

## Testing the reliability of scales on parental internet mediation

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### Summary

This short report explores the dimensionality and reliability of the five mediation scales of internet use in different languages applied in the cross-national EU Kids Online survey in 2010: (1) active mediation of internet use; (2) restrictive mediation; (3) active mediation of internet safety; (4) monitoring; and (5) technical mediation.

More specifically, the original English version, the translated French, Spanish and German versions, as well as the version across languages and 25 countries, were examined by analysing the data of around 1,000 children and their parents per country. Both the scales based on the parents and children's responses are compared.

The results show that, overall, the internet mediation scales work quite well in all languages and across countries. Some modifications are suggested which could improve the reliability of the subscales.

### Parental internet mediation

The internet offers children many opportunities from which they can benefit, such as for learning, communication and creativity. At the same time, internet use can also mean risks for children, which might result in harm, for example, being bullied online or personal information being given out on the internet (Helsper *et al.*, 2013).

By mediating their children's media use, parents in particular play an important role in their child's development of internet literacy, their ability to use opportunities and to prevent risks (Livingstone and Helsper, 2008).

*Mediation consists of different parenting styles, ranging from not being involved with the child's media*

*behaviour to mediating very actively.* Studies on television viewing and video gaming have generally distinguished three mediation styles: (1) active or instructive mediation, which involves explaining and discussing the media content children access; (2) restrictive mediation or setting rules about where, when, for how long and what to access; and (3) co-using, which comprises all kinds of shared media activities by parents and children (van der Voort *et al.*, 1992; Valkenburg *et al.*, 1999; Nikken and Jansz 2006). Specific characteristics of internet use give rise to two additional mediation styles. The technology allows (4) monitoring or checking children's online activities afterwards; and (5) restricting online content or time spent online by applying technical bans or filters (Livingstone and Helsper, 2008; Sonck *et al.*, 2013).

These five mediation styles were surveyed within the EU Kids Online II project across 25 European countries in 2010. The mediation items largely resulted from Livingstone and Helsper's study (2008), with some modifications. In order to survey the topic of mediation in all European countries in a similar way, the original English items were translated into the other participating languages according to the "parallel blind technique" (see Werner and Campbell, 1970). *Although this translation was performed with great care, differences in interpretation are possible, which can be due to language differences, such as word choice, but also be due to differences in cultural interpretation of the same concept.*

Hence, there is a need to test if standardised scales, not yet tested in different languages and countries, are actually working in a similar way in different languages, and, moreover, across countries. Such cross-national comparisons prove, on the one hand, whether the process of translation has an effect on the reliability of a scale, and on the other, ensure that the dimensionality of the scales are also represented in other countries. Furthermore, the use of the scales

across languages and countries has no effect on the reliability and information value of the scales.

The main research questions addressed in this report are: (1) Can the intended five mediation scales be confirmed by testing these in different languages and across languages/countries? (2) How reliable are the (sub)scales for parental mediation that have been used within the EU Kids Online survey in their original language (English), in selected other languages (French, Spanish and German), and, moreover, across all European languages and countries (EU25)? (3) In which way could the scales be improved?

To this end, the dimensionality and reliability of the five subscales used to measure mediation in the EU Kids Online survey were tested: co-use, active mediation (of safety), restrictive mediation, monitoring, and applying technical restrictions (Livingstone *et al.*, 2011a). The dimensionality and scale reliability tests were performed based on the English items (from the UK questionnaire), the translated French, Spanish and German items, as well as on the overall European survey items including all languages considering parents and children's answers.

## Method

The EU Kids Online II survey was used to test the dimensionality and reliability of the subscales used for parental mediation in different languages/countries. In this European survey on online risks, harm and mediation, about 1,000 children and one of their parents were interviewed in 25 European countries. The survey was administered in spring/summer 2010 among children aged 9 to 16 and their parents through structured, in-home, face-to-face interviews that included a self-completion section for sensitive questions. The mediation questions were part of the face-to-face interviews (Livingstone *et al.*, 2011a).<sup>1</sup>

In the first run the questionnaire was developed in English, and approved by cognitive testing in the UK. Afterwards it was translated into the other participating languages followed by cognitive interviews in all the remaining 24 countries, with at least four children (Livingstone *et al.*, 2011b). After revising the

questionnaire again, it was pre-tested in five countries (Germany, Slovenia, Ireland, Portugal and the UK) (Livingstone *et al.*, 2011b). Regarding the translation procedure, a sophisticated technique of various steps was administered. In the national agencies that ran the survey, two researchers independently translated the questionnaire into their mother tongue, also involving the national representatives of the EU Kids Online Network. Afterwards it was back-translated into English and compared to the original (Livingstone *et al.*, 2011b). Table 1 provides an overview of the final English questionnaire items belonging to the five subscales about parental internet mediation surveyed in all 25 countries, among both children and parents.

To conduct the analyses, we selected four countries that show similar behaviours in parental mediation (Helsper *et al.*, 2013) to make sure that the focus was on comparing languages rather than countries. Then we decided to choose those languages besides English, the original language of the scale, that belong to the most spoken languages around the world: Spanish, French and German (SIL International: [www.ethnologue.com](http://www.ethnologue.com)). Hence, we decided to analyse the data from the UK, Spain, France and Germany, each consisting of about 1,000 parent-child dyads, as well as the overall European data across all languages and countries, to investigate if the scale also works independently of the country and language used. The items on parental mediation were asked among both parents and children.

Previous research has shown that mediation of children's media use is perceived differently by children and parents, especially in an absolute sense (i.e., the amount of mediation implemented), while they mostly agree in a relative sense (i.e., each mediation style is recognised by both) (Nathanson, 2001; Nikken and Jansz, 2006; Sonck *et al.*, 2013). As such differences could occur due to different perceptions of mediation, we decided to look at both parents and children's responses to make sure that the scales succeed in both cases. Data were weighted using a country weight (for the separate country analyses) or a European weight (for the overall dataset).

We analysed the dimensionality and reliability of the subscales of parental mediation in the different languages in three steps.

First, we ran an exploratory factor analysis in SPSS for all items to verify the five subscales generally. The results of this test are only summarised, as the main

<sup>1</sup> The participating countries were: Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, the Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden, Turkey and the UK. For more information on the European survey project, see [www.eukidsonline.net](http://www.eukidsonline.net).

focus of the study lies in the separate analyses of the subscales. Because of expected correlations between factors, we decided to run an oblique Promax (Kappa = 4) rotation procedure (Fabrigar *et al.*, 1999). As for all tested versions, the Kaiser-Meyer-Olkin (KMO) coefficient showed acceptable values, and as the

Bartlett's test stayed significant ( $p < 0.05$ ) as all correlations outmatched zero, our data seem to be adequate for a factor analysis (Bühner, 2006, pp. 206ff). To test the dimensionality, we interpret the Kaiser-Guttman criterion that counts all Eigenvalues above one as well as the Scree Test of Cattell.

**Table 1: Items of the five internet mediation scales in the English version (children's and parents' questionnaires)**

Subscale (Child's and parent's versions)	Items (Child's version)
<b>Active mediation of internet use: co-use</b> QC327a-e: "Does your parent/do either of your parents sometimes..." QP220a-e: "Which of the following things, if any, do you (or your partner/other carer) sometimes do with your child?" (yes/no/don't know)	Talk to you about what you do on the internet Sit with you while you use the internet Stay nearby when you use the internet Encourage you to explore and learn things on the internet on your own Do shared activities together with you on the internet
<b>Restrictive mediation</b> QC328a-f: "For each of these things, please tell me if your parents CURRENTLY let you do them whenever you want, or let you do them but only with your parent's permission or supervision, or NEVER let you do them." QP221a-f: "For each of these things, please tell me if your child is CURRENTLY allowed to do them all of the time, allowed to do them but only with your (or your partner's/other carers') permission or supervision, or never allowed to do them." (can do this any time/can only do this with permission or supervision/can never do this/don't know)	Use instant messaging Download music or films on the internet Watch video clips on the internet Have your own social networking profile Give out personal information to others on the internet Upload photos, videos or music to share with others
<b>Active mediation of internet safety</b> QC329a-f: "Has your parent/either of your parents ever done any of these things with you?" QP222a-f: "Have you (or your partner/other carer) ever done any of these things with your child?" (yes/no/don't know)	Helped you when something is difficult to do or find on the internet Explained why some websites are good or bad Suggested ways to use the internet safely Suggested ways to behave towards other people online Helped you in the past when something has bothered you on the internet Talked to you about what to do if something on the internet bothered you
<b>Monitoring</b> QC 330a-d: "When you use the internet at home, does your parent/do either of your parents sometimes check any of the following things?" QP223a-d: "When your child uses the internet at home, do you (or your partner/other carer) sometimes check any of the following things afterwards?" (yes/no/don't know)	Which websites you visited The messages in your email or instant messaging account Your profile on a social network or online community Which friends or contacts you add to social networking profile
<b>Technical mediation</b> QC331a-d: "As far as you know, does your parent/do your parents make use of any of the following for the computer that you use MOST OFTEN at home?" QP224a-d: "Do you (or your partner/carers) make use of any of the following for the computer that your child uses MOST OFTEN at home?" (yes/no/don't know)	Parental controls or other means of blocking or filtering some types of website Parental controls or other means of keeping track of the websites you visit A service or contract that limits the time you spend on the internet Software to prevent spam/junk mail or viruses

Second, we conducted similar exploratory factor analyses to test the single dimensionality of the five subscales. Additionally, we also performed confirmatory factor analyses (CFA) on the different subscales for the various languages in Mplus version 6.11 (Muthén and Muthén, 1998).

