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Making Dutch pupils media conscious: preadolescents' self-assessment of possible media risks and the need for media education

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Despite clear European and Dutch policies about media education, there is currently no media education curriculum in Dutch schools. A survey among preadolescents (n = 257) in six primary schools in the Netherlands included questions regarding media access, fears, risks, parental mediation of television and the internet, and the need for media education. Findings indicate an overall high saturation of media, but media choice depends on sociodemographic factors. Preadolescents are given rules for using the internet more often than for TV. Boys feel more confident about media use, and few participants report negative experiences or perceive risks while using the internet. Pupils feel a high need for media education, and those who are already thinking critically about media demand lessons more often. Therefore, both technical knowledge about media and critical awareness of the influence of media must be taught.

Keywords: media education; media literacy; preadolescents; the Netherlands

Introduction

Today's children grow up in a rapidly developing multimedia world. They need to learn to adopt a critical and distanced attitude towards media, or media literacy. Media literacy encompasses the ability to access, understand and create communications in a variety of contexts (Aufderheide 1993; Ofcom 2006a; Potter 2003). UNESCO stated in 1982: 'We must prepare young people for living in a world of powerful images, words, and sounds'. A large number of media education programmes are available to enable a better understanding of the media. Media literacy is a concept with a broad definition and, consequently, has led to a range of approaches and applications. These approaches stem from various disciplinary backgrounds, such as media studies, the fine and performing arts, history, psychology and sociology,

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education, and literary analysis (Hobbs 1998). In this study, we will concentrate on media use and possible negative effects of media use for preadolescents considered from a developmental perspective.

In the Netherlands, the number of media education programmes is developing steadily but slowly, but a curriculum for media education in schools does not currently exist (Domaille and Buckingham 2001; Keller, van der Eijnden, and van den Steenhoven 2008). This is a cause for concern, as the Netherlands is one of the 'high-risk countries' in Europe in terms of internet use. This classification indicates a high correlation between use and risk; Dutch children and youths have a higher risk of seeing sexual and violent content on the internet than children in countries with lower internet use (Hasebrink et al. 2009). Thus, appropriate media education is needed. The internet is not the only important medium in young people's lives; television also plays a central role in late childhood (Buckingham 2003). Therefore, the present study focuses on both the internet and television.

There are two reasons to implement media education during preadolescence (ages 9–12 years), the period of change between childhood and adolescence. First, developmental psychological research shows that adolescents are most vulnerable to negative effects of media, such as increased negative emotions and depression, negative body image, a more positive view towards substance use, a sexualised vision of adolescence, and more aggressive behaviour (for an overview, see Kirsh 2010). Also, the awareness of the already mentioned internet risks and the presence of risk-taking can be seen as developmental factors contributing to media literacy (Buckingham 2005), although these risks may not be overestimated (Livingstone 2003). Adolescents need to be properly prepared. Second, media education programmes should reach children at an age when behavioural and thought patterns are not yet completely established (Pfeiffer et al. 2007) but cognitive abilities are sufficiently developed. Pupils in the Netherlands attend the last two years of primary school education at this age.

Research about the effectiveness of media education in schools is increasing, but only a few of these studies have been published (Hobbs 2004). There are fewer than a hundred studies specifically about media literacy, compared with the thousands of studies on the effects of media (Strasburger, Wilson, and Jordan 2009). Furthermore, there is little research on risky media behaviour in the Netherlands (Livingstone and Haddon 2009), and it is difficult for researchers to find appropriate literature on media education (Staksrud et al. 2009). Methods of research on media education are also contentious. There is a demand for more child-centred measures and the implementation of visual methods to involve children in research (Ofcom 2006a).

For media education to be effective, it must be adapted to the requirements and customs of the target group. Therefore, the current study examines preadolescents' media access and use, their experiences with media, and their critical understanding of the fears and risks related to the internet and

television. Additionally, this study examines the extent to which participants see a need for media education.

Media education programmes in the Netherlands

Despite these clear policies about the importance of media education, there is currently no media education curriculum in Dutch schools. There is a curriculum for audio-visual design, and an increasing number of teachers use films in lessons, but media education 'takes place in a way that is hard to trace or coordinate' (Domaille and Buckingham 2001). Lessons about media education often include reflection and analysis, and the lack of training for teachers in these areas is one factor that hinders the development of media education in schools. As in other European countries, it could be argued that there is a significant gap between research and practice (Buckingham 1990). It could be argued that teachers are largely excluded from debates about media education. Although special projects concerning new media have developed rapidly over the last decade, the development of media education largely rests on the enthusiastic activities of a few, rather than on a coherent policy. The media education sector in the Netherlands is growing steadily, but slowly; Keller et al. (2008) counted 142 initiatives nationwide.

Media use and social environment

General patterns of media use among young people can be identified across Europe. In 2004, the Dutch Social and Cultural Planning Office established that media usage differs between demographic and social groups. The leisure time of children and adolescents is increasingly restricted, and differences in socio-economic status (SES) create inequalities in access to new media (Buckingham 2007). Additionally, there are gender differences in preferences for and in the use of media. For example, boys are more attracted to new media than girls (d'Haenens, Kokhuis, and Summeren 2001). A significant change has also been observed in ownership and use of media by children and youths, who have replaced print media with electronic media – particularly television, which is the dominant medium for children. The younger generation mostly uses media at home in their living rooms or in their own private rooms, leading to the increasing privatisation of media use. This phenomenon appears most often in preadolescence and adolescence (Bovill and Livingstone 2001).

