ThinkYoung
What millennials think

DIGITAL RESILIENCE

EMPOWERING YOUTH ONLINE

Practices for a safer internet use.
A major survey targeting Nigeria, Kenya,
Israel, South Africa, Turkey and Russia

Phase II Report: MEAR Region

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What millennials think

Contents

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Executive Summary

The following multinational research report explores the role of digital resilience (the ability to prevent and respond to online risk [1]) in providing children with the skills and characteristics needed to navigate the internet safely. Following on from the first phase of the project, which analysed results from the Asia Pacific region, this report analyses the findings from children aged 9-18 in Nigeria, Kenya, Israel, South Africa, Turkey, and Russia - and investigates the ways in which young people can be encouraged to be resilient users.

In this context, resilience encompasses a set of skills and attitudes allowing a young person to avoid and adapt to risky situations faced online. These range from being able to avoid risk through online awareness and prevention, the ability to be unfased by risk, and the competence in using strategies to respond to risk. These strategies include ignoring the risk, communicating the risk or using proactive digital skills to resolve the risk (deleting, blocking or reporting the person/problem).

The main findings highlight the following:

Overall Findings

Children use a variety of digital skills to prevent and respond to online risk including: using child friendly search engines, having filters and software that protects from unwanted content or contacts, managing their profile settings, cautiously managing their online contacts and carefully using their passwords. In particular the findings of this report suggest that:

- 89% of children are likely to keep their password completely secret and 78% are likely to modify privacy settings to avoid unwanted content.
- When responding to risk young people are confident using digital skills, with 66% changing their password when personal information is misused.
- Young people show a critical awareness in their use of the internet, with 72% careful about what they say or post online, and 64% avoiding suspicious material.
- Young people above 16 years old are more likely to use technical/digital skills to respond to risk than their younger fellows.
- Frequent use of the internet (time and range of uses) increases risk exposure yet builds resilience - as greater internet use fosters improved navigational skills and online awareness.

National Findings

- Russian children score well for the use of digital skills in tackling risk, and are higher than average for communicating problems. Russian children are also the most likely to tackle the risk head on (confront the person creating the risk), and are affected least by negative online experiences.
- Young people in Turkey score the highest for adopting digital skills in response to risk. They also score the exact average across countries for seeking advice and communicating problems.
- Compared with other countries, children in Kenya fare poorly across all dimensions of digital resilience. The widest gap with other countries in the Middle East and Africa region can be observed with respect to instrumental resilience.
- Children in South Africa score the highest for ignoring risk and rank second in both avoiding risk through an awareness of online content and in seeking advice for/communicating a problem.
- Israeli children (1.98) fare comparatively well with other countries in the region (regional average being 1.94) in terms of cognitive resilience. This result places them at 66% or 34% distant from the ideally resilient young person according to this parameter.

[1] The term risk refers to all situations in which children can be affected by negative behaviours including: exposure to pornographic content, being bullied, harassed or stalked, receiving unwanted sexual comments and meeting an online contact offline.

Policy Recommendations

Based on the research also showing children self-regulating their internet usage, and formal and informal education being the best means for learning online skills, this study recommends to:

- Promote the inclusion of digital literacy and internet safety education into school curricula from early childhood education, and to ensure the provision of ICT training for teachers and educators.
- Foster extra-curricular activities aimed at promoting responsible and mutually respectful internet use.
- Improve and promote the existing hotline support services as a more reliable means to convey child concerns, and to report problems
- Secure a free and open internet for children that allows them explore and make the most of its opportunities, while educating them and building resilience in them to the risks online.

Part I. Introduction

Young people are living in an age of unprecedented developments in information and communication technology (ICT), with more and more children actively using the internet as means for both educational and social participation. As such, the use of technologies has quickly become a deep-rooted infrastructure of everyday life, whether through direct engagement with ICT or through the institutional management of contents and services affecting the conditions of children's lives (Livingstone, 2014a). New technologies coupled with increasing levels of interconnectivity inevitably have a wide range of benefits for young people, ranging from education and learning to civic participation and self-expression.

However, the characteristics making the internet a tool for creativity, learning and exploration, also come with certain levels of risk for the user. As a result, questions of how best to keep children safe when online but also free to access and use the internet in a way for both individual empowerment, and for actively seeking and benefiting from the opportunities available, are becoming increasingly important on a global policy and regulatory scale.

Despite the widespread acceptance that risks and opportunities when online are often interrelated, the debate has largely been overshadowed with maintaining security and preventing risk for young people. Equally prevalent is the fact that on the whole, parents, teachers and policy makers are often ill informed about the associated risks and opportunities the internet provides. Whilst a significant amount of attention has been placed on promoting safety online, it has been noted that these safety initiatives to reduce risk often negatively impact the opportunities present, including socialising, and learning and self-expression, through measures that overly restrict access.

As a consequence, it has become increasingly apparent that alternative strategies are needed in order to move beyond the prevalent viewpoint that risks and opportunities online are in opposition.

According to Davies (2011 p.1) with reference to the online lives of young people, 'safety must sit alongside, and be integrated with, a broader range of considerations, including promoting positive uptake of online opportunities'. A key element of this is in the promotion of competencies relevant to the digital economy.

Rationale of this Study

While advocates of online child protection and freedom of expression share a concern for the protection of rights online, they often find themselves in perceived (and real) opposition in the actual practice of law, policy and regulation (Hills et al., 2010). Moving beyond this fragmented outlook has resulted in an understanding that fostering greater levels of individual resilience to the material to which they may be exposed can create the confidence and skills required to navigate new media waters more safely (Byron, 2008).

With this is mind, the following multinational report will seek to define and investigate the role of digital resilience in positively impacting children's online engagement. Moreover it will shed light on how a digitally resilient young person responds to risky online content, and how this can be further developed on an international scale through the promotion of enhanced online skills.

Lastly, in light of the complex nature of child safety online and based on the large gaps present in global research, there is a need for 'more country-wide as well as region-wide research targeting early childhood and school-aged population' (UNESCO 2014, p. 14). This report aims to add to this international evidence base through the investigation of children's digital resilience (9-18 years of age) through the analysis of empirical data from Nigeria, Kenya, Israel, South Africa, Turkey, and Russia.