Because of the binary nature of the measures<sup>2</sup> and the presence of missing values on the scale items, the weighted least squares estimation with missing data (WLSMV estimator) was used.

<sup>2</sup> For consistency, the responses about restrictive mediation were recoded in a binary way: mediation = parents never allow particular internet activities or only with permission/supervision; no mediation = parents allow internet activities all the time.

We present multiple fit indices that show whether the hypothesised mediation subscales fitted the observed data well. To this end, the model chi-square test of good model fit is reported. Since this test statistic is highly dependent on sample size, which makes it difficult to assess the model fit for higher sample sizes (Ullman, 2006), we additionally report three other fit indices: the root mean square error of approximation (RMSEA), the Tucker-Lewis index (TLI), and confirmatory fit index (CFI). The cut-off criteria for the badness-of-fit criterion RMSEA are below 0.05 for a good model fit, and between 0.05 and 0.10 for a moderate fit. The TLI and CFI, both goodness-of-fit criteria should be close to 1, ideally above 0.95. For the chi-square test, the ratio of the chi-square value to the degrees of freedom needs to be maximally 2 or 3 for a good fit (Hu and Bentler, 1999; Schreiber *et al.*, 2006). Hence, chi-square should be closer to zero, showing a *p* value above 0.05, which indicates that the observed and the expected covariance matrices hold fewer differences.

As large sample sizes lead to significant tests, it is important to interpret other fit indices next to the chi-square test. Subsequently, the standardised (beta) and unstandardised (B) coefficients with their standard errors (SE) are presented for the confirmatory factor analyses. The unstandardised loadings should be at least twice the size of the standard errors, and the higher the standardised loadings, the higher the item correlates with the scale under study, and so the better.

Third, we conducted detailed reliability analyses of the five subscales as well as their items. For the overall subscale we looked in particular at Cronbach's alpha and KR20<sup>3</sup> that should outrange 0.7 to be acceptable, 0.8 to be good and 0.9 to be very good (George and Mallery, 2003, p. 231), but also at the average item homogeneity, item difficulty and discriminatory power. Each item is specified by its factor loading (based on the unrotated component matrix, as generally the factor analysis ended in one single factor; if more than one factor was identified, the loadings of pattern matrix were chosen), which should overtop at least 0.4 or even 0.6 (Bühl and Zöfel, 2002; Bortz, 2005). Further indices studied are: item difficulty – that should show values between 0.2 and 0.8 (Lienert and Raatz, 1998,

p. 73); item homogeneity, which should be between 0.2 and 0.4 to be acceptable (Briggs and Cheek, 1986; cf Bortz and Döring, 2003, p. 220); discriminatory power – values between 0.3 and 0.5 are acceptable, while values over 0.5 are rated as high (Bortz and Döring, 2003, p. 219); item dispersion and parameter of selection – of which the items with very small values should be eliminated (Zöfel, 2003, pp. 237ff.), and finally, the change of Cronbach's alpha if the item was deleted.

## Results, conclusion and discussion<sup>4</sup>

The analysis showed that all in all, the scales from the EU Kids Online survey on different aspects of parental mediation work quite well, although some modifications would be meaningful.

Compared to the other subscales on mediation, *the first scale about active mediation of internet use* showed rather moderate reliability indices. The CFA displayed not in all languages good model fit statistics, which might indicate potential problems with this scale (see Appendix A1.1).<sup>5</sup> The item in the parents' versions about encouraging the child to explore and learn things online performed the least well although the coefficients were still acceptable. Similarly, we identified a rather low Cronbach's alpha across different versions, although it also did not perform very poor (see Appendix A2.1). This indicator of scale reliability could be increased by revising the item on encouraging the child's internet experiences (item d), as it shows the worst indices (Appendices A3.1 and A3.2). Similar to the item on talking about online activities (item a), this seems to focus more on active internet co-use than on passive internet co-use, in the sense of observing the child while using the internet (staying and sitting nearby).

<sup>4</sup> Detailed findings can be found in the Appendix at the end of this report.

<sup>5</sup> As Appendix A1.1 illustrates, overall the fit indices for the CFA show rather moderate model fit according to RMSEA (in the English version: 0.06 for the parent's scale and 0.08 for the child's scale). Furthermore, most of the *p* values are greater than 0.05 for the chi-square test of good model fit, although this might be due to the large sample size. At several places, the TLI values drop slightly, and for the German child's version, a lot, below the 0.95 threshold for good model fit (0.709). The CFI is also well below the cut-off point for the German child's version (0.855), but for the others, this statistic remains above the acceptable limit. The versions that perform well (rather than being moderate) on all model fit indices included are the Spanish children's version and the French parents' version.

<sup>3</sup> Within SPSS the calculation of Cronbach's alpha and KR20 that is used for binary data is the same procedure. In the following we always speak of Cronbach's alpha, although for all scales, except the one on regulation, KR20 would be the right notion.



- To improve the scale reliability, adding some more items that could better grasp the broad scale of active mediation of internet use could be helpful.
- Also, a better differentiation between active and passive co-use, as well as consideration of temporal settings, might help.

We observed, for example, that the overall exploratory factor analysis including all mediation items resulted, for the German children's version, in two different dimensions, namely, a rather passive co-use style of supervision, and a more active co-use style of sharing the online activities and discussing internet use together. Although this was not found for the other versions, it might indicate that active mediation of internet use might consist of several aspects, which might additionally be perceived differently by parents and children. This corroborates the findings of Sonck *et al.* (2013), which also found confounding results for the Netherlands between how parents and children perceived the active or co-use mediation style for

internet use. Apart from the aspect of passive and active co-use, a further explanation could also lie in the temporal setting: while you can talk about the internet without using it at the same time, sitting or staying nearby requires actual use.

Below are listed possible modifications for the first scale that split active mediation in several aspects. All original items are kept, but further items are added as suggestions to elaborate on the three subscales (see Table 2). For the subscale on active mediation, we suggest adding some more items about parents recommending and discussing what happens online. Regarding co-using the internet between parents and children, additional suggestions might be to add items about giving comments and helping out when necessary. Finally, for passive co-use, additional items may be useful regarding keeping an eye and being present while the child uses the internet. These suggested additions are untranslated and still need to be tested in future research.

**Table 2: Suggestions for revising the scale on active mediation of internet use (items child's version)**

Original scale <sup>a</sup>	Recommended revised scale: active mediation of general internet use	Recommended revised scale: active co-use while using the internet	Recommended revised scale: passive co-use while using the internet
(a) Talk to you about what you do on the internet	(a) Talk to you about what you do on the internet		
(b) Sit with you while you use the internet			(b) Sit with you while you use the internet
(c) Stay nearby when you use the internet			(c) Stay nearby when you use the internet
(d) Encourage you to explore and learn things on the internet on your own	(d) Encourage you to explore and learn things on the internet on your own		
(e) Do shared activities together with you on the internet		(e) Do shared activities together with you on the internet	
	<i>Recommended additional items (untested)</i>		
	Recommend websites	Helped you when something is difficult to do or find on the internet <sup>b</sup>	Keep an eye on you while using the internet
	Discuss things that happened to you online	Asked you if you need help	Be present for questions if necessary
		Give comments about the content shared (films, games, websites)	

Notes: <sup>a</sup> Cronbach's alpha of the original scale in the English version for the parent's reports is 0.711 and for the child's reports 0.703 (for other languages, see Appendix A2.1). <sup>b</sup> Originally an item of the third scale on active mediation of internet safety (item a).