The technological development of new media is also an important issue. Particularly in the Netherlands, the internet has become a wide-ranging technology. Livingstone and Haddon (2009) refer to an internet penetration of 82.9% in 2008, noting that 83% of children between 6 and 10 years of age use the internet, as do 96% of 11- to 14-year-olds. Furthermore, 97% of Dutch parents use the internet. This makes the Netherlands one of the leading countries worldwide in terms of internet access.

The most obvious and well-researched cause for differences in media access is the (SES) (Buckingham 2005). Low SES families own less media equipment than high SES families. Livingstone and Bober (2004) determined that 88% of middle-class children have access to the internet at home, compared with only 61% of working-class children. However, children with a low SES watch more television than children with a high SES (Bink, van Dam, and d'Haenens 2002; Pasquier 2001). In relation to newer media, these factors are often described as the 'digital divide', which refers to 'a perceived gap between those who have access to the latest information technologies and those who do not' (Penman and Turnbull 2007). This gap includes a lack of access to technologies as well as a lack of skills and competencies. Consequently, it is difficult for low SES children to use these media regularly and to become media literate (Penman and Turnbull 2007; Peter and Valkenburg 2006). Learning with and about computers in school can potentially 'compensate for uneven access in the home' (Süss 2001). To develop suitable media education, improved knowledge about media use is required.

- RQ_1: To what extent do sociodemographic characteristics (gender, SES, urban/rural living and family nationality) influence ownership and use of media by preadolescents?

Understanding and attitudes towards media education

Parents play an important role in teaching young people about using and understanding media. However, research shows that the traditional forms of media control have weakened in most families (Buckingham 2003; Moser 2006; Pasquier 2001). Through digital developments as well as the decline of literacy and education, the traditional perception of childhood no longer exists (Moser 2006; Postman 1994). The media, especially television, have erased the boundaries between childhood and adulthood and have undermined the authority of parents. This change can be observed in the lack of specific differences between adults and children in language, attitudes, desires and physical appearance. There is an ongoing struggle between parents and children about control of media use. Although many parents are afraid that children will see inappropriate material such as violence and pornography, they often perceive the regulation of internet use as difficult because of their own lack of knowledge about technology and content. Children between 9 and 12 years of age receive the least amount of media supervision from their parents (Bink, van Dam, and d'Haenens 2002). Consequently, preadolescents often do not receive rules regarding how, when and how long to use the media. The newer media have created a generation gap between parents and children (Buckingham 2000).

- $RQ_{2.1}$: To what extent do preadolescents have rules for watching television and using the internet, and to what extent do they follow these rules?

Scholars argue that it is not sufficient to simply teach children and youths technological skills that give them access to different media; they must also be taught critical awareness. A central problem in media education is how to teach children things they already know, or things they think they know because they have technical knowledge about the media. Thus, educators must move beyond technical skills and inspire children to use conscious theoretical reflection and critical understanding when using media (Buckingham 1990, 2007).

- $RQ_{2.2}$: How do preadolescents evaluate their technical skills for internet and television use?

During preadolescence, there is a high potential for risk-taking behaviour. Children enter this stage around the age of nine under the primary social influence of their parents, which changes to peer influence by the end of this stage (Thornburg 1983). Valkenburg and Soeters (2001) divided the risks of the internet into three categories: first, potential exposure to sexual or violent material; second, the possibility of cyber-bullying via emails and chat rooms; and third, the potential loss of privacy by giving out personal information. Livingstone and Haddon (2009) reported that about half of online teenagers provide personal information, making this the most common internet-related risky behaviour. Furthermore, 40% of their respondents are at risk of seeing pornography on the internet. The Eurobarometer survey in 2005–2006 established that in the Netherlands, young adolescents between 12 and 14 years of age are most vulnerable to online risks (de Haan et al. 2008). Some of the main challenges for adolescents are to form their own identity, to find their role in society, and to learn to think and act independently. Consequently, young people may face negative consequences due to risk-taking behaviour.

- $RQ_{2.3}$: To what extent do preadolescents trust the information they receive from television and the internet?
- $RQ_{2.4}$: What negative experiences have preadolescents had online?

In 2004, Potter introduced the 'Cognitive Theory of Media Literacy', which proposed that 'individuals should be empowered to make their own choices and interpretations' and must think and make decisions actively. People who are not media literate let the media or others make these decisions for them. Government, school, religion, family and peers can positively or negatively influence media literacy. There is no way to teach people media literacy if they do not understand its impact and do not want to learn. Likewise, if people do not recognise their responsibility for the development of their own media literacy, there will be no motivation for change (Potter 2004). Consequently, it is important to know more about attitudes towards media education.

- $RQ_{3.1}$:To what extent have preadolescents had media education?
- $RQ_{3.2}$: To what extent do preadolescents feel a need for media education?

Method

Sample

Six primary schools in and around the municipality of Enschede in the Netherlands participated in this study: two schools from areas with higher SES, two from areas with lower SES and two from a rural environment. The sample consisted of 257 preadolescents from the last two classes of these schools.

The average age of participants was 10.73 (SD = .68), with a range from 9 to 12 years. Additional characteristics of the sample were as follows: 52.5% of the participants were female and 47.5% were male; 83.3% lived in an urban environment and 16.7% lived in a rural environment; and 68.9% of the respondents' parents have a Dutch background, while 31.1% are of another nationality. Participants' SES was divided: 57.6% were from a lower SES and 42.1% were from a higher SES.

Procedure

A survey was used to collect the data, using a research design adapted from the research of Hasebrink et al. (2008) and Ofcom (2006a, 2006b). Lobe et al.'s best practices research guide (2008) was employed to create a questionnaire that could be easily understood by the young sample.