Research Objectives

With reference to the key debates on child internet safety and in line with the theoretical framework of digital resilience outlined by previous scientific literature, this research aims to empirically grasp which characteristics are most fundamental within the ideal digitally resilient young person and to establish a novel approach for measuring digital resilience.

Based on the survey administered, with a focus on how young people respond to risk, the types of risk encountered, their computer literacy and digital skills, and their preferred methods of ICT education, this research has further sought to understand:

- The impact of awareness and self-regulation in understanding the potential for risk when online, and in critically engaging with online content in a resilient way.
- In responding to risk, how children and young people can enhance their levels of resilience through communication and the seeking of advice.
- How media skills and digital literacies improve levels of resilience, and which types of response to risk are employed by technologically advanced young people.

Report Structure

The first stage of this analysis (Part I) will begin with an overview of digital resilience and its key debates, presenting the characteristics of a digitally resilient young person. In light of the theoretical approach and of the results of the ThinkYoung survey, Part II will illustrate the profile of an ideally resilient young person by presenting national resilience scores and comparing how each country fares in comparison with the model digitally resilient young person.

Part III will describe in more detail this novel approach for measuring digital resilience by illustrating the varying resilience strategies employed by young people in response to the risks faced online. Part IV will explore the key debates on child online safety to illustrate how it can be addressed by policy makers. This will introduce the international, regional, and national policy context with policy recommendations presented in light of the results of this project.

Defining Digital Resilience

The role of digital resilience as a means for children and young people to safely navigate the internet, self-regulate content, and respond to the potential risks and harm when online is becoming increasingly prevalent. According to the Byron Review (2008)[2] building resilience is a key objective promoting children's ability to manage risk.

Preventing risk is a key aspect of resilience, whereby an understanding and awareness of the potential for harm when online and being able to effectively self-regulate media usage positively affects resilience levels. Moreover, young people with "autonomous self-regulation "(the ability to manage short and long-term desires according to individual values) (Donoso et al., 2013) are empowered to use the internet to acquire knowledge and to take advantage of digital technologies (Linington and Mishkin 2014).

While employing preventive measures (awareness and self-regulation) are integral to avoiding risk and in being resilient, the ability to respond to, and cope with risk is equally important. According to Bartley (2006): 'The notion of resilience refers to the process of withstanding the negative effects of risk exposure, demonstrating positive adjustment in the face of adversity or trauma, and beating the odds associated with risks' (p. 4).

[2]The Byron Review was an independent report commissioned by the Prime Minister of the United Kingdom in 2007 reviewing the risks children faced from both the internet and video games. The recommendations of the review were accepted by the British government, which led to the establishment of the United Kingdom Council for Child Internet Safety (UKCCIS).

As a result, young people who are labelled as digitally resilient are also able to deal with negative experiences online, tackle adverse situations and experiences in a problem-focussed manner, and turn negative emotions into positive (or neutral) feelings (Donoso et al., 2013). This is fundamental for young people, particularly in an 'always on' digital world where children must be empowered with the capacity to judge and respond to risk independently (Linington and Mishkin 2014).

The concept of digital resilience thus encompasses both a preventive and reactive phase, where at first young people are able to self-regulate and avoid online risk and, when faced with risk, are able to employ coping mechanisms in order to respond to the risk or harmful situation in a problem focussed manner.

As conveyed in Fig.1, a digitally resilient young person harbours the following set of skills and characteristics fundamental in navigating the internet in an empowered manner and in responding to online risk:

- An ***Awareness*** and understanding of the risks present.
- The use of ***Cognitive Strategies*** and development in order to critically engage with online content, and to foster problem solving and decision-making.
- The ability to employ ***Instrumental Actions*** to cope and respond to risk through the use of digital skills and media literacies.
- The willingness to ***Communicate*** with people when faced with a risky, upsetting or potentially dangerous situation online.

Figure 1. The Digitally Resilient Young Person

This set of skills and attributes allows a young person to critically engage with online content in a safe and self-regulated way. This is further translated into the young person's ability to both self-monitor their activities, recognise where potential danger may be, and refrain from taking part in risky online practices.

Moreover, in responding to actual risk, these skills and strategies equip young people with the necessary tools to address the risk and prevent harm from taking place. As Donoso, d'Haenens and Vandoninck (2013) note, these coping strategies can range from passive reactions to risk (ignoring the problem), to communicative measures (talking to someone) and proactive measures (fixing, deleting or blocking the problem/person).

Survey Methodology

The data collection exercise was performed between May 2015 and March 2016 through an online survey administered amongst children and young people aged 9-18. The survey reached a targeted audience of 500 respondents for each country involved in the study (Russia, Turkey, South Africa, Israel, Nigeria, Kenya) for a total of 3000 respondents. In order to guarantee the sample's representativeness mild population adjustments were performed using tables from UNDESA World Population Prospects: The 2012 Revision (Medium variant).

The questionnaire was prepared in two versions: the first was directly administered to children aged above 16 and the second was administered to parents who allowed their children to partake (9-16).

In gaining parental permission for the 9-16 year olds, a very clear statement of intent was given to parents/guardians in advance, outlining the exact purpose of the study, sharing the exact questions and giving assurances that the data would be treated anonymously.

The wording of the questionnaire was refined on the basis of cognitive testing with children and on a consultation with a team of secondary school teachers in order to avoid adult terminology and to ensure children's comprehension. Moreover, particularly sensitive terms such as "naked", "bully" or "sex" were avoided. The survey went to a field trial process before going live to ensure respondents' uptake.

The questions were framed in mutually exclusive and mutually non-exclusive terms. When appropriate a Likert scale was adopted.

The statistical analysis was performed using SPSS and STATA. Standard statistics for normality and correlation were employed. Correlation and significance were tested using T-test, Analysis of Variance (ANOVA) and F-test as well as Chi square test.