Looking at *the second scale about restrictive mediation* we recognise the highest Cronbach's alpha compared to the other subscales evaluated (Appendix A2.2). Also the CFA showed overall rather good model fit indices

(Appendix A1.2).<sup>6</sup> The reliability could be improved

even more by looking critically at the fifth item about giving out personal information online. In almost all languages tested, and also in the European version across all languages, Cronbach's alpha would rise even higher by deleting this item (Appendices A3.3 and A3.4). It seems that all the other items refer more to restrictions about actions between the provided online services and the user, while giving out personal information to others refers more to a personal interaction, and therefore does not really suit this scale. Moreover, applying restrictions on giving out personal information to others seem to focus more on safety and privacy issues in general, and might actually encompass some of the other actions (e.g., giving personal information while using instant messaging or uploading photos). Also, in Sonck *et al.*'s study (2013), based on the Dutch EU Kids Online data, putting restrictions on giving out personal information turned out to be a bit ambiguous within the restrictive mediation scale.

- Therefore, item (e) about giving out personal information to others online is evaluated rather critically, and should be deleted.
- Further, still missing within the scale on restrictive mediation is the regulation of general internet use, such as setting time restrictions. Currently, restrictive mediation focuses on restriction of online activities.

Hence, we would advise the elimination of the fifth item about online personal information (see Table 3). Moreover, we recommend creating a separate subscale containing items about regulations of time and devices for internet use, as well as about restrictions on the use of particular websites and online content, such as films and games.

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<sup>6</sup> The CFA in Appendix A1.2 shows overall rather good model fit indices for both the parents and children's scale, and across all languages studied. Only the RMSEA values for the German and Spanish children's versions just exceed the 0.05 threshold of good model fit (0.054 and 0.051 respectively). The exception is the chi-square test, as it is significant, although this might be due to the large sample size. Nevertheless, the chi-square values conform more or less the prerequisite to be a maximum of the doubled or tripled degrees of freedom, except for the overall European dataset, but this consists of more than 25.000 cases.

**Table 3: Suggestions for revising the scale on restrictive mediation (items child's version)**

Original scale <sup>a</sup>	Recommended revised scale: restrictive mediation of internet activities (being allowed to ...)	Recommended additional scale: restrictive mediation of internet use in general (items untested)
(a) Use instant messaging	(a) Use instant messaging <sup>c</sup>	Regulate the duration of internet use
(b) Download music or films on the internet	(b) Download music or films on the internet	Provide time slots in which internet can be used
(c) Watch video clips on the internet	(c) Watch video clips on the internet	Restrict the internet use to several websites
(d) Have your own social networking profile	(d) Have your own social networking profile	Regulate the internet use of other devices that can be used for being online (smartphones, tablets)
(e) Give out personal information to others on the internet <sup>b</sup>		Restrict online content (of particular films, games)
(f) Upload photos, videos or music to share with others	(f) Upload photos, videos or music to share with others	

Notes: <sup>a</sup> Cronbach's alpha of the original scale in the English version for the parent's reports is 0.877 and for the child's reports 0.895 (for other languages, see Appendix A2.2). <sup>b</sup> Item (e) should be deleted as this would increase Cronbach's alpha and the scale's content consistency. <sup>c</sup> It should be noted that particular online activities, such as instant messaging, might be less used by young people now, and therefore could be replaced by more up-to-date online activities, such as sending short messages (through services such as WhatsApp Messenger).

Regarding the *third scale on active mediation of internet safety*, the CFA did show moderate indices, but the other reliability tests performed quite well (see, respectively, Appendices A1.3 and A2.3).<sup>7</sup> Therefore, this scale seems to work well and could be kept this way, although the item concerning helping the child when something is difficult to do or find online could be eliminated, as it does not show as good values as the other items, and makes no difference to Cronbach's alpha (Appendix A3.5 and A3.6).

- This scale works fine, but the deletion of item (a) about helping when something is difficult to find online is recommended. Maybe it could be used as one aspect of the newly suggested subscales of active mediation of internet use, namely, for "Active co-use while using the internet" (see Table 4).

**Table 4: Suggestions for revising the scale on active mediation of internet safety (items child's version)**

Original scale <sup>a</sup>	Recommended revised scale: active mediation of internet safety
(a) Helped you when something is difficult to do or find on the internet <sup>b</sup>	
(b) Explained why some websites are good or bad	(b) Explained why some websites are good or bad
(c) Suggested ways to use the internet safely	(c) Suggested ways to use the internet safely
(d) Suggested ways to behave towards other people online	(d) Suggested ways to behave towards other people online
(e) Helped you in the past when something has bothered you on the internet	(e) Helped you in the past when something has bothered you on the internet
(f) Talked to you about what to do if something on the internet bothered you	(f) Talked to you about what to do if something on the internet bothered you

Notes: <sup>a</sup> Cronbach's alpha of the original scale in the English version for the parent's reports is 0.793 and for the child's reports 0.811 (for other languages, see Appendix A2.3). <sup>b</sup> Item (a) should be deleted as it does not perform as well as the other items and has no effect on Cronbach's alpha.

<sup>7</sup> Performing a CFA (Appendix A1.3), the RMSEA values show moderate fit for both the parents and children's responses in all languages tested (ranging between 0.05 and 0.09). Only for the English version, the TLI of both scales drops just below the 0.95 threshold (parents: 0.943; children: 0.939). The chi-square values are very high compared to the degrees of freedom. Only the CFI measures show good model fit, as these are above 0.95 for all languages under study.

The *fourth subscale about monitoring* also works very well (see Appendices A1.4 and A2.4).<sup>8</sup> The reliability tests do not indicate changes that could greatly improve the scale (see Table 5; see also Appendices A3.7 and A3.8).

**Table 5: Scale on monitoring (items child's version)**

Original scale <sup>a</sup> /monitoring of internet activities
(a) Which websites you visited
(b) The messages in your email or instant messaging account
(c) Your profile on a social network or online community
(d) Which friends or contacts you add to your social networking profile

Notes: <sup>a</sup> Cronbach's alpha of the original scale in the English version for the parent's reports is 0.849 and for the child's reports 0.859 (for other languages, see Appendix A2.4)

Finally, *the scale on technical mediation* performs the poorest of all subscales tested. Although the CFA show good model fit statistics, it shows the worst Cronbach's alphas (Appendices A1.5 and A2.5 respectively).<sup>9</sup> Some modifications might be necessary to improve the scale reliability (Appendices A3.9 and A3.10). In particular, the item about using software to prevent spam mail or viruses seems to measure something else, compared to the other technical mediation items included, which refer to blocking/filtering websites, keeping track of websites and limiting time spent online. In Sonck *et al.*'s study (2013) based on the Netherlands, it was also observed that this item about virus software was perceived differently by parents and children. Whereas parents considered this a restrictive mediation technique, children related this item more to giving out personal information online. Here, we additionally found that the item about limiting time online did not seem to fit the technical mediation scale perfectly. This might be due to the fact that the techniques for blocking websites and keeping track of

them refer to technical restrictions on particular content online, while limiting time restricts all internet use. Therefore, we suggest splitting the original scale in a subscale on technical mediation of internet use on the one hand, maintaining the original items about parental controls and time limiting service (see Table 6). We recommend an additional item about recording the online activities to complement this subscale. On the other hand, a separate subscale could be created on the protection of internet access, containing the item that performed the poorest on the original scale, about virus software. Some items on regularly updating software and using a child-friendly internet device could be added. These recommended subscales and suggestions for additional items require further testing, however.

- Installing virus software might be regarded as a general safety action related to computers in general, and less with the safety issues involved with particular online actions by children. Therefore, it could a separate aspect, and should be eliminated from the original scale.

<sup>8</sup> In the CFA (Appendix A1.4), the child's subscale of monitoring shows a good model fit in the English version, while the parent's scale shows a rather moderate RMSEA value (0.022 for the child's version and 0.076 for the parent's version). This is confirmed by the Spanish and overall European version. The French and German versions show rather moderate RMSEA levels for both the parents and children's reports. However, for all languages and across countries, the other CFI and TLI indices are above the 0.95 threshold of good model fit.

<sup>9</sup> The CFA (Appendix A1.5) resulted in good model fit statistics in the different languages, and for both the parents and child's versions of the subscale on technical mediation. Only for the German parents' version, the CFI and TLI fit indices score below the cut-off point (0.915 and 0.745 respectively).



**Table 6: Suggestions for revising the scale on technical mediation (items child's version)**

Original scale <sup>a</sup>	Recommended revised scale: technical mediation of internet use	Recommended additional scale: technical mediation of protecting the internet access
(a) Parental controls or other means of blocking or filtering some types of website	(a) Parental controls or other means of blocking or filtering some types of website	
(b) Parental controls or other means of keeping track of the websites you visit	(b) Parental controls or other means of keeping track of the websites you visit	
(c) A service or contract that limits the time you spend on the internet	(c) A service or contract that limits the time you spend on the internet <sup>b</sup>	
(d) Software to prevent spam/junk mail or viruses		(d) Software to prevent spam/junk mail or viruses
	<i>Recommended items (untested)</i>	
	Using software to record/log all activities online	Updating software regularly on all devices to go online (including smartphone, tablet)
		Using a device (smartphone, tablet) specifically designed for children (with restricted online access)

Notes: <sup>a</sup> Cronbach's alpha of the original scale in the English version for the parent's reports is 0.657 and for the child's reports 0.718 (for other languages, see Appendix A2.5). <sup>b</sup> Item (c) does not really fit this scale; maybe it can be left out, when restrictive actions of general internet use are added as suggested in Table 3.

