentration that can give rise to undesirable behavior, such as the use of bad language, violence and drugs. In more general terms parents are concerned about cognitive, emotional and behavioral effects assumed to be traceable to television viewing (Van der Voort 1997). This fear is not unfounded. Dealing with media messages requires mental structures and skills with which new information can be interpreted. Becoming an adult is a process in which experience (both media and non-media experience), an active application of previously developed skills and mental maturing play a role (Potter 2001: 16-33; cf. also Knulst 1995: 26). If those structures and skills are

(still) lacking, 'explicit' media messages with violence, sex, bad language and the like can exert a damaging effect on the psyche: things that are 'wrong' are regarded as 'good' or at least normal.

There is also concern about commercial media utterances. On the one hand, much of what children and young people derive from advertising and sponsored programs falls for their parents into the 'innocent' category. Soap operas, pop stations and boys' and girls' magazines provide young people with templates for their attitudes towards and interaction with peers, for the way they want to dress and for the lifestyle they wish to adopt. Where, however, these templates are regarded by children as imperative, problems may arise for the parents. Children aged between (roughly) 2 and 8, for example, do not yet have the critical capacity to draw a distinction between a television program and a commercial and accept the commercial information at face value. Since these children have not yet developed strategies for deferring their wants, this can often lead to conflicts with their parents when out shopping (70% of parents with children aged five report having clashed with their child when they refused to buy a product that the child wanted (Valkenburg 1999)). Commercial utterances (advertising, program sponsorship, teleshopping) can therefore tempt the still uncritical youthful consumers to buy certain products or services, or at least to covet them, which their parents generally regard as undesirable.

In order to indicate the relationship between leisure activities and the development of young people, four developmental areas are distinguished in this regard: cognitive, emotional, socio-moral and physical development. The media are able to exert both positive and negative influence in all these areas, although not always in the long term (see Potter 2001: p. 262-264).

1) *Cognitive* development concerns the acquisition of knowledge and the skills to make associations. This is measured by the performance of school tasks (school results -- self-reported -- of language (Dutch and English) and arithmetic. Depending on its content, media use may or may not contribute to knowledge and skills.

2) *Emotional* development concerns psychological well-being and internalized problem behavior (reported emotional problems). This concerns such matters as negative self-image, fear of failure and feelings of loneliness and depression.

3) *Socio-moral* development emphasizes externalizing problem behavior (fighting, stealing and vandalism) and on the quality of social networks (relationships with parents and peers). Young people talk regularly with their parents (generally their mother) about media use, but in the case of the interactive media they talk more commonly with their father (Beentjes et al. 1999).

4) *Physical* development relates to the bodily health of young people: their estimation of their own health and health-endangering behavior (smoking, drinking and drug use).

A total of 58 items were used to measure of the four aspects of developmental state, with Cronbach's alphas for the four ranging from .77 to .87.

It should be noted that the analyses reported below are general in nature. The Pupils Survey (NSO) asks only about the time spent on reading, watching television and using the computer. These activities have not been broken down by the type of content that commands interest. It goes without saying that there could be various links between developmental state on the one hand and, on the other, watching action films and playing violent computer games -- or alternatively watching educational programs and taking part in discussion groups. For this reason, there is little merit in seeking to theorize on possible links between media and IT use with each of the developmental areas noted. The analyses only examine the sum total of positive and negative associations. In addition, these data do not, for example, establish whether poor performance at school is due to heavy television viewing, or if demotivation connected to poor reports results in high levels of viewing. What is known is that in many cases both media habits and development are affected by other characteristics of young people or by their environment.

For this reason, the analysis has adjusted for a number of characteristics that could cut across the association. Table 4 sets out the *controlled* correlations between media use and various forms of development. The media use is concerned with time use, not with the kind of programs that young people watch or listen to or the type of reading material they are interested in. Apart from media and IT use, telephone use was also ascertained, making it possible to juxtapose one-way or *receptive* communication behavior (reading and watching television) and more *interactive* computer-use against interactivity. At the end of 2001, 95% of 12-18-year-olds had a mobile telephone (CBS/SCP 2001), although the data do not distinguish mobile from and landline telephone use.

Few of the associations in Table 4 are statistically significant and, where they are, they are weak. After the background characteristics of sex, age, family composition, school level and ethnicity are controlled for, young people who devote a relatively large amount of time to reading generally do better at school, have a better relationship with their parents but a less good one with their peers, and fewer problems with fights, stealing and vandalism. Smoking and drinking are also lower (after control -0.11) and their drug use is lower (after control -0.05).