In gaining parental permission for the 9-16 year olds, a very clear statement of intent was given to parents/guardians in advance, outlining the exact purpose of the study, sharing the exact questions and giving assurances that the data would be treated anonymously.

Part II Profiling the Ideal Digitally Resilient Young Person

Key Messages

The following section presents an analysis of the survey's results from each country in the format of an overall national score of resilience, based on a predefined set of resilience strategies (preventive and reactive). This score also takes into account the time it takes for children to get over/recover from a negative online experience. According to the results:

- Israeli children (1.98) fare comparatively well with other countries in the region in terms of cognitive resilience. This result places them at 66% or 34% distant from the ideally resilient young person according to this parameter.
- Compared with other countries, children in Kenya fare poorly across all dimensions of digital resilience. The widest gap with other countries in the Middle East and Africa region can be observed with respect to instrumental resilience.
- Nigerian children also display low levels of instrumental resilience, fairing only slightly better than their counterparts in Kenya.
- Children in South Africa score the highest for ignoring risk and rank second in both avoiding risk through an awareness of online content and in seeking advice for/communicating a problem.
- Russian children score well for the use of digital skills in tackling risk, and are higher than average for communicating problems. Russian children are also the most likely to tackle the risk head on (confront the person creating the risk), and are affected least by negative online experiences.
- Children in Turkey score the highest for adopting digital skills in response to risk. They also score the exact average across countries for seeking advice and communicating problems.

Setting the Scene

This chapter aims to provide an overview of the key findings with reference to youth attitudes towards preventing and responding to online risk. It adopts a country level approach where the different responses to the survey are clustered into resilience scores. Resilience scores help in identifying the profile of the ideally digitally resilient young person, defined as the person who adopts the widest amount of strategies to safely use the internet without incurring any harm.

The definition of resilience scores is instrumental in unveiling international key trends. It also enables cross country comparisons to be made whereby each country can compare the performance of its children to that of other countries - thus assessing its relative strengths and weaknesses.

Definitions

In order to safely navigate the web and take advantage of the wealth of information and opportunities available, children can put in place strategies to minimise their exposure to online risk. The literature defines those strategies as preventive insofar as they don't result as a response to harmful situations.

For the purpose of this study and, in accordance with the existing literature, a list of preventive strategies for digital resilience has been identified along the macro categories of instrumental (using specific technical instruments to avoid risks) and behavioural (avoiding risks through specific safety behaviours).

In a similar fashion, another strand of literature (Luthar, Cicchetti and Becker, 2014) also defines resilience as the ability to deal with negative experiences online or offline. According to this perspective resilient children are able to tackle adverse situations in a problem-focused way, and to transfer negative emotions into positive (or neutral) feelings.

This study identifies this approach as reactive as opposed to preventive with the goal of measuring how children react to specific online risky situations such as exposure to sexual content, cyber-bullying and security frauds, among others.

The ensuing definition of reactive resilience is further separated into 4 types of attitudes that children may adopt: instrumental measures, confrontational measures, other-reliant communicative strategies or disengagement strategies.

With instrumental measures children master the tools that help them navigate safely in response to a certain risky situation. As an example, they may block a contact who teases them. Confrontational measures are strategies where the child engages in personal confrontations with the stressor or aggressor by asking him or her to stop. Other-reliant/communicative strategies are those situations where the child asks for help from family, friends or institutions to deal with risk and harm. Lastly, disengagement strategies reflect an approach that tends to minimise the importance of risk and harm by mainly ignoring the harmful content or contact and thus avoid any risky interaction.

Lastly and in line with a more traditional and overarching definition, resilience is also measured as the ability to quickly reabsorb from the shock of a negative online experience.

A detailed description of the most prevalent preventive and reactive strategies at international and national level with reference to online risk will be provided in Part III of this report.

Reducing Complexity through Resilience Scores

With the aim of reducing complexity and to extrapolate a meaningful correlation analysis, the three types of resilience previously outlined have been translated into corresponding scores. The next section briefly illustrates how this has been achieved.

Preventive Resilience Scores

The notion of preventive resilience has been reduced to a double score capturing the dimension of both technical and behavioural preventive strategies. Each child obtains a score from 0 to 3 depending on how many technical and behavioural strategies he or she is likely to adopt.

Reactive Resilience Scores

Reactive resilience has also been reduced to four scores that reflect the distinctions highlighted by previous research on which the survey has extensively drawn from. As a result the following scores ranging from 0 to 3 have been created:

- Instrumental coping resilience score
- Confrontational resilience score
- Communicative resilience score
- Disengagement resilience score

Emotional Response to Risk: Time Resilience

The time resilience score corresponds to the answer to the question: If you are ever upset by things that happen on the internet, how long does it tend to upset you for? It ranges from 0 to 3 where 3 corresponds to being upset for hardly any time by things happening on the internet.

For the sake of having a reduced number of metrics to compare countries' resilience levels, preventive and reactive resilience scores have been combined to give better insights to policy makers as to what levers should be used to foster digital resilience. As a result the analysis unfolds according to the following scores:

1. Cognitive score
2. Instrumental score
3. Communicative score

The cognitive score summarise the likelihood of adopting behavioural preventive strategies such as being careful about what one posts about him or herself as well as the likelihood to adopt disengagement strategies when facing risk (e.g. ignore a bully). The cognitive score captures the extent to which young people are both aware and can critically reflect about online risk.

The instrumental score comprises all the instances in which the child uses his or her digital skills to prevent or get rid of the incoming risk or threat.

The communicative score represents the likelihood of a young person to reach out to others (parents, siblings, teachers or institutions) when facing online risk and to confront aggressors and stressors (e.g. bully).

The Online Resilient Young Person – a Graphical Representation

The graphical representations below illustrate how well children in each country fare in comparison with an ideal digitally resilient young person, who would score 3 points in each dimension.

Figure 2. The Resilient Young Person in Russia

Russian children fare comparatively well along the dimension of cognitive resilience (1.97) situating themselves at 66% on the path towards the ideally resilient young person. The score reveals two opposing tendencies where young Russians are more likely to adopt disengagement strategies (1.48) than the rest of the sample, but are less likely than the average to adopt behavioural preventive strategies (2.46).