Overall, the scales work rather similarly in all languages and across languages. Although the overall mediation scale did show some deviations in the German version, based on which we recommended possible changes, the results for the five subscales did not differ greatly between the languages. Small differences observed in our study between the languages could be due to slight translation differences or cultural differences in the interpretation of the mediation items. However, these differences did not turn out to have a significant impact on the reliability of the scales.

Furthermore, there are also no considerable differences between the parents and child's version. Therefore, the implementation of the mediation subscales in questionnaires translated in their national language can be recommended, without expecting a great decrease in reliability. This is supported by considering that although we focused in this report on a selection of European countries that clustered in a similar way regarding online risks, harm and mediation (Helsper *et al.*, 2013), the findings also corroborate with the study on parental mediation in the Netherlands, which is characterised by a focus on more active mediation compared to a focus on restrictive mediation in the largest European cluster (Sonck *et al.*, 2013).

Finally, it might perhaps help to improve the scale reliability by changing the binary responses (yes/no) to *ordinal response scales*. For the restrictive mediation scale, three response options (no, yes sometimes, yes always) were used that could also be applied to the other scales. This was not done within the original questionnaire, as it was already very long, focusing on risks and harm, and therefore it was necessary to not vastly extend the length of, in particular, the child interview. A more Likert-type five-point response scale might lead to even more differentiated answers from parents and children, considering that it might be harder for children to answer on a broader scale.

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## Appendix

### A1. Confirmatory factor analysis

#### A1.1. Confirmatory factor analysis for the subscale on active mediation of internet use

Language	Questionnaire	Number of items	RMSEA	Confidence interval RMSEA	Chi <sup>2</sup> (df); p	CFI	TLI
English	P	5	0.06	[0.033; 0.08]	21.034 (5); p=0.0008	0.986	0.972
	C	5	0.08	[0.057; 0.11]	37.937 (5); p=0.0000	0.967	0.934
French	P	5	0.03	[0; 0.058]	9.002 (5); p=0.1090	0.994	0.988
	C	5	0.06	[0.036; 0.086]	22.702 (5); p=0.0004	0.979	0.958
Spanish	P	5	0.07	[0.048; 0.096]	30.981 (5); p=0.0000	0.983	0.967
	C	5	0.05	[0.024; 0.074]	16.669 (5); p=0.0052	0.994	0.988
German	P	5	0.07	[0.046; 0.094]	29.396 (5); p=0.000	0.968	0.937
	C	5	0.10	[0.077; 0.123]	55.239 (5); p=0.000	0.855	0.709
EU25	P	5	0.05	[0.042; 0.052]	281.729 (5); p=0.000	0.972	0.944
	C	5	0.06	[0.052; 0.062]	408.294(5); p=0.0000	0.966	0.932

	English			French			Spanish			German			EU25		
Item	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE
P220a	0.71	1	0	0.67	1.00	0.00	0.64	1.00	0.00	0.67	1.00	0.00	0.66	1.00	0.00
C327a	0.72	1	0	0.75	1.00	0.00	0.60	1.00	0.00	0.54	1.00	0.00	0.53	1.00	0.00
P220b	0.93	1.3	0.11	0.87	1.31	0.14	0.88	1.37	0.11	0.90	1.34	0.14	0.76	1.15	0.03
C327b	0.81	1.13	0.09	0.84	1.11	0.09	0.95	1.57	0.13	0.79	1.46	0.18	0.83	1.58	0.04
P220c	0.84	1.17	0.1	0.68	1.02	0.12	0.90	1.40	0.12	0.84	1.25	0.13	0.68	1.03	0.03
C327c	0.77	1.07	0.09	0.76	1.01	0.09	0.91	1.51	0.12	0.56	1.04	0.15	0.75	1.42	0.04
P220d	0.55	0.77	0.09	0.51	0.77	0.11	0.70	1.09	0.10	0.46	0.68	0.10	0.54	0.83	0.03
C327d	0.61	0.85	0.09	0.54	0.72	0.08	0.66	1.10	0.10	0.65	1.20	0.17	0.57	1.09	0.03
P220e	0.72	1	0.09	0.78	1.17	0.13	0.79	1.24	0.11	0.61	0.91	0.11	0.72	1.10	0.03
C327e	0.83	1.16	0.09	0.74	0.98	0.08	0.74	1.24	0.11	0.59	1.09	0.16	0.70	1.34	0.04

#### A1.2. Confirmatory factor analysis for the subscale on restrictive mediation

Language	Questionnaire	Number of items	RMSEA	Confidence interval RMSEA	Chi <sup>2</sup> (df); p	CFI	TLI
English	P	6	0.033	[0.011; 0.054]	18.897 (9); p=0.0261	0.998	0.997
	C	6	0.049	[0.031; 0.068]	31.117 (9); p=0.0003	0.998	0.996
French	P	6	0.043	[0.024; 0.063]	25.922 (9); p=0.0021	0.996	0.994
	C	6	0.037	[0.017; 0.058]	21.482 (9); p=0.0107	0.997	0.995
Spanish	P	6	0.046	[0.028; 0.066]	28.636 (9); p=0.0007	0.996	0.994
	C	6	0.051	[0.033; 0.07]	32.774 (9); p=0.0001	0.998	0.996
German	P	6	0.043	[0.024; 0.063]	25.720 (9); p=0.0023	0.996	0.994
	C	6	0.054	[0.036; 0.073]	35.673 (9); p=0.0000	0.996	0.993
EU25	P	6	0.041	[0.038; 0.045]	391.663 (9); p=0.0000	0.994	0.990
	C	6	0.032	[0.029; 0.036]	238.317 (9); p=0.0000	0.996	0.994

	English			French			Spanish			German			EU25		
Item	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE
P221a	0.95	1.00	0	0.93	1.00	0.00	0.92	1.00	0.00	0.91	1.00	0.00	0.87	1.00	0.00
C328a	0.96	1.00	0	0.90	1.00	0.00	0.93	1.00	0.00	0.93	1.00	0.00	0.89	1.00	0.00
P221b	0.84	0.89	0.03	0.82	0.88	0.04	0.90	0.98	0.03	0.87	0.95	0.04	0.85	0.97	0.01
C328b	0.87	0.91	0.03	0.85	0.95	0.04	0.93	1.00	0.03	0.93	1.00	0.03	0.87	0.98	0.01
P221c	0.91	0.96	0.03	0.92	0.99	0.04	0.91	0.98	0.03	0.92	1.01	0.03	0.89	1.02	0.01
C328c	0.95	0.99	0.02	0.87	0.97	0.03	0.93	1.00	0.02	0.92	0.98	0.03	0.91	1.03	0.01
P221d	0.93	0.98	0.03	0.89	0.96	0.04	0.91	1.00	0.03	0.91	1.00	0.04	0.89	1.02	0.01
C328d	0.93	0.97	0.02	0.93	1.03	0.03	0.95	1.03	0.02	0.91	0.98	0.03	0.90	1.02	0.01
P221e	0.88	0.93	0.06	0.89	0.96	0.06	0.66	0.78	0.06	0.86	0.95	0.04	0.77	0.88	0.01
C328e	0.91	0.95	0.03	0.83	0.91	0.05	0.79	0.86	0.05	0.85	0.92	0.04	0.79	0.89	0.00

## A1.3. Confirmatory factor analysis for the subscale on active mediation of internet safety

Language	Questionnaire	Number of items	RMSEA	Confidence interval RMSEA	Chi <sup>2</sup> (df); p	CFI	TLI
English	P	6	0.083	[0.066; 0.102]	73.253 (9); p=0.0000	0.966	0.943
	C	6	0.083	[0.066; 0.101]	72.699 (9); p=0.0000	0.964	0.939
French	P	6	0.055	[0.037; 0.075]	36.452 (9); p=0.0000	0.983	0.972
	C	6	0.055	[0.037; 0.074]	36.326 (9); p=0.0000	0.983	0.971
Spanish	P	6	0.052	[0.034; 0.071]	34.136 (9); p=0.0001	0.989	0.982
	C	6	0.069	[0.052; 0.087]	52.585 (9); p=0.0000	0.988	0.980
German	P	6	0.087	[0.07; 0.105]	79.112 (9); p=0.0000	0.971	0.951
	C	6	0.056	[0.039; 0.075]	38.139 (9); p=0.0000	0.982	0.971
EU25	P	6	0.054	[0.051; 0.058]	667.259 (9); p=0.0000	0.983	0.972
	C	6	0.052	[0.048; 0.055]	606.262 (9); p=0.0000	0.987	0.979