Television viewing is very weakly correlated with problem behaviors. Among those who watch more television both their internalizing and externalizing problems are somewhat greater. Stealing, vandalism and fights are somewhat more common among heavy viewers; and they also have a rather more negative self-image, greater fear of failure and suffer more nightmares.

TABLE 4 RELATIONSHIP BETWEEN MEDIA AND IT USE AND COGNITIVE, EMOTIONAL AND PHYSICAL DEVELOPMENT, 12-18 YEARS, 2001 (CORRELATIONS)

	Cognitive development	Emotional development	Physical development	
	Educational achievement ^a	Internalizing problem-behavior	Smoking and drinking	Drug use
	Control ^b	Control ^b	Control ^b	Control ^b
Reading	0.04	0.03	-0.11	-0.05
Watching television	-0.00	0.05	0.07	0.02
Using the computer	-0.02	0.02	0.05	-0.04
Telephoning	-0.07	0.03	0.20	0.07

Correlations shown in bold are significant ($p < 0.001$).

a Number of pass grades for three subjects (Dutch, English and mathematics).

b Partial correlations where differences in sex, age, and family composition (two-parent family versus other types of family), school level and indigenous/immigrants have been controlled for.

Source: Social and Cultural Planning Office (National School Survey)

TABLE 4 (CONTINUED) RELATIONSHIP BETWEEN MEDIA AND IT USE AND SOCIO -MORAL DEVELOPMENT, 12-18 YEARS , 2001 (CORRELATIONS)

	Socio-moral development		
	Relationship with parents	Relationship with peers	Externalizing problem-behavior
	Control ^b	Control ^b	Controlled ^b
Reading	0.08	-0.04	-0.08
Watching television	-0.03	-0.00	0.05
Using the computer	-0.04	0.00	0.02
Telephoning	-0.12	0.08	0.15

Correlations shown in bold are significant ($p < 0.001$).

a Number of pass grades for three subjects (Dutch, English and mathematics).

b Partial correlations where differences in sex, age, and family composition (two-parent family versus other types of family), school level and indigenous/immigrants have been controlled for.

Source: Social and Cultural Planning Office (National School Survey)

This is in line with recent American research indicating that the correlation between video viewing and aggressive behavior towards others -- forming part here of externalizing problem-behavior -- may be interpreted as a causal effect of viewing on behavior (Johnson et al. 2002). As was the case with reading, the correlations are so low that little if any significance can be attributed to them. Although the research by Beentjes et al. (1999) indicates that within media use television leads most commonly to conflicts between parents and children, the NSO data do not provide any evidence of a significant link between viewing time

and the relationship with parents. Nor is there a link between television viewing and educational achievement. Although earlier research has shown that television viewing can have a negative effect on reading skills and consequently on educational achievement, the research results in this area were not clear-cut (Van der Voort and Beentjes 1997). Young people who watch more television tend to smoke and drink more (after control 0.07), but this weak correlation also does not provide grounds for concern.

The playing of computer games is a source of concern for many parents, and leading to conflicts with their children. These clashes do not however ultimately disrupt the relationship between parents and child. Computer-use is positively associated with externalizing problem-behavior, but this correlation disappears after controlling for background factors.

In line with earlier research (Van Schie et al. 1996), computer users do not turn out to be socially isolated 'nerds' after controls, as is also evident from the absence of any link with internalizing problem-behavior. After controls, computer users turn out to consume alcohol and tobacco somewhat more heavily and to use drugs somewhat less (partial correlations 0.05 and -0.04, respectively).

The time devoted to telephoning is associated with all forms of development, with the exception of internalizing problem-behavior. There is a negative correlation with the relationship with parents, i.e. young people who use the telephone heavily get along less well with their parents than their peers who are not on the phone as much. Self-evidently it may be assumed that the time on the phone is devoted especially to boyfriends and girlfriends, as indicated by the positive relationship between phone time and contact with peers.

The data do not, however, permit further conclusions. The fact that this could also concern contact with 'bad' friends is suggested by the positive correlation between phone time and externalizing problem behavior, but again the link is weak. Heavy calling is negatively correlated with educational achievement. After controlling for background characteristics, there is also a significant correlation with alcohol and tobacco consumption (0.20) and with drug use (0.07). To sum up, it may be said that telephoning is part of a pattern that is not uncommon for young people in puberty: distancing themselves from their parents and concentrating on friends outside the home. Heavy use of the telephone is associated with somewhat poorer school results and greater problems.