After pre-testing the survey, some items were changed. Additionally, the introduction was removed from the questionnaire and presented verbally at the beginning of each session.

Participants completed the survey during a lesson in school. To isolate the survey from everyday school life, the researcher gave all instructions in class. It was emphasised that the opinions and experience of the pupils were being requested; thus, there were no right or wrong answers (Punch 2002). Furthermore, students were assured that their answers were confidential and would not be seen by classmates or teachers.

Questionnaire

A list of 36 questions about access, understanding and attitude towards media education and demographics was used.

Access

The concept 'access' tested which media the children's families use, which media they use themselves and their preferences for these media, using 14

options from previous research (Medienpädagogischer Forschungsverband Südwest 2008; Ofcom 2006b). For the internet and television, the questions focused on the kind of usage: location, frequency and alone or in company. There were no questions about the time of media use, because Lobe et al. (2008) determined that statements about time from children are often not valid.

Understanding

'Understanding' addresses the question of levels of trust in television and online content, level of concerns with each platform, existing rules about usage, and competence and knowledge about usage (Ofcom 2006b; Potter 2003). Parental mediation and risk perception are two secondary aspects of this concept. Because technical knowledge differs from knowledge of content, critical understandings of and critical attitudes towards television were tested. The participants rated the substance of different genres on a scale from 1 (totally true) to 4 (totally untrue). Questions were also asked about computer games. Questions regarding opinions about the internet were summarised in two statements: 'the main task of the internet is to educate', and 'you can trust all information from the internet'. For the internet, additional detailed questions were asked about possible risks and experiences.

Attitude towards media education

The children were asked if they had ever had lessons in television or internet media education at school and if they wanted to learn more about these topics. The last question asked who students felt should teach them about the internet and new media.

Demographics

Children's age and gender, and parents' backgrounds, employment status and SES were central aspects in this concept. SES is not based on reports about participants' parental education and income (Roberts, Foehr, and Rideout 2005), but rather on classifications from the Dutch Institute for Social Research. These 'status scores' give each postal code area a factor score from –3 to +3, with a value of 0 seen as average. A high score implies social disadvantage, and a low score implies social wealth.

Results

Access

There is an overall high saturation of new and traditional media among the families of the respondents. Television and computers or laptops are accessible

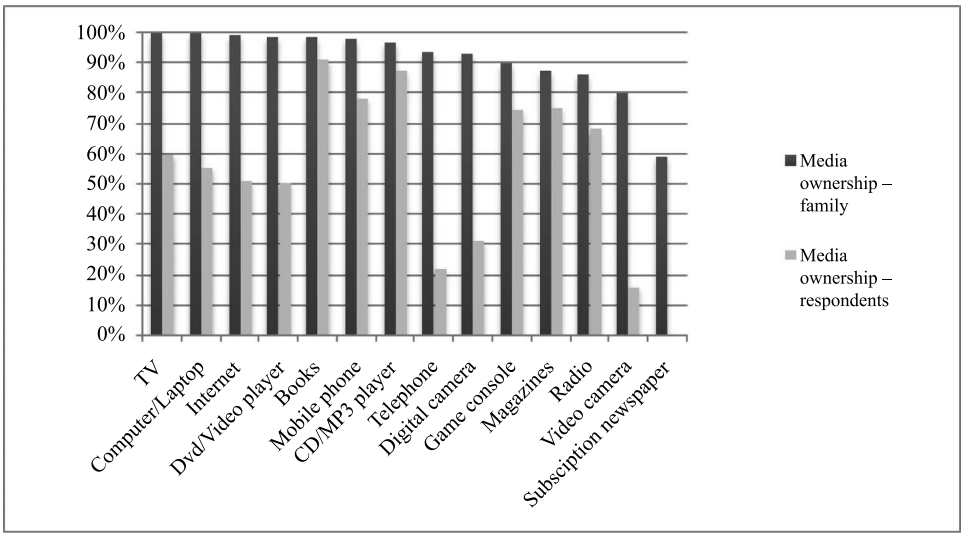

Figure 1. Media ownership by families and by respondents.

in 100% of the cases. In contrast, only 59.1% of the families have a newspaper subscription. Although the private ownership of media is a strong indicator of a media-saturated world, new media are not dominant; for 91.1% of children, books are the media owned most often, closely followed by CD/MP3 players, at 87.5% (Figure 1).

The results presented in Table 1 show that there are significant differences in media ownership among the respondents' families. Families from an urban environment and from a higher SES have an overall higher saturation of media than families from a rural environment and from a lower SES. Differences are primarily apparent in the use of traditional media, such as newspapers, magazines and radio. Families with Dutch parents are more likely to use traditional media than families with parents from other countries (e.g., 93.1% vs. 72.2% for radio, and 71.1% vs. 34.2% for newspapers).

Table 1. Chi-square analyses of media ownership of families (df = 14) and respondents (df = 13).

	Chi-square	
	Media ownership – family	Media ownership – respondent
Gender	20.98	46.40***
Urban/rural living	44.47***	27.51*
SES	87.39***	43.88***
Parents' home country	62.01***	34.61**

Note: *$p < .05$; **$p < .01$; ***$p < .001$.

Gender plays an important role in private media ownership. Male preadolescents are more likely to use more electronic media (such as the internet and game consoles) and less traditional media (such as books and magazines) than their female peers. Furthermore, respondents from urban areas are more likely to own magazines (79.0%) and radio (72.2%) than respondents from rural areas (58.1% and 51.2% for magazines and radio, respectively). SES influences media ownership among respondents as well. Traditional media such as radio and magazines are bought more often by respondents with higher SES (76.2% for radio and 81.1% for magazines) than by respondents with lower SES (58.3% for radio and 67.9% for magazines). There is one exception: preadolescents from a lower SES are more likely to have their own televisions (67.0%) than their peers from a higher SES family (54.7%). Likewise, children with parents from Dutch backgrounds are also more likely to have their own TVs (70.9%) than children with parents from other countries (54.9%).