Similarly, Russian children (1.73) fare above the regional average (1.69) in terms of instrumental resilience displaying a good score (58%) when compared to the ideally resilient young person.

Children in Russia display average scores with regard to communicative resilience (0.80). Although their score in reaching out to parents, siblings or peers is relatively low (0.65) it is compensated by the extent to which Russian children confront their stressors or aggressors (0.96). This result is particularly interesting as it displays a general tendency whereby Russian young people attempt to resolve online problems by themselves.

All in all, results from Russia are in line with what was predicted by the psychological literature on resilience as Russian children in the sample fare above average in all dimensions of self-efficacy (the ability to stick to and achieve one's goals, as well as the confidence in dealing with new things). This personality trait is often associated with a higher degree of resilience as being able to deal with unexpected circumstances is central to the reactive resilience definition in this study. Moreover, the low levels of anxiety reported by Russian children are usually associated with a higher uptake of disengagement strategies.

Figure 3. The Resilient Young Person in Turkey

Figure 4. The Resilient Young Person in South Africa

Turkish children (1.89) fare just below average (1.94) with regard to cognitive resilience and situate themselves at a 63% level of completion in comparison to the ideally resilient child in this regard. This outcome is explained by two completely opposite trends. On the one hand Turkish children rank first in their likelihood to adopt behavioural preventive strategies (2.86) - while, on the other, they rank last with reference to disengagement strategies (0.93).

Children in Turkey with 2.12 points rank first in instrumental resilience meaning that they manage to ensure their online safety mainly with the use of technical instruments. Their score places them at a 71% level of completion in comparison with the ideally resilient young person.

Communicative resilience is where Turkish children score relatively higher than the regional average with the rest of the surveyed population (0.82 vs. 0.80). In this case the score reflects a higher than average performance with regard to communication strategies (1.09) and a lower than average performance (0.55) in terms of confrontational strategies.

In comparison with the other surveyed countries in the Middle East and Africa region, South African children obtain top scores in terms of cognitive resilience (2.03) far above the average of 1.94. On the assumption that an ideally resilient young person would adopt all preventive behavioural strategies and will disengage with risk and confrontation (unless they are causing actual harm), the average young South African ranks at 68% compared to the ideal digital citizen in terms of cognitive resilience, compared to a regional average of 64%.

This score is further illustrated by the above average performance of South African children as to the adoption of disengagement (1.44) and behavioural preventive strategies (2.61).

Similarly, South African children (1.74) score above average (1.69) with regard to instrumental resilience, meaning that they tend to use most of the available technical instruments to prevent and cope with online risk. Thus the South African child receives a 58% score in reaching the ideally resilient young person in terms of instrumental resilience.

Lastly, South African children (0.99) obtain top scores in terms of communicative resilience. This result is explained by a score in the adoption of communicative strategies of 1.06 and 0.92 with regard to the adoption of confrontational strategies.

Figure 5. The Resilient Young Person in Israel

Figure 6. The Resilient Young Person in Nigeria

Israeli children (1.98) fare comparatively well with other countries in the region (regional average being 1.94) in terms of cognitive resilience. This result places them at 66% or 34% distant from the ideally resilient young person according to this parameter. The score however results from a relatively strong performance in the adoption of disengagement strategies (1.44) and a relatively poorer performance with regard to disengagement strategies (2.52) in comparison with other countries in the Middle East and Africa.

Israeli children fare slightly below the regional average with respect to instrumental resilience (1.67 vs 1.69) with higher than average performances in reacting to online risk (1.35) and lower than average performances in adopting instrumental strategies to avoid being exposed to online risk (1.99).

Israel ranks just below average when it comes to communicative resilience (0.77). This result is explained by higher than average levels of seeking help from parents, siblings or peers and lower than average levels in the uptake of confrontational strategies (0.74).

Compared with other countries, children in Nigeria demonstrate lower levels of instrumental resilience (1.49) ranking last among the other surveyed countries, far below the country average (1.69). This level indicates that Nigerian young people are 50% away from the ideal digitally resilient young person with respect to this parameter. The instrumental resilience score reflects low levels of digital literacies in responding to online risk (0.96) compared to an average of 1.30 across the Middle East and Africa region.

In terms of cognitive resilience, Nigerian children obtain about average scores (1.94). This result is further illustrated by higher than average levels of risk avoidance, whereby Nigerian children are more likely than their fellows in the region to adopt behavioural preventive strategies (2.69) and lower than average adoption of disengagement strategies (1.19).

Nigeria obtains lower than average scores with respect to communicative resilience with 0.76 points. This result reflects two opposing tendencies whereby Nigerian children are more likely to confront their stressor or aggressor (0.93 vs 0.80 on average) than their peers in the region, and less likely to communicate with parents, sibling and peers (0.59) about the risk they have encountered online.

Figure 7. The Resilient Young Person in Kenya

Compared with other countries, children in Kenya fare poorly across all dimensions of digital resilience. The widest gap with other countries in the Middle East and Africa region can be observed with respect to instrumental resilience. Young Kenyans fare well below average (1.45 vs. 1.69) in this respect by ranking at the bottom of the table in the adoption of both preventive (1.94) and reactive (0.95) instrumental strategies.

Kenyan children rank last with a score of 1.80 in the cognitive dimensions of digital resilience. This result is further illustrated by a very low score in the adoption of disengagement strategies (1.06) compared to the regional average, which could be also partially explained by social and cultural norms.