CONCLUSIONS

Data from the present survey reveal only small correlations between media/IT use and cognitive, emotional and socio-moral development. The interpretation of this finding is not however straightforward, in that the lack of a correlation may also mean that positive and negative effects cancel each other

out. It is therefore possible that there are development-promoting and development-inhibiting effects working against one another behind the scenes. Media use has been measured in terms of general time use and not in terms of the kind of media content that might have harmful effects (see Vergeer 2000: 44, 137); some (mainly US) research into the relations of viewing violent video programs with aggressive behavior among young people has shown notably higher correlations, around 0.18 (Anderson and Bushman 2002). On the other hand, care must be taken to guard against applying American findings over-readily to the Dutch situation.

Whereas reading is predominantly viewed positively in the public debate and television viewing negatively, the status of the computer is still marked by ambivalence. On one hand computers are often used for violent games and the Internet provides access to pornographic material and extremist political propaganda. On the other hand, there are many good educational CD-ROMs in circulation, much valuable information can be found on the Internet and digital media can support learning processes and make them more pleasant. In particular those who extolled the positive possibilities of the new media have expressed concern about the existence of a digital divide. The division between owners and nonowners of a PC and an Internet connection are said to be to the latter's disadvantage. Now that the diffusion of computers in Dutch households has reached nine out of ten young people, much of the concern about this material inequality has diminished.

Lasting inequality could be the consequence of differences in digital skills between young people, although those differences are not particularly marked in this study. Boys state that they are somewhat more adept at using a PC than girls, and while it has been suggested that more girls should get a computer, they now virtually all have access to a PC. Particular emphasis was placed on imparting digital skills in the education system during the 1998-2002 government term (OCenW 1999), but young people mainly pick up the skills at home and the schools have not succeeded in offering compensation for groups that are lagging behind, including girls (De Haan and Huysmans 2002a). In IT education policy the focus has switched from 'learning to use' to 'using to learn', with the acquisition of digital skills no longer being a goal in itself. In line with this, IT studies has now been abolished as a subject in its own right. The didactic emphasis in computer use has now been placed more on supporting and improving existing learning processes, but it remains unclear as to precisely how this should be done (OCenW 2002).

REFERENCES

- Anderson, C.A. and B.J. Bushman. 2002. The Effects of Media Violence on Society. *Science*, 295 (5564) (2377-2378).
- Ang, I. 1996. *Living Room Wars. Rethinking Media Audiences for a Postmodern*

- World*. London: Routledge, 1996.
- Beentjes, J., L. d'Haenens, T. van der Voort and C. Koolstra. 1999. Nederlandse en Vlaamse Kinderen en Jongeren als Gebruikers van Interactieve Media [Dutch and Flemish Children and Adolescents as Users of Interactive Media]. In: *Tijdschrift voor Communicatiewetenschap*, 27 (2), 105-124.
- Beentjes, J.W.J., C.M. Koolstra, N. Marseille and T.H.A. van der Voort. 2001. Children's Use of Different Media: For How Long and Why? In: S. Livingstone and M. Bovill (ed.), *Children and Their Changing Media Environment. A European Comparative Study*, Mahwah, NJ/London: Erlbaum (85-111).
- Bourdieu, P. 1996. *On Television*. New York: The New Press.
- CBS/SCP. 2001. *Pilot Onderzoek 'Gebruik ICT-hulpmiddelen'* [Pilot Research 'Use of ICT-utilities']. The Hague, 2001.
- Drotner, K. 2001. Global Media Through Youthful Eyes. In: S. Livingstone and M. Bovill (Eds.), *Children and Their Changing Media Environment. A European Comparative Study*. Mahwah, NJ/London: Erlbaum, (283-305).
- De Haan, J. and A. van den Broek. 2000. (Vrije)tijdsbesteding [Use of (Free) Time]. In: K. Wittebrood en S. Keuzenkamp (eds.), *Rapportage Jeugd 2000*, The Hague: SCP, (25-46).
- De Haan, J. and F. Huysmans 2002a. *Van Huis uit Digitaal; Verwerving van Digitale Vaardigheden tussen Thuismilieu en School* [Digital Life Start at Home; the Acquisition of Digital Skills between the Home and School]. The Hague: SCP.
- De Haan, J. and Huysmans, F. 2002b. "Differences in Time Use between Internet Users and Nonusers in the Netherlands", *IT and Society*, 1(2), p.67-85.
- Huysmans, F. and J. de Haan. 2001. Media en ICT: Omgaan met een Overvloedig Aanbod [Media and IT; Dealing with Abundance]. In: K. Breedveld and A. van den Broek (eds.) *Trends in de Tijd. Een Schets van Recente Ontwikkelingen in Tijdsbesteding en Tijdsordening*. The Hague: SCP (75-96).
- Johnson, J.G., P. Cohen, E.M. Smailes, S. Kasen and J.S. Brook. 2002. Television Viewing and Aggressive Behavior During Adolescence and Adulthood. In: *Science*, 295 (5564) (2468-2471).
- Katz, E. and P.F. Lazarsfeld. 1955. *Personal Influence. The Part Played by People in the Flow of Mass communications*. New York: Free Press.
- Knulst, W.P. 1995. *Podia in een Tijdperk van Afstandsbediening*. [Performing Arts in an Age of Remote Control]. The Hague: SCP.
- Knulst, W.P. and G. Kraaykamp. 1996. *Leesgewoonten* [Reading Habits], Rijswijk: SCP.
- Livingstone, S. and M. Bovill (eds.). 2001. *Children and Their Changing Media Environment; A European Comparative Study*, Mahwah, NJ/London: Erlbaum.