It is also important to know which media preadolescents prefer. Evidently, watching television (24.1%) is still a favourite media activity, but computer-related activities are in the majority, including using the computer/laptop (18.2%), using the internet (14.4%) and playing computer games (12.1%). Gender is found to be significant in this context, with $x^2(12, 255) = 76.61$, $p = .00$. Male respondents have a higher affinity towards using computers (42.2% vs. 31.1% for female respondents) and playing computer games (40.8% vs. 10.4% for female respondents).

This study focuses on television and internet usage, the two most commonly used and best-liked types of media. Many respondents have television sets in their homes (mean = 3; SD = 1). Almost half of the preadolescents have their own television, and 45.1% have a video or DVD player in their bedrooms. Nevertheless, only 13.6% watch television in their own rooms, and the majority of the respondents (79.8%) watch TV in their living rooms. Only 31.9% of the respondents report that they most often watch TV alone.

Using the internet is also an important activity for young people: 43.3% of the respondents use the internet almost every day, 24.9% use it every day and 23.3% use it a few days a week. Many respondents (85.7%) use the internet outside of their homes, 64.6% at school and 75.7% at friends' homes. In this context, SES is significant ($p = .006$) for the location of internet usage: children from families with a low SES are less likely to use the internet at school, compared with their peers from high SES families (40.6% vs. 62.9%).

The activities of young people on the internet are diverse. The most frequently chosen activity is playing games (66.5%), followed by watching TV or *YouTube* (54.7%), using social networks (51.2%) and instant messaging (32.3%). Preadolescents from rural environments, from low SES families and from non-Dutch backgrounds use the internet for doing homework more often than their peers do.

Understanding

Only 48% of the respondents have rules established by their parents for watching television, while 73.2% have rules regarding internet usage. There are also differences in following the rules: 35.6% of the respondents fail to follow the rules for television use, but only 5.1% transgress rules for internet usage (Table 2).

Gender and urban or rural living are found to be significant factors in following the rules about watching television. Children from urban environments, boys and children from high SES families are more likely to break the rules than their peers. Furthermore, female participants (80.7%) more often report having rules than male participants (64.8%), and children from a higher SES milieu and urban environments more often break rules regarding internet usage.

This study also attempted to determine what specific rules preadolescents are given for internet and television use. The rules for television (Figure 2) and internet use (Figure 3) are diverse, and there are no differences in the sample. The majority of preadolescents are not allowed to watch violent or pornographic content. Furthermore, almost half of the participants report not being allowed to buy things on the internet, and a third of the participants are not allowed to download. These results can be applied to the entire sample.

Most participants reported having enough *technical knowledge* to operate a television (87.4%). The percentage of boys (97.4%) who have a positive self-evaluation of their competence is higher than the percentage of girls (84.4%) ($x^2(1, 246) = 19.99$, $p < .001$). Furthermore, more children from urban environments (89.8%) consider themselves to be competent than children from a rural environment (75.0%) ($x^2(1, 246) = 6.67$, $p < .05$), and more children from a higher SES (93.1%) see themselves as having sufficient knowledge in this context than children from a lower SES (79.4%). A very similar self-evaluation can be seen regarding the internet; most respondents

Table 2. Chi-square analyses for having and following rules for television and the internet.

	Chi-square			
	Having rules for television (df = 2)	Following rules for television (df = 3)	Having rules for the internet (df = 1)	Following rules for the internet (df = 3)
Gender	2.59	14.26**	8.34**	2.72
Urban/rural living	7.23*	22.84***	1.79	11.08*
SES	7.24*	21.61***	.01	16.08**
Parents' home country	3.24	11.75*	1.19	4.79

Note: *$p < .05$; **$p < .01$; ***$p < .001$.

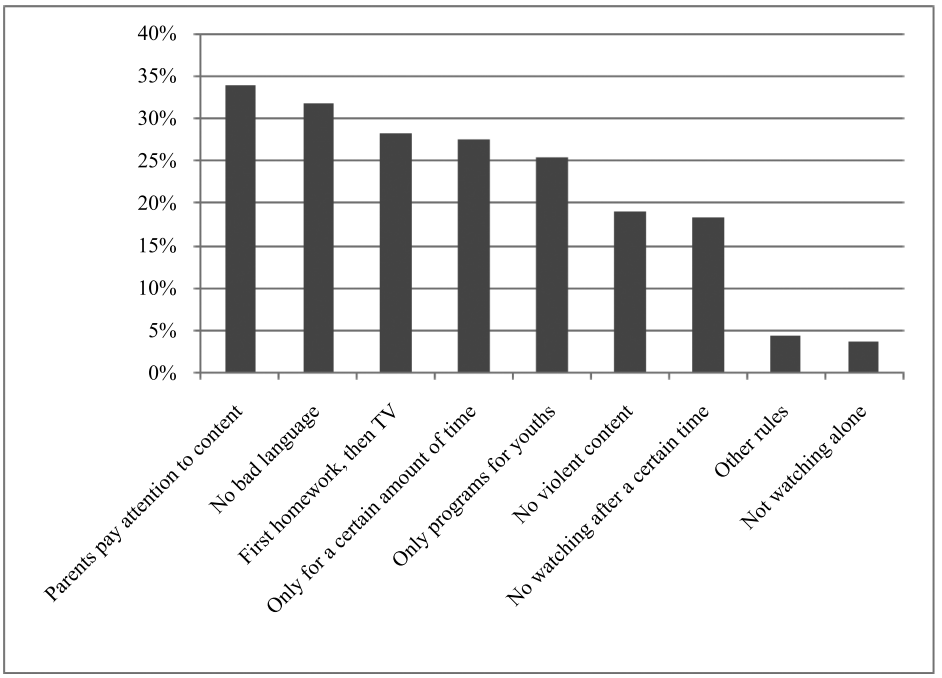

Figure 2. Rules for watching television.