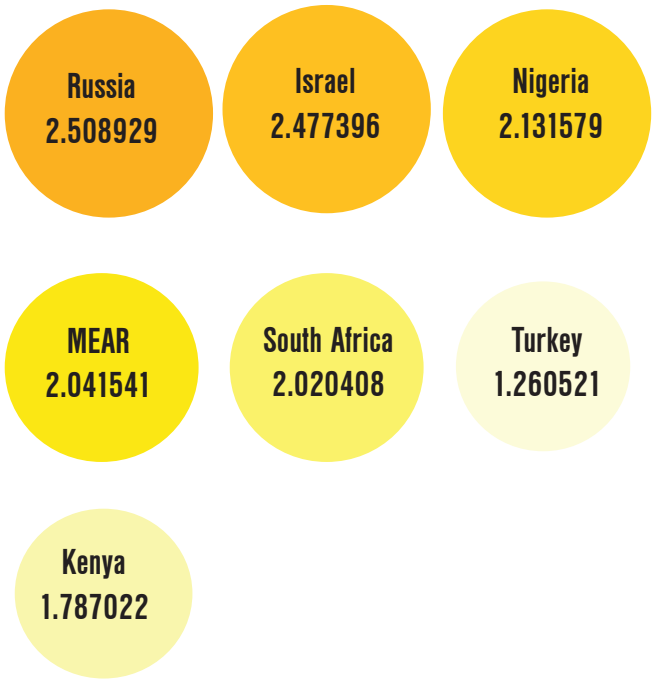
Kenya ranks last across the board in terms of communicative resilience with 0.65 points. Kenyan children are less likely to confront their stressor or aggressor (0.66 vs 0.80 on average) than their peers in the region, and less likely to communicate with parents, sibling and peers (0.64) about the risk they have encountered online.

Other Country Trends and Rankings

The section above illustrated how resilience can be measured and ranked according to different criteria. Overall country trends suggest that children in some countries are more resilient than others. This is the case of South African children who rank significantly above the average of those from other countries in all measures of preventive and reactive resilience. On the contrary, children in Kenya consistently rank at the bottom of all indicators of preventive and reactive resilience.

Lastly, and in light of previous research carried by Donoso et al. (2013), it is worth analysing how countries fare with regard to time resilience, defined as the extent to which children are affected by disturbing experiences over the internet as illustrated in Table A. Russian young people are those who are affected the least from bad things happening on the internet as 63% of them report to be affected for hardly any time by these experiences. On the contrary, Turkish kids tend to be affected to a larger extent when facing situations of online risk as only 3% report being unfazed by online risk/harm. The emotional dimension of resilience is therefore better mastered in countries such as Russia and Indonesia compared to Korea and Turkey. Interestingly and somewhat intuitively this ranking mirrors what is found for disengagement resilience with Russia at the top and Turkey at the bottom.

Table A. Time Resilience Across Countries



Part III Measuring Digital Resilience

Key Messages

Child online resilience (the ability to avoid and overcome risky and harmful situations when online) can take many forms. At the preventive stage children use a broad spectrum of technical instruments and behavioural strategies.

Children display relatively high levels of instrumental action take up with 70% of them very likely to keep their password completely secret from anyone, and 52% very likely to modify privacy settings to be kept away from unwanted content.

Moreover, children on the whole are well acquainted with the "think before you post" principle and avoid certain risky practices. 72% of children report to be careful about what they say and post about themselves, while 67% are careful of what friend requests to accept.

With reference to all but online approaches and meeting requests, children mostly use instrumental techniques such as closing the page containing unwanted content (60%), deleting or blocking the contact that cyber-bullies them (51%) and changing the password when personal information is stolen or misused (58%).

The majority of children adopt disengagement strategies when strangers approach them online, with 40% ignoring the contact. Children also refuse to meet (52%) an online contact who wants to meet them in person/in an offline context.

Amongst children who have actually been exposed to disturbing content, disengagement strategies (42%) are a much more widely adopted strategy when compared to the entire sample.

Setting the Scene

This chapter will further illustrate the varying strategies employed by young people when confronting online risks. The survey respondents were asked to detail their likelihood of adopting strategies to prevent online risk and to describe what strategies they would be likely to employ when facing online risk (reactive strategies). The chapter thus provides the reader with a comprehensive overview of the most frequent attitudes of young people in Turkey, Russia, Israel, Kenya, Nigeria and South Africa in dealing with online risk.

Preventing Risk

Instrumental Strategies

International Analysis

The responses to the ThinkYoung survey demonstrate a high uptake of instrumental actions across the international sample, with 70% of children and young people being very likely to keep their passwords secret, and 61% to turn off risky programmes. High levels of agreement were also present with regards to modifying privacy settings to avoid unwanted contacts (52%) and using complicated passwords (53%). However, the use of child friendly search engines (60% likely vs. 32% unlikely) and of using a secondary account for spam and other emails (51% likely vs. 35% unlikely) are less widespread among children aged 9-18. See table 1 in appendix b for full results.

Country Level Analysis

The analysis conducted at country level does not show substantial differences when considering the overall likelihood of undertaking specific instrumental actions. Child attitudes towards making a profile unavailable, and privacy and password settings are very much similar across countries. Varying attitudes are present however with regards to the use of child friendly search engines, with children in Nigeria (75% likely vs. 18% not likely) and Kenya (62% likely vs. 23% unlikely) demonstrating a much higher likelihood of adopting this practice when compared to Israel (48% likely vs. 39% unlikely) and Russia (56% likely vs. 39% unlikely).

Additionally, children in Kenya (76% likely vs. 17% unlikely) and Nigeria (76% likely vs. 19% unlikely) are less inclined than their peers in other countries to turn off programmes that they consider risky (on average 84% likely vs. 13% unlikely).

Frequency of Internet Usage

Intuitively, frequency of internet usage is associated with higher levels of familiarity with the tools enabling a safer navigation. This result holds for the ThinkYoung sample where a higher level of internet usage is significantly positively correlated[3] with: a) activating filters protecting from unwanted content, b) turning off programmes considered risky, c) using a secondary email account, d) using complicated passwords.

Socioeconomic Status

Socioeconomic status is positively correlated with the adoption of technical preventive strategies. The correlation is significant for each of the considered actions, with the exception of turning off programmes that are considered risky.

Behavioural Strategies

International Sample

The adoption of behavioural strategies to prevent online risks has been analysed in the survey through the perspective of self-monitoring activities reflecting the "think before you post" principle and behavioural avoidance - staying away from certain risky practices.