Item	English			French			Spanish			German			EU25		
	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE
P222a	0.62	1.00	0.00	0.62	1.00	0.00	0.57	1.00	0.00	0.73	1.00	0.00	0.65	1.00	0.00
C329a	0.60	1.00	0.00	0.68	1.00	0.00	0.64	1.00	0.00	0.62	1.00	0.00	0.69	1.00	0.00
P222b	0.87	1.41	0.11	0.88	1.41	0.13	0.85	1.50	0.13	0.85	1.17	0.08	0.85	1.30	0.02
C329b	0.84	1.41	0.12	0.81	1.20	0.09	0.88	1.37	0.09	0.80	1.29	0.10	0.85	1.24	0.02
P222c	0.87	1.41	0.11	0.85	1.36	0.12	0.91	1.61	0.13	0.86	1.18	0.08	0.86	1.32	0.02
C329c	0.85	1.42	0.12	0.84	1.24	0.09	0.95	1.48	0.10	0.79	1.26	0.10	0.87	1.27	0.02
P222d	0.79	1.28	0.11	0.79	1.26	0.11	0.84	1.48	0.12	0.89	1.23	0.08	0.82	1.26	0.02
C329d	0.80	1.34	0.12	0.81	1.18	0.09	0.85	1.32	0.09	0.87	1.40	0.10	0.81	1.18	0.02
P222e	0.81	1.32	0.12	0.70	1.12	0.12	0.77	1.37	0.12	0.87	1.20	0.09	0.77	1.18	0.02
C329e	0.76	1.26	0.12	0.71	1.04	0.10	0.86	1.34	0.10	0.82	1.32	0.12	0.82	1.19	0.02
P222f	0.83	1.35	0.11	0.85	1.37	0.12	0.78	1.38	0.12	0.89	1.23	0.08	0.85	1.30	0.02
C329f	0.87	1.45	0.12	0.81	1.20	0.09	0.84	1.31	0.09	0.80	1.28	0.11	0.87	1.27	0.02

## A1.4. Confirmatory factor analysis for the subscale on monitoring

Language	Questionnaire	Number of items	RMSEA	Confidence interval RMSEA	Chi <sup>2</sup> (df); p	CFI	TLI
English	P	4	0.076	[0.04; 0.118]	12.811 (2); p=0.0017	0.998	0.995
	C	4	0.022	[0; 0.08]	2.728 (2); p=0.2557	1	0.999
French	P	4	0.062	[0.026; 0.105]	9.283 (2); p=0.0096	0.998	0.993
	C	4	0.092	[0.054; 0.135]	16.448 (2); p=0.0003	0.991	0.974
Spanish	P	4	0.09	[0.052; 0.135]	15.487 (2); p=0.0004	0.993	0.978
	C	4	0.028	[0; 0.082]	3.214 (2); p=0.2005	0.999	0.997
German	P	4	0.11	[0.075; 0.15]	26.155 (2); p=0.0000	0.990	0.969
	C	4	0.096	[0.06; 0.137]	19.350 (2); p=0.0001	0.992	0.975
EU25	P	4	0.082	[0.074; 0.09]	304.564 (2); p=0.0000	0.993	0.979
	C	4	0.04	[0.032; 0.049]	66.581 (2); p=0.0000	0.997	0.992

Item	English			French			Spanish			German			EU25		
	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE
P223a	0.86	1.00	0.00	0.74	1.00	0.00	0.81	1.00	0.00	0.81	1.00	0.00	0.78	1.00	0.00
C330a	0.90	1.00	0.00	0.74	1.00	0.00	0.82	1.00	0.00	0.86	1.00	0.00	0.85	1.00	0.00
P223b	0.89	1.03	0.04	0.90	1.22	0.08	0.86	1.07	0.06	0.89	1.11	0.06	0.85	1.09	0.02
C330b	0.93	1.03	0.05	0.91	1.23	0.10	0.92	1.12	0.07	0.95	1.11	0.07	0.90	1.06	0.02
P223c	0.95	1.11	0.04	0.96	1.30	0.08	0.92	1.14	0.06	0.91	1.13	0.06	0.93	1.18	0.01
C330c	0.94	1.04	0.04	0.94	1.27	0.09	0.94	1.14	0.06	0.93	1.09	0.05	0.92	1.08	0.01
P223d	1.00	1.16	0.04	0.96	1.28	0.08	0.91	1.13	0.06	0.95	1.18	0.06	0.95	1.22	0.01
C330d	0.95	1.05	0.04	0.96	1.29	0.08	0.91	1.11	0.07	0.93	1.09	0.06	0.93	1.10	0.01



## A1.5. Confirmatory factor analysis for the subscale on technical mediation

Language	Questionnaire	Number of items	RMSEA	Confidence interval RMSEA	Chi <sup>2</sup> (df); <i>p</i>	CFI	TLI
English	P	4	0	[0; 0.058]	0.739 (2); <i>p</i> =0.6911	1	1.006
	C	4	0.012	[0; 0.082]	2.165 (2); <i>p</i> =0.3388	1	0.999
French	P	4	0	[0; 0.073]	1.507 (2); <i>p</i> =0.4707	1	1.005
	C	4	0	[0; 0.04]	.262 (2); <i>p</i> =0.8772	1	1.009
Spanish	P	4	0	[0; 0.056]	0.658 (2); <i>p</i> =0.7195	1	1.013
	C	4	0	[0; 0.052]	0.522 (2); <i>p</i> =0.7701	1	1.004
German	P	4	0.044	[0; 0.094]	4.967 (2); <i>p</i> =0.0835	0.915	0.745
	C	4	0	[0; 0.068]	1.681 (2); <i>p</i> =0.4314	1	1.001
EU25	P	4	0.02	[0.011; 0.029]	15.134 (2); <i>p</i> =0.0005	0.998	0.993
	C	4	0.033	[0.024; 0.043]	37.694 (2); <i>p</i> =0.0000	0.995	0.985

Item	English			French			Spanish			German			EU25		
	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE
P224a	0.88	1.00	0.00	0.79	1.00	0.00	1.08	1.00	0.00	0.72	1.00	0.00	0.88	1.00	0.00
C331a	0.89	1.00	0.00	0.93	1.00	0.00	0.80	1.00	0.00	0.92	1.00	0.00	0.90	1.00	0.00
P224b	0.94	1.07	0.09	0.97	1.22	0.24	0.75	0.69	0.13	0.61	0.85	0.31	0.86	0.98	0.03
C331b	1.00	1.12	0.12	0.92	0.99	0.14	1.18	1.48	0.27	0.96	1.04	0.07	0.93	1.04	0.04
P224c	0.69	0.78	0.08	0.55	0.69	0.15	0.45	0.41	0.13	0.50	0.70	0.28	0.53	0.60	0.03
C331c	0.65	0.73	0.09	0.74	0.79	0.11	0.51	0.65	0.17	0.70	0.75	0.08	0.61	0.68	0.03
P224d	0.51	0.58	0.10	0.43	0.54	0.12	0.43	0.40	0.13	-0.21	-0.30	0.19	0.47	0.53	0.03
C331d	0.51	0.58	0.09	0.44	0.47	0.10	0.41	0.52	0.12	0.38	0.41	0.10	0.48	0.54	0.02

## A2. Reliability analyses of the subscales

### A2.1. Reliability analysis for the subscale on active mediation of internet use

Language	Questionnaire	Number of items	Cronbach's alpha	Mean	SD	Homogeneity of scale	Scale difficulty	Item discrimination
English	P	5	0.711	3.05	1.604	0.331	0.611	0.679
	C	5	0.703	2.69	1.642	0.321	0.535	0.668
French	P	5	0.676	3.11	1.544	0.296	0.622	0.660
	C	5	0.714	2.82	1.658	0.332	0.563	0.680
Spanish	P	5	0.731	3.06	1.634	0.347	0.611	0.706
	C	5	0.744	2.82	1.697	0.367	0.567	0.697
German	P	5	0.650	3.07	1.514	0.270	0.613	0.640
	C	5	0.580	1.93	1.439	0.218	0.385	0.623
EU25	P	5	0.715	2.90	1.633	0.333	0.578	0.680
	C	5	0.728	2.61	1.691	0.347	0.521	0.687