- McQuail, D. 2000. *Mass Communication Theory*, 4th Edition. London: Sage.
- NICAM. 2002. *NICAM Jaarverslag 2001*. [NICAM Year Report 2001] Hilversum: NICAM.
- Nikken, P. 2003. Twelve Years of Dutch Children's Television: Efforts of Public and Commercial TV Channels for Children up to Twelve Years Old. In: *Communications, the European Journal of Communication Research*, 28 (1), 33-52.
- OCenW (Ministry of Education, Culture and Science). 1999. *Onderwijs On Line; Verbindingen naar de Toekomst* [Education On Line; Connections to the Future]. The Hague: SDU, 1999.
- OCenW (Ministry of Education, Culture and Science). 2002. *Eindrapportage Onderwijs On Line* [Final Report Education On Line]. Zoetermeer: Ministry of Education, Culture and Science.
- Postman, N. 1984. *Amusing Ourselves to Death*. Penguin.
- Potter, W.J. 2001. *Media Literacy*, 2nd Edition. Thousand Oaks: Sage, 2001.
- Van Dijk, L. van, J. de Haan and S. Rijken. 2000. *Digitalisering van de Leefwereld* [Digitalisation of Daily Life]. The Hague: SCP.
- Van Petegem, L. 1999. Software voor Allerkleinsten aan Erosie Onderheving [Software for Very Small Children is Eroding]. *AutomatiseringsGids* 29 January 1999.
- Van Schie, E., O. Wiegman, M. Kuttschreuter and H. Boer. 1996. Speelfrequentie, Vrijtijdsbesteding en Sociale Integratie bij Computerspellen [Frequency of Playing, Use of Free Time and Social Integration with Computer Games]. In: *Tijdschrift voor Communicatiewetenschap*, 24, 1 (29-39).
- Van Steensel, K.M. 2000. *Internetgeneratie* [The Internet Generation]. The Hague: SMO.
- Stichting Lezen. 2002. *Jaarverslag 2001*. Amsterdam: Stichting Lezen.
- Tapscott, D. 1998. *Growing up Digital; the Rise of the Net Generation*. New York: McGraw-Hill.
- Valkenburg, P. 1997. *Vierkante Ogen: Opgroeien met TV en PC* [Squared Eyes; Growing up with TV and PC] Amsterdam: Balans.
- Valkenburg, P. 1999. De Ontwikkeling van Kind tot Consument [The Development from Child to Consumer]. In: *Tijdschrift voor Communicatiewetenschap*, 27, 1 (30-46).
- Valkenburg, P., H. Beentjes, P. Nikken and E. Tan. 2001. De Kijkwijzer als Classificatiesysteem voor Audiovisuele Producties: een Verantwoording [The 'Kijkwijzer' as a System of Classification for Adiovisual Productions] . In: *Tijdschrift voor Communicatiewetenschap*, 29, 4 (329-354).
- Vergeer, M.R.M. 2000. *Een Gekleurde Blik op de Wereld* [A Colored View on the World]. Nijmegen: dissertation Nijmegen University.
- Van der Voort, T.H.A. 1997. The Effects of Television on Children: Parental Perceptions and Mediation. In: *Trends in Communication*, 2 (5-29).

- Van der Voort, T.H.A. and J.W.J. Beentjes. 1997. Television and Children's Educational Achievement, in: *Trends in Communication*, 2 (51-71).
- Wright, C.R. 1986. *Mass Communication. A Sociological Perspective* (3rd ed.). New York: Random House.
- Zeijl, E. 2003. Indicatoren voor Ontwikkelingsstaat [Indicators of a Developmental State]. In E. Zeijl (ed.), *Rapportage Jeugd 2002*, The Hague: SCP.