The international sample illustrates a widespread adoption of behavioural preventive strategies where the most common practices are: a) to be careful about what they say and post about themselves (72% of children who agree with the statement), b) to be careful about what pictures to post of themselves (70%) and c) to be careful about which friend requests to accept (67%).

Country Level Analysis

On a country level, no significant differences are observed with regard to specific behavioural strategies. It is however the case that children in Russia and Israel display a lower disposition towards adopting preventive behavioural strategies than their counterparts in other countries. As an example, Russian and Israeli children (57% and 58% respectively) are less likely than the average (72%) to be careful when talking and posting about themselves.

Gender Differences

The gender difference analysis on behavioural preventive strategies demonstrates that girls are either equally or more inclined to adopt these strategies when compared to their male counterparts. This result holds for all behavioural strategies apart from being careful which links or videos I click on where no significant differences are registered. The largest gender difference (9%) is found with regards to both covering the webcam to prevent being seen (49% very true for girls vs. 40% for boys) and limiting online conversations to people who they already know (63% very true for girls vs. 54% for boys).

[3]A one way Anova test has been conducted to detect significant associations

Frequency of Internet Usage

A varied correlation between frequency of internet use and the adoption of behavioural strategies is present, whereby a negative correlation exists with regards to both covering the webcam to prevent being seen and avoiding clicking on suspicious links. However, frequency of internet use is positively correlated for all other behavioural strategies when navigating the internet.

Socioeconomic Status

The adoption of the previously discussed behavioural preventive strategies is also positively correlated with a child's socioeconomic status across countries and age groups.

Responding to Risk

The following analysis of reactive resilience to online threats will be conducted following the risk/reactive strategies matrix (fig. 2). With the aim of collecting the largest amount of responses, the questions were asked in an hypothetical way so that children who didn't experience certain risky or harmful situations were also able to express their opinions on the strategies they would be most likely to adopt.

Figure.2. Reactive Resilience Matrix

	Unwanted disturbing content	Disturbing messages	Misuse of personal information/ pictures	Online approaches and meeting requests	Cyber-Bullying
Instrumental					
Confrontational					
Communicative					
Disengagement					

Unwanted Disturbing Content

Surfing the web constitutes a great opportunity for children to learn and explore an unprecedented amount of information, images and multimedia content. However, as previously mentioned in the report, this freedom entails the possibility of incurring disturbing content of a sexual/ violent or inappropriate nature. When this happens children can adopt a handful of strategies to cope with these specific risks, along the macro-categories identified above.

International Sample

The first level of analysis is conducted on the international sample including all age groups. The results highlight that the most widespread strategy when incurring in unwanted content is to immediately get rid of it (60%), followed by asking for parental advice (29%) and then by employing the more technically sophisticated measure of blocking the unwanted website in question (28%).

International Sample –Children Exposed to Unwanted Disturbing Content

The consistency of responses was further tested by restricting the analysis to the sample of those children who stated they had actually encountered unwanted sexual or violent content. The results shown in table 7 of appendix b illustrate that the theoretical approach of what the children would do is reflected in the actual behaviour of children who have experienced that situation. The only exception relates to communicative coping strategies where only 18% of children asked for parental advice.

Country Level Analysis

The country level analysis demonstrates the existence of significant national differences with regard to the extent to which children would adopt communicative strategies. Children in Nigeria (11%) and Kenya (11%) are less likely to speak with a friend when compared to South Africa (25%) and Turkey (24%), while children in South Africa (35%) are much more likely than children in Israel (20%) to seek advice from their parent/guardian.

Disturbing Messages

While the opportunities the internet provides are widespread, with socialising and communicating being two of the most commonplace activities undertaken by children and young people, certain risks are exacerbated. Amongst the potential risks faced for young people online, receiving unwanted or disturbing messages is one of the most prevalent encountered in our sample (41%).

International Sample

Taking into account the responses from the entire sample internationally, and using the macro category of coping strategies detailed previously, the most common response to disturbing messages for children and young people is to block and report the person in question (51%). This is closely followed by deleting the contact (47%) and ignoring the message and/or person (40%). As a result, instrumental and disengagement strategies are the preferred tactic for responding to this risk.

International Sample –Children Exposed to Unwanted Disturbing Messages

When the theoretically preferred strategies responding to disturbing messages are compared to the actual results from the respondents who had experienced this risk, the same strategies are adopted. However, the percentage of respondents adopting instrumental and disengagement strategies is slightly higher, with 61%, 54% and 47% respectively.

Country Level Analysis

Taking into account country variations it is interesting to note that children in Kenya (20%) and Nigeria (27%) are much less likely to adopt the instrumental coping strategy of deleting the contact when compared with children in Turkey (74%) and South Africa (58%). Moreover, children in Nigeria (50%) are more than 3 times as likely to adopt disengagement strategies (ignore the message or person) when compared to their Turkish counterparts.

Gender Differences

The gender difference analysis highlights that girls are more inclined to adopt the instrumental strategy of blocking the person when compared to their male counterparts (56% vs. 46%), while boys are more likely to ignore the message or person (41% vs. 38%).

Age Group Variations

The most significant differences with regards to age are present when communicative strategies are taken into account, with 9-12 year old children (43%) being more than fives times as likely to communicate a problem with a parent or guardian when compared to young people aged 18 (8%).

Misuse of Personal Information

Information, privacy and security concerns are a further category of risk faced when online, with the giving out and misuse of personal information a key priority for internet policy stakeholders. As a result, cybercrime and e-security concerns have been prevalent in a number of research initiatives on child online safety. The misuse of personal information, however, is the least encountered risk with only 12% of young people aged from 16 to 18 having had their password used without their permission and 18% having had someone use their photos.

International Sample

When responses from the entire sample are analysed the most prevalent reactive strategies are instrumental, whereby children and young people are most likely to either change their password (58%) or review their privacy settings (45%). Communicative strategies (24%) are the second most likely cluster of strategies adopted by young people. Confrontational strategies are the least likely to be employed with only 4% of children and young people stating they would politely ask for the account back.