### A2.2. Reliability analysis for the subscale on restrictive mediation

Language	Questionnaire	Number of items	Cronbach's alpha	Mean	SD	Homogeneity of scale	Scale difficulty	Item discrimination
English	P	6	0.877	5.58	3.848	0.534	0.477	0.683
	C	6	0.895	5.40	4.026	0.581	0.464	0.717
French	P	6	0.840	6.38	3.599	0.463	0.540	0.619
	C	6	0.852	5.69	3.709	0.484	0.487	0.637
Spanish	P	6	0.826	5.67	3.585	0.430	0.487	0.594
	C	6	0.852	4.87	3.549	0.482	0.425	0.639
German	P	6	0.870	6.50	3.603	0.528	0.564	0.670
	C	6	0.869	6.187	3.671	0.521	0.536	0.668
EU25	P	6	0.857	5.56	3.67	0.495	0.484	0.645
	C	6	0.876	4.90	3.799	0.537	0.439	0.680

## A2.3. Reliability analysis for the subscale on active mediation of safety

Language	Questionnaire	Number of items	Cronbach's alpha	Mean	SD	Homogeneity of scale	Scale difficulty	Item discrimination
English	P	6	0.793	3.76	1.961	0.391	0.631	0.703
	C	6	0.811	3.70	2.050	0.417	0.623	0.697
French	P	6	0.765	3.83	1.852	0.352	0.644	0.670
	C	6	0.778	3.31	1.969	0.367	0.572	0.675
Spanish	P	6	0.810	3.50	2.061	0.418	0.585	0.707
	C	6	0.828	3.53	2.12	0.447	0.601	0.669
German	P	6	0.793	4.41	1.807	0.393	0.736	0.692
	C	6	0.773	2.87	1.938	0.360	0.478	0.669
EU25	P	6	0.825	3.66	2.082	0.441	0.613	0.723
	C	6	0.832	3.33	2.149	0.451	0.567	0.725

## A2.4. Reliability analysis for the subscale on monitoring

Language	Questionnaire	Number of items	Cronbach's alpha	Mean	SD	Homogeneity of scale	Scale difficulty	Item discrimination
English	P	4	0.849	1.77	1.636	0.585	0.458	0.813
	C	4	0.859	1.52	1.615	0.604	0.450	0.803
French	P	4	0.797	1.48	1.508	0.495	0.408	0.763
	C	4	0.772	0.98	1.312	0.464	0.311	0.750
Spanish	P	4	0.822	1.67	1.577	0.536	0.440	0.791
	C	4	0.877	1.26	1.584	0.644	0.364	0.792
German	P	4	0.776	1.36	1.439	0.470	0.352	0.767
	C	4	0.808	1.05	1.389	0.518	0.307	0.770
EU25	P	4	0.821	1.59	1.561	0.535	0.416	0.790
	C	4	0.851	1.28	1.539	0.590	0.368	0.792

## A2.5. Reliability analysis for the subscale on technical mediation

Language	Questionnaire	Number of items	Cronbach's alpha	Mean	SD	Homogeneity of scale	Scale difficulty	Item discrimination
English	P	4	0.657	2.04	1.251	0.309	0.512	0.68
	C	4	0.718	1.77	1.332	0.378	0.460	0.681
French	P	4	0.604	1.64	1.141	0.264	0.415	0.660
	C	4	0.633	1.48	1.134	0.290	0.386	0.641
Spanish	P	4	0.575	1.41	1.017	0.237	0.643	0.643
	C	4	0.581	1.11	0.979	0.270	0.284	0.601
German	P	4	0.342	1.15	0.896	0.141	0.288	0.590
	C	4	0.629	1.34	1.104	0.304	0.345	0.618
EU25	P	4	0.619	1.46	1.153	0.286	0.368	0.677
	C	4	0.673	1.32	1.173	0.345	0.344	0.647

## A3. Item analyses in other languages and across countries

### A3.1. Item analyses for active mediation of internet use (parents' version)

Item P220a-e		Factor loading	Item difficulty	Item homogeneity (mean)	Item discrimi- nation	Item dispersion	Parameter of selection	Cronbach's alpha, if item is deleted
English	a	0.632	0.838	0.305	0.602	0.370	0.813	0.682
	b	0.755	0.501	0.373	0.746	0.500	0.746	0.629
	c	0.747	0.615	0.368	0.732	0.487	0.751	0.634
	d	0.624	0.626	0.300	0.646	0.485	0.666	0.686
	e	0.648	0.477	0.310	0.670	0.500	0.670	0.677
French	a	0.630	0.852	0.283	0.589	0.357	0.824	0.640
	b	0.745	0.520	0.342	0.726	0.500	0.726	0.585
	c	0.684	0.632	0.305	0.682	0.483	0.706	0.619
	d	0.526	0.627	0.229	0.588	0.483	0.608	0.676
	e	0.715	0.478	0.327	0.713	0.500	0.713	0.598
Spanish	a	0.510	0.806	0.246	0.544	0.393	0.691	0.738
	b	0.780	0.588	0.402	0.780	0.492	0.792	0.648
	c	0.772	0.696	0.396	0.761	0.461	0.826	0.653
	d	0.654	0.467	0.325	0.694	0.499	0.695	0.700
	e	0.729	0.499	0.368	0.749	0.500	0.749	0.670
German	a	0.562	0.874	0.227	0.510	0.334	0.764	0.631
	b	0.785	0.521	0.342	0.746	0.500	0.746	0.528
	c	0.750	0.540	0.320	0.722	0.499	0.724	0.551
	d	0.481	0.567	0.195	0.570	0.496	0.575	0.655
	e	0.629	0.565	0.268	0.655	0.496	0.661	0.600
EU25	a	0.611	0.814	0.293	0.592	0.389	0.760	0.693
	b	0.751	0.484	0.372	0.735	0.500	0.735	0.638
	c	0.735	0.579	0.362	0.721	0.494	0.730	0.646
	d	0.606	0.549	0.291	0.641	0.498	0.644	0.697
	e	0.707	0.465	0.348	0.710	0.499	0.712	0.656

### A3.2. Item analyses for active mediation of internet use (children's version)

Item C327a-e		Factor loading	Item difficulty	Item homogeneity (mean)	Item discrimination	Item dispersion	Parameter of selection	Cronbach's alpha if item is deleted
English	a	0.634	0.738	0.299	0.621	0.443	0.701	0.668
	b	0.756	0.451	0.386	0.727	0.498	0.730	0.619
	c	0.698	0.568	0.328	0.683	0.495	0.690	0.648
	d	0.605	0.516	0.284	0.626	0.500	0.626	0.681
	e	0.683	0.401	0.325	0.681	0.491	0.694	0.651
French	a	0.635	0.737	0.306	0.637	0.439	0.726	0.683
	b	0.738	0.482	0.363	0.718	0.500	0.718	0.644
	c	0.703	0.592	0.343	0.691	0.492	0.702	0.659
	d	0.613	0.556	0.294	0.64	0.497	0.644	0.692
	e	0.721	0.447	0.355	0.712	0.498	0.715	0.648
Spanish	a	0.594	0.705	0.300	0.613	0.456	0.672	0.736
	b	0.803	0.506	0.436	0.78	0.500	0.780	0.654
	c	0.734	0.702	0.384	0.711	0.460	0.772	0.690
	d	0.669	0.486	0.346	0.679	0.500	0.679	0.712
	e	0.706	0.434	0.367	0.703	0.496	0.709	0.698
German	a	0.768 <sup>a</sup>	0.611	0.191	0.586	0.488	0.601	0.553
	b	0.754 <sup>b</sup>	0.304	0.262	0.668	0.460	0.726	0.478
	c	0.890 <sup>b</sup>	0.416	0.198	0.596	0.493	0.604	0.545
	d	0.693 <sup>a</sup>	0.318	0.221	0.603	0.448	0.673	0.522
	e	0.628 <sup>a</sup>	0.277	0.219	0.65	0.466	0.698	0.525
EU25	a	0.591	0.696	0.29	0.613	0.458	0.669	0.715
	b	0.753	0.438	0.384	0.73	0.496	0.736	0.656
	c	0.725	0.577	0.365	0.71	0.495	0.718	0.669
	d	0.657	0.473	0.329	0.67	0.499	0.671	0.694
	e	0.725	0.423	0.367	0.714	0.494	0.722	0.668

<sup>a</sup> First factor within the exploratory factor analysis.

<sup>b</sup> Second factor within the exploratory factor analysis.