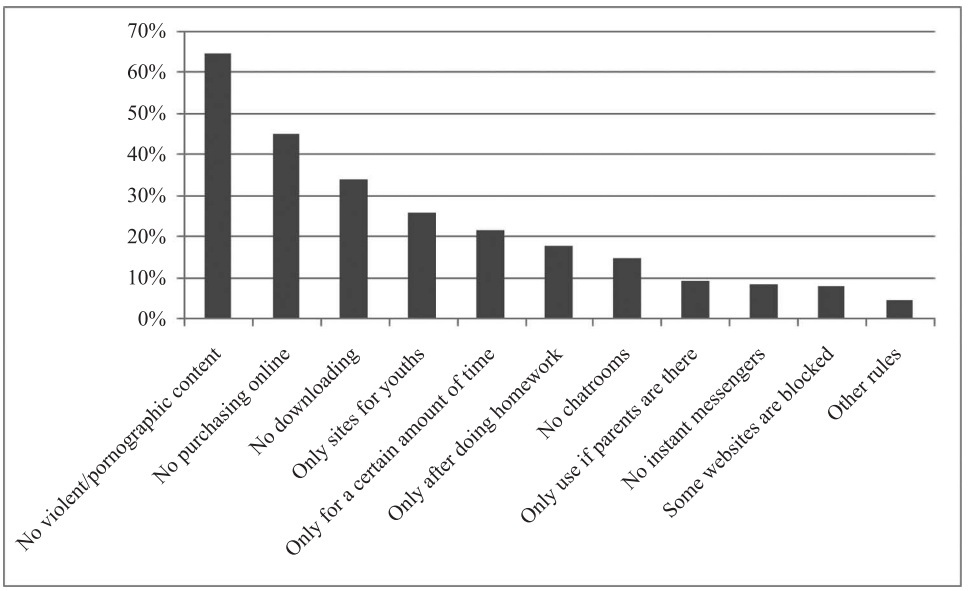

Figure 3. Rules for using the internet.

consider themselves competent and skilled enough to use the internet, but female preadolescents are more likely to judge themselves as having insufficient knowledge than their male peers ($z = -3.24$, $p < .05$).

News content was regarded by respondents to be the most truthful genre of media (mean = 1.6), followed by documentaries (mean = 1.8). Reality TV (mean = 2.37) and advertisements (mean = 2.8) were evaluated as less reliable. For all independent variables, statistical tests were found to be non-significant.

Most respondents disagree that the internet's main task is education, and they have a sceptical attitude towards the information on the internet. Results show that children from lower SES families are more likely to think that the main task of the internet is to educate ($z = -2.15$. $p < .05$) (average mean rank (low/high): 96.49/113.94).

Opinions about computer games differ as well. The majority of the respondents are neutral towards the statement that skills required for games come in handy in real life (mean = 2.09, SD = 1.29). Additionally, most think that playing violent computer games can have a negative effect on behaviour, and therefore they agree with age restrictions (mean = 1.6, SD = 1). Male respondents are more likely to evaluate violence in games as not having a negative effect on behaviour ($z = -2.41$, $p < .05$) and as not having a bigger impact than violence on television ($z = -3.62$, $p < .05$). Males also disagree more often with age restrictions for computer games than do female respondents ($z = -3.73$, $p < .05$). It is apparent that girls are more critical in this context.

More than one-third of the respondents report feeling *frightened* at least once while using the internet, while 62.3% report no fear related to internet use. Getting a computer virus is the fear that is mentioned most often (see Figure 4).

Girls (52.3%) are more likely to be afraid of getting a computer virus than boys (44.1%) ($p = .011$). Furthermore, children from rural environments (60.9%) ($p = .019$), from low SES families (60.4%) ($p = .000$) and children whose parents are from national backgrounds other than Dutch (68.6%) ($p = .004$) are more frightened of getting a computer virus than are those from urban environments (46.1%), from higher SES families (37.0%), and whose parents have Dutch backgrounds (39.7%).

More than 70% of respondents had not had any *negative experiences* on the internet. The most often experienced negative situation was that respondents saw something on the internet that scared them or they received offending comments. The reactions to these threats were diverse, but most of the respondents left such a site immediately (62.6%), followed by telling the parents about the event (41.9%). Gender was found to be statistically significant: male preadolescents (10.7%) are more likely to send a link to the site to a friend than their female peers (1.4%) ($p = .034$ in Fisher's Exact Test), and male participants (33.3%) do not tell their parents about the incident as often as female participants do (49.3%) ($p = .049$ in Fisher's Exact Test).