International Sample – Children Exposed to Misused Information

In line with previous trends a higher percentage of respondents who had incurred the misuse of personal information adopted instrumental techniques, with 66% changing their password and 62% reviewing their privacy settings.

Interestingly, only 11% of children adopted communicative strategies compared to 24% who stated they would.

Country Level Analysis

Important distinctions are present when the country level responses are compared, with children from Turkey and Russia adopting high levels of instrumental strategies (76% respectively changing their password). However, respondents from Turkey were almost twice as likely to review their privacy settings (81%) when compared to Russia (41%). South African children were also the most likely to employ communicative strategies with 44% stating they would ask a parent or guardian for help.

Online Approaches and Meeting Requests

Meeting an online contact offline, or receiving messages from an unknown person are both internet risks of particular concern for policy makers, teachers and parents. As a result the following analysis has been split into reactive strategies based on the child or young person receiving messages from an unknown person, and strategies for responding to a request to meet in person or in an offline context.

International Sample

According to the international sample (all age groups) in response to an unknown person engaging in online contact, the most prevalent strategy is to ignore the person (40%), followed by asking their parents or guardian if they know the contact (29%) and asking their friends if they know the person (28%). In response to an invitation to meet an online contact offline, the most widespread strategy is to refuse to meet (52%) followed by employing communicative measures (seeking advice from parents (35%) and friends (15%)).

International Sample – Children Exposed to Online Approaches and Meeting Requests

As table 17 of appendix b demonstrates, the results are somewhat similar amongst the children and young people who had encountered these risks, with 37% ignoring the person. Amongst the communicative strategies, asking if their friends know the contact (35%) is more commonly adopted than asking their parent or guardian (14%). It is interesting to note that 30% (compared to 20% above) replied to the unknown contact while also using instrumental techniques (only allowing a limited profile).

Country Level Analysis

In response to unwanted approaches online, the country level analysis again raises important variations between the reactive strategies employed, with children in Israel (62%) being more than twice as likely to use disengagement strategies (ignore the person) when compared to children in Russia (27%). Accompanying this, only 14% of children in Nigeria would ask a friend if they knew the person, compared to 45% in Turkey. Crucially, none of the children in Turkey stated they would reply to the message, compared to 30% in Nigeria and 21% in Russia. Nigerian children are also the most likely to reply to a message while using instrumental strategies (31% would reply while limiting their online profile).

Country Level Analysis

With reference to responding to requests from a stranger to meet in an offline context the most notable differences exist in the extent to which children and young people would refuse to meet the contact. This is most prevalent when the data from Israel (75%), South Africa (70%), Russia (38%) and Kenya (37%) is compared. Children in Russia are also the most inclined to meet a contact as long as a friend is present, or the contact is of a similar age (23% and 29% respectively), compared to only 4% and 3% respectively in Turkey.

Cyber-Bullying

A final contact risk present for children and young people when online, as demonstrated in the literature section of this report, is the possibility of being bullied, harassed or stalked. This risk is particularly felt in the older age group as illustrated by recent statistics coming from the nationwide Australian Covert Bullying Prevalence Survey in 2009 (UNICEF, 2012). As an example, the Australian survey found that rates ranged from 4.9% of students in Year Four (aged 8 to 9) and 7.8 % in Year Nine (aged 13 to 14).

International Sample

Using the entire sample surveyed the most commonplace preventative strategies used are to block and report the person (51%) or delete the contact (48%). As a result, instrumental strategies are the most prevalent when responding to this risk. While communicative strategies are the third most popular method (29% for talking with a parent or guardian), communicating the problem to siblings (8%) and teachers (5%) are viewed much less favourably.

International Sample –Children Exposed to Cyber-Bullying

Testing the consistency of responses by restricting the sample to those who had actually experienced the risk both reinforced the theoretical approach taken and highlighted differences in actual conduct. While the top two strategies of blocking the person (53%) and deleting the contact (53%) are the same (albeit higher), the use of communicative strategies is lower at 19%. Moreover, a higher number of children and young people used confrontational strategies (27%) by asking the person to stop sending messages (compared to 18% in appendix b table 21). The use of disengagement strategies is also more highly employed, with 42% ignoring their bully when compared to 28% beforehand.

Country Level Analysis

The country level analysis raises further key national distinctions with regards to reactive strategies, with a much higher number of children in Turkey (71%) deleting the contact when compared to Kenya (22%) and Nigeria (33%). Russian children are also the most likely to adopt disengagement strategies by ignoring the person (40%) compared to 12% in Turkey and 22% in Israel. Additionally, children in Israel (46%) and South Africa (48%) are the most likely to use communicative strategies by seeking advice from a parent or guardian.

Comparisons with Previous Findings

In general, a common finding of previous initiatives on child online safety conclude that the risks children are likely to face when online are not significantly different from those faced offline (Hills et al., 2010). Moreover, it is concluded that the prevalent risks for children and young people are not the same for all children, a finding reiterated in the results of this study.

It is interesting to note that, and in line with the overall findings of the EU Kids Online initiative, the results demonstrate a trend whereby older children are more likely to adopt instrumental or proactive measures in response to risk (deleting or blocking the problem/person). Moreover, female children were more likely to communicate risk when compared to their male counterparts (Haddon and Livingstone et al., 2011). In line with the findings from the SAFT and UKCGO projects conducted in Norway, Ireland and the UK, the results identify older teens as more likely to meet online contacts offline (despite being a low percentage in general). The UKCGO project also concluded that young people who used the internet more (in time spent and range of uses), and those who were more technically skilled, came into contact with more risks.

Interestingly, and as mentioned previously in the analysis section, the results of this project suggest that children who spend more time online are more likely to adopt a variety of coping mechanisms and reactive strategies when faced with risk, and are therefore better able to respond to risk and minimise harm – demonstrating higher levels of digital resilience. This is particularly important as, according to the UKCGO project, young people who use the internet more frequently and who harbour more technical skills, come into contact with risk more often (Livingstone and Staksgrud, 2009). This suggests a positive correlation with previous findings whereby children who come across more risk based on increased levels of digital skills and time spent online, are also more resilient.