## A3.3. Item analyses for restrictive mediation (parents' version)

Item P221a-f	Factor loading	Item difficulty	Item homogeneity (mean)	Item discrimination	Item dispersion	Parameter of selection	Cronbach's alpha if item is deleted
English	a	0.862	0.337	0.595	0.775	0.456	0.840
	b	0.772	0.490	0.526	0.663	0.387	0.860
	c	0.808	0.302	0.549	0.707	0.462	0.853
	d	0.861	0.359	0.595	0.772	0.444	0.840
	e	0.543	0.832	0.357	0.430	0.347	0.892
	f	0.839	0.544	0.585	0.751	0.429	0.844
French	a	0.781	0.317	0.488	0.660	0.410	0.805
	b	0.735	0.631	0.459	0.604	0.359	0.817
	c	0.713	0.283	0.436	0.581	0.403	0.821
	d	0.821	0.525	0.522	0.708	0.383	0.795
	e	0.605	0.865	0.365	0.473	0.390	0.839
	f	0.801	0.623	0.509	0.686	0.403	0.799
Spanish	a	0.782	0.272	0.466	0.651	0.420	0.787
	b	0.785	0.423	0.468	0.651	0.360	0.786
	c	0.746	0.278	0.439	0.606	0.391	0.796
	d	0.809	0.489	0.492	0.689	0.375	0.777
	e	0.434	0.886	0.247	0.318	0.270	0.844
	f	0.773	0.574	0.468	0.649	0.366	0.787
German	a	0.825	0.479	0.566	0.729	0.436	0.838
	b	0.727	0.657	0.488	0.606	0.394	0.859
	c	0.748	0.347	0.502	0.635	0.432	0.854
	d	0.812	0.505	0.554	0.710	0.413	0.842
	e	0.757	0.733	0.508	0.643	0.431	0.853
	f	0.802	0.659	0.55	0.699	0.456	0.844
EU25	a	0.803	0.332	0.523	0.689	0.421	0.824
	b	0.764	0.487	0.496	0.644	0.373	0.833
	c	0.772	0.304	0.498	0.652	0.432	0.832
	d	0.825	0.420	0.545	0.719	0.406	0.818
	e	0.586	0.790	0.368	0.462	0.332	0.862
	f	0.809	0.569	0.537	0.706	0.412	0.821

## A3.4. Item analyses for restrictive mediation (children's version)

Item C328a-f	Factor loading	Item difficulty	Item homogeneity (mean)	Item discrimination	Item dispersion	Parameter of selection	Cronbach's alpha if item is deleted
English	a	0.866	0.322	0.628	0.785	0.455	0.865
	b	0.802	0.510	0.579	0.708	0.410	0.878
	c	0.826	0.296	0.592	0.735	0.466	0.874
	d	0.857	0.345	0.620	0.773	0.441	0.867
	e	0.621	0.784	0.434	0.512	0.349	0.904
	f	0.863	0.530	0.633	0.788	0.438	0.864
French	a	0.767	0.269	0.490	0.645	0.399	0.825
	b	0.778	0.551	0.500	0.660	0.373	0.823
	c	0.733	0.239	0.463	0.607	0.418	0.833
	d	0.822	0.468	0.538	0.715	0.384	0.812
	e	0.591	0.839	0.365	0.465	0.358	0.855
	f	0.834	0.555	0.547	0.735	0.412	0.807
Spanish	a	0.784	0.224	0.498	0.660	0.452	0.824
	b	0.806	0.343	0.519	0.686	0.406	0.818
	c	0.764	0.217	0.483	0.636	0.467	0.829
	d	0.845	0.416	0.555	0.750	0.415	0.804
	e	0.490	0.853	0.299	0.377	0.287	0.868
	f	0.822	0.496	0.539	0.724	0.409	0.810
German	a	0.824	0.443	0.553	0.730	0.418	0.827
	b	0.818	0.606	0.497	0.657	0.415	0.772
	c	0.829	0.317	0.508	0.643	0.433	0.756
	d	0.804	0.452	0.591	0.716	0.413	0.815
	e	0.868	0.769	0.420	0.552	0.391	0.675
	f	0.810	0.630	0.555	0.710	0.450	0.812
EU25	a	0.767	0.289	0.559	0.711	0.435	0.849
	b	0.778	0.440	0.548	0.693	0.402	0.852
	c	0.733	0.265	0.540	0.685	0.457	0.854
	d	0.822	0.375	0.586	0.750	0.428	0.842
	e	0.591	0.753	0.406	0.496	0.331	0.882
	f	0.834	0.508	0.583	0.747	0.427	0.842



## A3.5. Item analyses for active mediation of safety (parents' version)

Item P222a-f		Factor loading	Item difficulty	Item homogeneity (mean)	Item discrimination	Item dispersion	Parameter of selection	Cronbach's alpha, if item is deleted
English	a	0.566	0.681	0.307	0.597	0.469	0.637	0.792
	b	0.731	0.758	0.410	0.719	0.431	0.834	0.755
	c	0.773	0.730	0.438	0.751	0.448	0.838	0.744
	d	0.744	0.645	0.414	0.733	0.479	0.765	0.751
	e	0.625	0.362	0.340	0.656	0.480	0.684	0.779
	f	0.765	0.609	0.435	0.763	0.489	0.779	0.741
French	a	0.803	0.332	0.523	0.689	0.819	0.421	0.824
	b	0.764	0.487	0.496	0.644	0.862	0.373	0.833
	c	0.772	0.304	0.498	0.652	0.754	0.432	0.832
	d	0.825	0.420	0.545	0.719	0.886	0.406	0.818
	e	0.586	0.790	0.368	0.462	0.695	0.332	0.862
	f	0.809	0.569	0.537	0.706	0.855	0.412	0.821
Spanish	a	0.572	0.600	0.324	0.595	0.491	0.605	0.812
	b	0.753	0.752	0.441	0.715	0.437	0.817	0.774
	c	0.794	0.596	0.470	0.772	0.490	0.788	0.762
	d	0.786	0.632	0.465	0.762	0.484	0.786	0.763
	e	0.679	0.348	0.395	0.691	0.478	0.722	0.788
	f	0.716	0.581	0.413	0.709	0.494	0.718	0.782
German	a	0.615	0.829	0.337	0.593	0.381	0.779	0.782
	b	0.689	0.846	0.384	0.654	0.363	0.902	0.768
	c	0.747	0.741	0.423	0.734	0.440	0.833	0.751
	d	0.760	0.755	0.43	0.735	0.434	0.847	0.746
	e	0.669	0.525	0.369	0.702	0.500	0.702	0.772
	f	0.737	0.726	0.415	0.735	0.445	0.826	0.750
EU25	a	0.625	0.653	0.369	0.639	0.477	0.670	0.820
	b	0.770	0.733	0.468	0.745	0.444	0.840	0.789
	c	0.782	0.668	0.477	0.762	0.472	0.807	0.785
	d	0.777	0.641	0.472	0.757	0.481	0.787	0.786
	e	0.656	0.379	0.389	0.673	0.486	0.693	0.813
	f	0.772	0.606	0.473	0.761	0.490	0.777	0.786

## A3.6. Item analyses for active mediation of safety (children's version)

Item C329a-f		Factor loading	Item difficulty	Item homogeneity (mean)	Item discrimination	Item dispersion	Parameter of selection	Cronbach's alpha if item is deleted
English	a	0.598	0.733	0.339	0.58	0.455	0.637	0.807
	b	0.726	0.724	0.423	0.689	0.460	0.750	0.780
	c	0.770	0.712	0.454	0.735	0.461	0.796	0.769
	d	0.749	0.586	0.435	0.73	0.492	0.606	0.775
	e	0.675	0.409	0.387	0.686	0.495	0.813	0.792
	f	0.780	0.574	0.462	0.759	0.494	0.639	0.764
French	a	0.766	0.730	0.312	0.588	0.457	0.644	0.772
	b	0.739	0.715	0.383	0.689	0.464	0.742	0.727
	c	0.734	0.599	0.395	0.718	0.494	0.726	0.725
	d	0.734	0.547	0.395	0.721	0.499	0.722	0.714
	e	0.770	0.269	0.300	0.598	0.443	0.675	0.756
	f	0.725	0.571	0.414	0.738	0.498	0.741	0.738
Spanish	a	0.585	0.652	0.339	0.611	0.482	0.634	0.831
	b	0.766	0.738	0.423	0.714	0.456	0.782	0.795
	c	0.806	0.688	0.454	0.776	0.468	0.829	0.784
	d	0.782	0.586	0.435	0.762	0.494	0.770	0.791
	e	0.698	0.386	0.387	0.712	0.488	0.729	0.808
	f	0.764	0.553	0.462	0.437	0.498	0.439	0.793
German	a	0.541	0.683	0.276	0.611	0.466	0.656	0.772
	b	0.726	0.625	0.388	0.714	0.484	0.737	0.727
	c	0.737	0.558	0.393	0.776	0.497	0.781	0.725
	d	0.772	0.439	0.416	0.762	0.496	0.767	0.714
	e	0.618	0.198	0.320	0.712	0.398	0.894	0.756
	f	0.699	0.364	0.369	0.437	0.481	0.454	0.738
EU25	a	0.622	0.662	0.371	0.627	0.478	0.656	0.828
	b	0.762	0.675	0.469	0.740	0.475	0.779	0.799
	c	0.781	0.631	0.483	0.763	0.486	0.785	0.794
	d	0.777	0.557	0.479	0.760	0.498	0.763	0.795
	e	0.694	0.355	0.419	0.693	0.479	0.723	0.814
	f	0.779	0.522	0.482	0.765	0.500	0.765	0.794