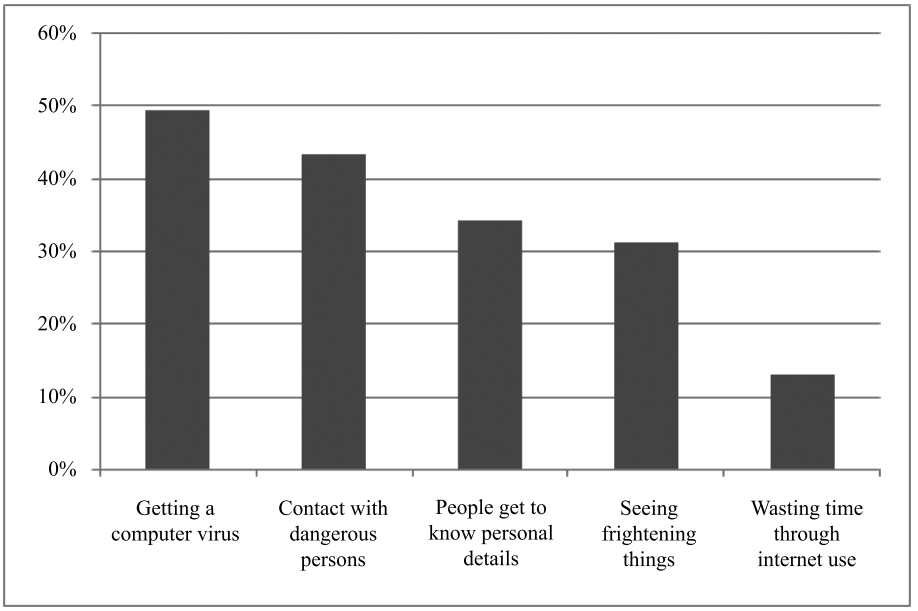

Figure 4. Fears while using the internet.

Attitude towards media education

Only one third of all respondents have had lessons in internet usage, and only 10% have had lessons regarding the use of television and films. The content of the lessons is diverse. Most pupils had general lessons about how to use the internet (23.6%) and how to avoid seeing unwanted content (22.6%). Within the lessons about TV and films, the participants reported learning about the following content: 38.5% learned how to evaluate trustworthy information, 33.3% learned how a programme is made and 28.2% learned how to produce a film.

The number of children who had lessons in media education was also very small, although most wanted to learn more about the internet. For example, 85.6% want to know more about how to distinguish between reliable and unreliable information, and more than 60% want to learn how to use the internet safely and how to search for information effectively. Girls are more likely to want lessons in internet use than boys are ($x^2(3, 257) = 8.32$, $p < 0.05$), and children from a Dutch background are more likely to want lessons in internet use than children from another national background ($x^2(3, 257) = 15.9$. $p < 0.01$).

The participants also report a high need for lessons regarding TV and films. Results show that 74.02% want to learn more about how to make a film, 69.12% want to learn how a programme is made and 69.12% want to be taught how they can determine trustworthy information.

To realise these ambitions, it is important that preadolescents accept teaching methods and sources. Most of the respondents (22%) want to learn about the internet and new media from their parents, 17.1% want to learn about these topics in school and 15.7% want to learn from friends.

Conclusions and discussion

It is obvious that social demographics influence the ownership and use of media by preadolescents. There is a high overall saturation of media within families and among preadolescents. In accordance with previous research (Bonfadelli, Bucher, and Piga 2007; Peeters and d'Haenens 2005), this study found that families with a high SES, families from urban environments and native speakers tend to own more traditional media. Private media ownership and the favourite media of preadolescents also align with sociodemographic factors, and boys tend to be more oriented towards electronic media than girls. In addition, more children from low SES families and from non-Dutch backgrounds have televisions. Therefore, this study confirms the findings of d'Haenens, Kokhuis and Summeren (2001). Despite the high percentage of televisions and DVD players in preadolescents' rooms, the number of preadolescents who watch television by themselves is quite low. These results are inconsistent with the theory of the privatisation of media (Bovill and Livingstone 2001; Ofcom 2006b). Privatisation of media may apply to computer usage only in the Dutch situation.

Internet usage outside the home is quite high, and the role of schools must not be underestimated. A significant finding is that preadolescents from low SES, from rural environments and from non-Dutch backgrounds more often use the internet for homework. This might be because these children's parents may not be able to help for various reasons, leaving the children in need of the extra help provided by the internet.

Parental mediation of internet and television usage plays an important role in preadolescents' lives. Refuting the assumption that parents do not have enough knowledge about the internet to control their children's internet use, more than 70% have rules concerning their internet usage. This could be due to the relatively high internet usage among Dutch parents. Furthermore, preadolescents are more likely to follow the rules for internet usage than rules for watching TV.

Concerning technical knowledge, this study found that children from high SES, boys and those from urban environments are more conscious of their skills in using television and the internet. Media education often concentrates on technical skills (Buckingham 2007), leading young people to believe that they are capable of using media simply by pressing certain buttons and shielding themselves against the negative influences of the media. A critical understanding of the content is a more effective approach to media education. Therefore, it is important to know how preadolescents

evaluate the media they use often. In the evaluation of preadolescents' trust in different television genres, no differences between groups were found. More preadolescents from low SES families agreed with the statement that the main task of the internet is to educate. Many preadolescents have a critical attitude towards computer games and even advocate age restrictions, although boys are not as critical as girls about the negative impact of computer games. In addition, boys more often disagree with age restrictions for computer games.

Despite the Netherlands' ranking as a 'high-risk country' for internet use, the majority of the preadolescents surveyed had not had any negative experiences on the internet. Reactions to potential internet threats differ by gender; boys are more likely to send offending links to friends, and they do not tell their parents about threats as often as girls do.

Among those who reported being frightened online, catching a computer virus was the biggest fear. Because media competence is often tied to technical knowledge of media, it is not surprising that children consider computer viruses the most apparent threat. Preadolescents from lower SES, girls, children from non-Dutch backgrounds and children from rural environments report this fear more often than their peers.

Results of the survey also show that preadolescents feel a high need for media education. More girls and preadolescents with Dutch backgrounds express this need. Young people also want to learn more about television and films. In order for them to achieve sufficient media competence, it is important to consider their wishes regarding the choice of a teacher. In most cases, this function is fulfilled by parents or friends, but the school can also fulfil this function. Parents and schools must be included in media education for it to succeed.

According to Potter (2004), preadolescents are aware of their need for media education and do not have to be motivated to participate in such programmes. Nevertheless, those who already have a realistic view of media content still want more education, especially girls and Dutch children. Other groups are more willing to take risks and do not feel such a strong need for media education.

The results show that schools have the facilities to compensate for unequal access to media, but access is not the only important factor. Children are conscious of the technical aspects of media use, but they need more knowledge about critical media usage and evaluation. Despite the low rate of reported fears and negative experiences, there is a high demand for media education, often by the pupils themselves. The phase of preadolescence is suitable for this kind of education because preadolescents are able to understand the context and know enough about media to properly develop their views and practices.

Limitations and recommendations

To generalise this study to the larger population of preadolescents in the Netherlands, it is important that research be conducted in other parts of the country.

The determination of SES by postal codes is suitable for the Netherlands, but this method is not applicable for countries with larger postal code areas. Future research should choose participants from the entire range of the SES to test for differences in the sample by distinguishing between low, middle and high SES. Furthermore, more appropriate and valid instruments must be developed for research with children. This may lead to more generalisable results and to a more efficient collaboration between researchers. For example, this research had no appropriate findings for the variable 'employment status of parents', but it is important to track the development of indirect measures of SES, such as the number of books or cars in parents' homes (Torney-Purta et al. 2001). In addition, instruments for qualitative research must be developed to investigate preadolescents' problems with media usage in more depth. The research of the *EU-Kids Online Network*, founded by the European Commission, is an important step in this direction.

Research and practice must be combined more effectively. In many cases, neither the methods used nor the effects of media education projects are evaluated. It is important to measure the long-term effects and to establish dialogue between researchers and teachers for further development. Furthermore, teachers need to be involved in media education training. An exchange of knowledge and ideas could generate benefits for both research and practice. Additionally, extra projects should be implemented in the Dutch school curriculum, including technical knowledge about media as well as a critical awareness towards media that can empower pupils to resist negative influences.

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References

Aufderheide, P., ed. 1993. *Media literacy: A report of the national leadership conference on media literacy.* Aspen, CO: Aspen Institute.

Bink, S., A. van Dam, and L. d'Haenens. 2002. Children and media – The Netherlands. In *Children and media*, ed. D. Buckingham. London: UNESCO. http://www.europeanmediaculture.org/fileadmin/bibliothek/english/buckingham_childrenmedia/buckingham_childrenmedia.pdf (accessed February 13, 2008).

Bonfadelli, H., P. Bucher, and A. Piga. 2007. Use of old and new media by ethnic minority youth in Europe with a special emphasis on Switzerland. *Communications* 32: 141–70.

Bovill, M., and S. Livingstone. 2001. Bedroom culture and the privatization of media use. *Children and their changing media environment: A European comparative study*, ed. S. Livingstone and M. Bovill, 179–200. Mahwah, NJ: Lawrence Erlbaum.

Buckingham, D. 1990. *Watching media learning: Making sense of media education.* Bristol: Falmer Press.

Buckingham, D. 2000. *After the death of childhood: Growing up in the age of electronic media.* Cambridge: Polity Press.

Buckingham, D. 2003. *Media education: Literacy, learning, and contemporary culture.* Cambridge: Polity Press.

Buckingham, D. 2005. *The media literacy of children and young people: A review of the research literature.* On behalf of Ofcom. http://eprints.ioe.ac.uk/145/1/Buckinghammedialiteracy.pdf (accessed February 1, 2009).

Buckingham, D. 2007. Media education goes digital: An introduction. *Learning, Media and Technology* 32, no. 2: 111–19.

de Haan, J., M. Duimel, and P. Valkenburg. 2008. National report for The Netherlands. http://www2.lse.ac.uk/media@lse/research/EUKidsOnline/EU%20Kids%20I%20(2006-9)/EU%20Kids%20Online%20I%20Reports/WP3NationalReportNetherlands.pdf (accessed May 13, 2009).

d'Haenens, L., M. Kokhuis, and C. Summeren. 2001. *Kijken of surfen? Mediagebruik van kinderen en adolescenten* [Watching or surfing? Media use by children and adolescents]. Leuven, Belgium: Acco.

Domaille, K., and D. Buckingham. 2001. Youth media education survey 2001: Final report. http://portal.unesco.org/ci/fr/files/27308/12150113553Survey_Report_by_Kate_Domaille.rtf/Survey_Report_by_Kate_Domaille.rtf (accessed February 23, 2009).

Hasebrink, U., S. Livingstone, L. Haddon, and K. Ólafsson. 2009. *Comparing children's online opportunities and risks across Europe: Cross-national comparisons for EU Kids Online.* London: EU Kids Online, LSE.

Hobbs, R. 1998. The seven great debates in the media literacy movement. *Journal of Communication* 48, no. 1: 16–32.

Hobbs, R. 2004. A review of school-based initiatives in media literacy education. *American Behavioral Scientists* 48: 42–59.

Keller, P., J. van der Eijnden, and J. van den Steenhoven. 2008. Onderzoeksverslag 'Mediawijsheid Kaart'. Stichting Nederland Kennisland. http://www.kennisland.nl/uploads/fckconnector/fbc1b4dc-ce56-4e4b-8af2-2d86dd87ad07 (accessed September 9, 2009).