## A3.7. Item analyses for monitoring (parents' version)

Item P223a-d		Factor loading	Item difficulty	Item homogeneity (mean)	Item discrimination	Item dispersion	Parameter of selection	Cronbach's alpha if item is deleted
English	a	0.732	0.562	0.500	0.705	0.500	0.706	0.860
	b	0.827	0.354	0.583	0.814	0.476	0.855	0.811
	c	0.861	0.451	0.609	0.851	0.497	0.856	0.793
	d	0.899	0.464	0.650	0.881	0.498	0.884	0.764
French	a	0.708	0.515	0.434	0.674	0.498	0.677	0.792
	b	0.748	0.311	0.464	0.718	0.440	0.817	0.769
	c	0.838	0.412	0.533	0.825	0.491	0.839	0.715
	d	0.856	0.392	0.551	0.835	0.482	0.866	0.700
Spanish	a	0.774	0.551	0.508	0.745	0.500	0.745	0.796
	b	0.789	0.378	0.520	0.77	0.477	0.807	0.786
	c	0.837	0.355	0.561	0.823	0.478	0.861	0.758
	d	0.831	0.476	0.555	0.826	0.498	0.829	0.762
German	a	0.670	0.513	0.391	0.692	0.500	0.692	0.785
	b	0.799	0.275	0.491	0.782	0.439	0.890	0.703
	c	0.805	0.325	0.486	0.789	0.467	0.845	0.709
	d	0.828	0.296	0.509	0.805	0.453	0.889	0.689
EU25	a	0.737	0.53	0.477	0.716	0.500	0.716	0.814
	b	0.787	0.311	0.519	0.768	0.456	0.843	0.785
	c	0.838	0.409	0.558	0.829	0.490	0.845	0.757
	d	0.864	0.412	0.585	0.848	0.489	0.867	0.737

## A3.8. Item analyses for monitoring (children's version)

Item C3330a-d		Factor loading	Item difficulty	Item homogeneity (mean)	Item discrimination	Item dispersion	Parameter of selection	Cronbach's alpha if item is deleted
English	a	0.814	0.545	0.581	0.745	0.500	0.745	0.834
	b	0.823	0.322	0.588	0.785	0.455	0.862	0.829
	c	0.821	0.483	0.585	0.819	0.489	0.837	0.831
	d	0.895	0.450	0.661	0.864	0.481	0.897	0.783
French	a	0.706	0.461	0.415	0.684	0.472	0.725	0.761
	b	0.732	0.204	0.434	0.709	0.361	0.982	0.740
	c	0.815	0.301	0.493	0.815	0.443	0.919	0.687
	d	0.837	0.279	0.513	0.791	0.419	0.944	0.675
Spanish	a	0.803	0.442	0.581	0.720	0.477	0.754	0.872
	b	0.867	0.292	0.588	0.781	0.431	0.907	0.838
	c	0.910	0.375	0.585	0.844	0.473	0.892	0.808
	d	0.843	0.348	0.661	0.823	0.470	0.876	0.851
German	a	0.753	0.426	0.480	0.700	0.473	0.740	0.789
	b	0.780	0.222	0.503	0.725	0.370	0.979	0.772
	c	0.842	0.308	0.555	0.835	0.456	0.916	0.728
	d	0.819	0.275	0.533	0.818	0.438	0.933	0.745
EU25	a	0.795	0.461	0.557	0.723	0.487	0.742	0.833
	b	0.821	0.254	0.580	0.773	0.420	0.920	0.818
	c	0.846	0.397	0.602	0.830	0.477	0.870	0.801
	d	0.866	0.359	0.622	0.841	0.464	0.906	0.789

## A3.9. Item analyses for technical mediation (parents' version)

Item P224a-d		Factor loading	Item difficulty	Item homogeneity (mean)	Item discrimination	Item dispersion	Parameter of selection	Cronbach's alpha if item is deleted
English	a	0.834	0.543	0.385	0.804	0.499	0.806	0.477
	b	0.845	0.494	0.396	0.825	0.500	0.825	0.461
	c	0.565	0.183	0.241	0.563	0.387	0.727	0.660
	d	0.504	0.826	0.213	0.528	0.381	0.693	0.683
French	a	0.823	0.445	0.341	0.801	0.496	0.808	0.397
	b	0.825	0.343	0.343	0.800	0.474	0.843	0.393
	c	0.515	0.078	0.194	0.47	0.269	0.873	0.613
	d	0.478	0.793	0.179	0.567	0.411	0.690	0.632
Spanish	a	0.859	0.722	0.338	0.807	0.442	0.912	0.309
	b	0.825	0.758	0.301	0.779	0.430	0.905	0.373
	c	0.441	0.929	0.158	0.447	0.255	0.877	0.595
	d	0.422	0.164	0.152	0.54	0.377	0.716	0.619
German	a	0.708 <sup>a</sup>	0.252	0.176	0.673	0.499	0.675	0.196
	b	0.749 <sup>a</sup>	0.126	0.171	0.574	0.500	0.574	0.224
	c	0.681 <sup>a</sup>	0.09	0.197	0.578	0.387	0.747	0.187
	d	0.969 <sup>b</sup>	0.685	0.018	0.534	0.381	0.700	0.502
EU25	a	0.818	0.327	0.357	0.786	0.467	0.841	0.440
	b	0.828	0.272	0.366	0.786	0.444	0.885	0.428
	c	0.603	0.123	0.244	0.565	0.327	0.863	0.597
	d	0.442	0.75	0.176	0.572	0.435	0.657	0.671

<sup>a</sup> First factor within the exploratory factor analysis.

<sup>b</sup> Second factor within the exploratory factor analysis.

## A3.10. Item analyses for technical mediation (children's version)

Item C331A-D		Factor loading	Item difficulty	Item homogeneity (mean)	Item discrimination	Item dispersion	Parameter of selection	Cronbach's alpha if item is deleted
English	a	0.868	0.459	0.469	0.703	0.495	0.711	0.547
	b	0.868	0.421	0.469	0.830	0.491	0.846	0.547
	c	0.612	0.187	0.301	0.603	0.388	0.778	0.722
	d	0.553	0.772	0.270	0.587	0.428	0.686	0.747
French	a	0.860	0.381	0.392	0.703	0.475	0.740	0.398
	b	0.834	0.306	0.365	0.807	0.455	0.887	0.435
	c	0.519	0.074	0.209	0.445	0.261	0.852	0.647
	d	0.482	0.783	0.193	0.607	0.418	0.726	0.671
Spanish	a	0.869	0.197	0.363	0.535	0.391	0.684	0.351
	b	0.891	0.158	0.396	0.790	0.360	1.098	0.331
	c	0.486	0.057	0.188	0.463	0.234	0.989	0.591
	d	0.369	0.725	0.143	0.614	0.452	0.679	0.687
German	a	0.817	0.263	0.375	0.529	0.437	0.605	0.460
	b	0.843	0.192	0.390	0.769	0.389	0.988	0.446
	c	0.702	0.143	0.304	0.644	0.346	0.931	0.562
	d	0.352	0.784	0.147	0.531	0.426	0.623	0.720
EU25	a	0.845	0.280	0.425	0.599	0.439	0.683	0.504
	b	0.852	0.238	0.431	0.793	0.418	0.949	0.499
	c	0.658	0.128	0.309	0.603	0.331	0.910	0.643
	d	0.470	0.731	0.215	0.594	0.453	0.655	0.736

## Further reports available at [www.eukidsonline.net](http://www.eukidsonline.net)

- Stald, G., Green, L., Barbovski, M., Haddon, L., Mascheroni, G., Ságvári, B., Scifo, B. and Tsaliki, L. (2014). *Online on the mobile: Internet use on smartphones and associated risks among youth in Europe*. [www.lse.ac.uk/media@lse/research/EUKidsOnline/EU%20Kids%20III/Reports/s/MobileReport.pdf](http://www.lse.ac.uk/media@lse/research/EUKidsOnline/EU%20Kids%20III/Reports/s/MobileReport.pdf)
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The EU Kids Online network has been funded by the EC Safer Internet Programme in three successive phases of work from 2006–14 to enhance knowledge of children's and parents' experiences and practices regarding risky and safer use of the internet and new online technologies.

As a major part of its activities, EU Kids Online conducted a face-to-face, in-home survey during 2010 of 25,000 9- to 16-year-old internet users and their parents in 25 countries, using a stratified random sample and self-completion methods for sensitive questions.

Now including researchers and stakeholders from 33 countries in Europe and beyond, the network continues to analyse and update the evidence base to inform policy.

For all reports, findings and technical survey information, as well as full details of national partners, please visit [www.eukidsonline.net](http://www.eukidsonline.net)