Kirsh, S.J. 2010. *Media and youth: A developmental perspective.* Chichester: Wiley-Blackwell.

Livingstone, S. 2003. Children's use of the internet: Reflections on the emerging research agenda. *New Media & Society* 5, no. 2: 147–66.

Livingstone, S., and M. Bober. 2004. *UK children go online: Surveying the experiences of young people and their parents*. London: LSE Research Online. http://eprints.lse.ac.uk/395/ (accessed February 20, 2009).

Livingstone, S., and L. Haddon. 2009. *EU Kids Online: Final report*. London: EU Kids Online, LSE. http://www2.lse.ac.uk/media@lse/research/EUKidsOnline/

EU%20Kids%20I%20(2006-9)/EU%20Kids%20Online%20I%20Reports/EUKidsOnlineFinalReport.pdf (accessed June 20, 2009).

Lobe, B., S. Livingstone, K. Olafsson, and J.A. Simões. 2008. *Best practice research guide: How to research children and online technologies in comparative perspective.* London: EU Kids Online, LSE. http://www.ifap.ru/library/book364.pdf (accessed May 25, 2009).

Medienpädagogischer Forschungsverbund Südwest. 2008. KIM-Studie 2008: Kinder und medien computer und internet. Basisuntersuchung zum medienumgang 6- bis 13-Jähriger in Deutschland [Children and media, computer and internet. A study of media usage among 6 to 13 year olds in Germany]. http://www.mpfs.de/fileadmin/KIM-pdf08/KIM2008. pdf (accessed May 7, 2009).

Moser, H. 2006. *Einführung in die medienpädagogik: Aufwachsen im medienzeitalter* [Introduction to media pedagogy: Growing up in the age of media]. Wiesbaden, Germany: VS Verlag für Sozialwissenschaften.

Ofcom. 2006a. Media literacy audit: Report on media literacy amongst children. http://stakeholders.ofcom.org.uk/binaries/research/media-literacy/children.pdf (accessed May 26, 2009).

Ofcom. 2006b. Media literacy audit: Report on UK children's media literacy. http://www.ofcom.org.uk/advice/media_literacy/medlitpub/medlitpubrss/ml_childrens08/ml_childrens08.pdf (accessed May 30, 2009).

Pasquier, D. 2001. Media at home: Domestic interactions and regulation. In *Children and their changing media environment: A European comparative study*, ed. S. Livingstone and M. Bovill, 161–78. Mahwah, NJ: Lawrence Erlbaum.

Peeters, A.L., and L. d'Haenens. 2005. Bridging or bonding? Relationships between integration and media use among ethnic minorities in the Netherlands. *Communications* 30: 201–31.

Penman, R., and S. Turnbull. 2007. Media literacy – Concepts, research and regulatory issues. On behalf of the Australian Communications and Media Authority. http://nla.gov.au/nla.arc-93024 (accessed February 23, 2009).

Peter, J., and P.M. Valkenburg. 2006. Adolescent's internet use: Testing the 'disappearing digital divide' versus 'emerging digital differentiation' approach. *Poetics* 34: 293–305.

Pfeiffer, C., T. Mößle, M. Kleiman, and F. Rehbein. 2007. Die PISA-Verlierer – Opfer ihres medienkonsums: Eine analyse auf der basis verschiedener empirischer untersuchungen [The PISA losers – Victims of their media consumption: An analysis based on several empirical studies]. Hannover, Germany: Kriminologisches Forschungsinstitut Niedersachsen e.V. http://www.gym-raubling.de/inhalte/elternseiten/elternbriefe/2009_10_05.Die_PISA-Verlierer_-_Opfer_ihres_Medienkonsums_-_KFN_Studie_vom_15-02-2008.pdf (accessed February 2, 2009).

Postman, N. 1994. *The disappearance of childhood.* New York: Vintage Books.

Potter, W.J. 2003. *Theory of media literacy: A cognitive approach.* Thousand Oaks, CA: Sage.

Potter, W.J. 2004. Argument for the need of a cognitive theory of media literacy. *American Behavioral Scientist* 48, no. 2: 266–72.

Punch, S. 2002. Research with children: The same or different from research with adults? *Childhood* 9, no. 3: 321–41.

Roberts, D.F., U.G. Foehr, and V. Rideout. 2005. *Generation M: Media in the lives of 8-18 year-olds.* Menlo Park, CA: Henry J. Kaiser Family Foundation.

Staksrud, E., S. Livingstone, L. Haddon, and K. Ólafsson. 2009. *What do we know about children's use of online technologies? A report on data availability and research gaps in Europe.* 2nd ed. London: EU Kids Online, LSE.

Strasburger, V.C., B.J. Wilson, and A. Jordan. 2009. *Children, adolescents, and the media.* Thousand Oaks, CA: Sage.

Süss, D. 2001. Computers and the internet in school: Closing the knowledge gap? In *Children and their changing media environment: A European comparative study*, ed. S. Livingstone and M. Bovill, 221–42. Mahwah, NJ: Lawrence Erlbaum.

Thornburg, H.D. 1983. Is early adolescence really a stage of development? *Theory into Practice* 22, no. 2: 79–84.

Torney-Purta, J., R. Lehmann, H. Oswald, and W. Schulz. 2001. *Citizenship and education in twenty-eight countries: Civic knowledge and engagement at age fourteen.* Amsterdam: International Association for the Evaluation of Educational Achievement.

Valkenburg, P.M., and K.E. Soeters. 2001. Children's positive and negative experiences with the internet: An explanatory survey. *Communication Research* 28, no. 5: 625–75.