Part IV

The Policy Challenge

Setting the Scene

This chapter aims to shed light on the existing trade-offs and explores the international good practices among policy responses to the challenge of ensuring child safety online. Moreover the ambition of this chapter lies in incorporating the model of a digitally resilient young person in the current policy debate on the instruments for fostering child digital resilience.[4]

Fostering Digital Resilience: The Role of Media Skills and Digital Literacies

As it has been noted, children are able to rely on a number of coping strategies in response to actual and/or perceived online threats. The role of media literacies is of particular importance in this respect, with children and young people requiring the necessary critical and conceptual tools allowing them to deal with, rather than be protected from, the media culture that surrounds them (Hagen and O'Neill 2009). As Jolls and Thoman (2005) identify, media literacy plays an important role for young people, helping them to acquire an empowering set of "navigational" skills when online. These digital skills and literacies include active and reactive responses to online content, including both responses to risk and engagement with online opportunities. Therefore, 'internet literacy plays a key role in mediating online experience and should, therefore, be included in future research on access, use, opportunities and risks online' (Livingstone and Helsper, 2010, p. 17).

Barriers to Resilience

Even though children's digital literacy skills on the whole are increasing, a number of the creative, informative, interactive and participatory elements of the digital environment are failing to be accessed by a wide range of the global population. Barriers to media literacy have been argued are often predominantly barriers to access (both access to media opportunities and media consumption) and can range from economic, institutional, social, and personal factors (Buckingham et al., 2005).

Furthermore, other factors play an integral role in either fostering or preventing resilience when online. According to the findings of EU Kids Online (Livingstone and Tink, 2012), children from an educational and economic disadvantage or with parents who rarely used the internet were seen as less resilient.

Empowerment: Balancing Opportunities and Risks

While ensuring children and young people are safe when navigating the internet is a key priority for policy makers, educators and parents alike, empowering children to take full advantage of the opportunities the internet provides is also of upmost importance. This is particularly crucial based on the current international policy climate emphasising risk over opportunities and viewing security as the most fundamental challenge for internet regulation.

The opportunities available are wide in scope, ranging from learning, communication, civic participation, creativity, self-expression and entertainment (Livingstone and Helsper, 2010). Moreover, young people are teaching themselves new skills when interacting with online media, including computer programming, amongst others (Prensky, 2008). This 'ladder of opportunities' highlights the progression of online activities, with most children engaging first with basic activities and progressively climbing the ladder to take up the more creative and participatory activities (Livingstone at al., 2011).

[4]For a more detailed discussion of the contentious elements adding to the policy debate on child online safety, ranging from definitions of risk, harm, and vulnerability to the 'digital divide' and media literacies, see the full phase 1 report of this project focusing on the Asia Pacific region.

Challenges for Internet Governance

Striking a balance between security and freedom is the most contentious aspect of internet governance internationally, particularly based on the fact that the online environment presents a challenge in terms of responsibility and authority related to rights and risk assessment (Bulger and Livingstone, 2013). At the International level, the UN Convention on the Rights of the Child (1989) acts as a guideline for safeguarding children's rights online (with signatories required to adopt appropriate measures), particularly in terms of facilitating the exercise of their right to express an opinion, promote citizen participation and to 'provide a conduit for their freedoms of expression and information' (UNICEF, 2014, p. 7).

Moreover, there are a number of international initiatives linking stakeholders for international co-operation on internet policy, including the ITU's Child Online Protection (COP) Initiative, and the Internet Governance Forum (IGF), amongst others. This is accompanied by a multitude of child welfare organisations (including Childnet International, The European Child Safety Online NGO Network and the Family Online Safety Institute) (OECD, 2012).

Regional Frameworks

At the regional level both the European Union and the Council of Europe have developed policy frameworks protecting children online, ranging from Directives combating the exploitation of children through ICT usage (UNICEF, 2011) to harmonised legislation pertaining to child protection online. Moreover, through the Safer Internet Programme (SIP) the EU assumes 'a regional lead in stimulating policy making and implementation as well as co-operation between its member states' (OECD, 2012, p. 60). Despite regional instruments having specific application within the region they are developed in, they often act as a benchmark for other countries to adopt and 'in some instances allow ratification by States from outside the region' (UNICEF, 2011, p. 10).

National Level

Governments worldwide are developing national frameworks for the protection of children online, in line with article 3 of the UN Convention (OECD, 2012). However, varying approaches are adopted, with some countries opting for a 'more holistic policy framework in which national priorities are defined with a view to enhancing policy coherence (e.g. the EU within its competences, Australia, Canada and the United Kingdom) (OECD, 2012, p. 47).

In Israel, a number of rules exist in the criminal code, which although are not specific to child online protection, can be applied to such cases in order to protect children from obscene publications on the internet and from harassment through the use of a computer. Moreover, in December 2010, the Israeli Law, Information and Technology Authority (ILITA) published draft ethical and behavioural guidelines for database owners collecting data from minors, with the aim of forcing those who collect such data to act responsibly, and with parental consent (Yoheved Novogroder-Shoshan, 2011). The Ministry of Education also offers different tools for parents, teachers and children about online safety.

Russia has also recently adopted a new policy framework for child online safety, with the Russian Internet Regulation Bill (2012) labelling harmful content and introducing restrictions on banned content (Richter, 2012).

The subject of online safety is covered in South African schools, and the Department of Education hosts an educational portal with an area dedicated to child online safety for principals, teachers, and parents. The Department of Telecommunication and Postal Services also contributes to improve child online protection, for example by working with organisations such as the Film and Publication Board. An Internet governance forum has also been held annually since 2011 in South Africa, and the National Child Protection Week (CPW) is commemorated annually.

Kenya is part of the UNICEF Global Programme to protect children from online sexual exploitation. Multiple conferences and workshops have been held to raise awareness of cyber crime and the need to protect children online. No laws, however, protect users yet. Thanks to the first Lady of Nigeria, Dame Patience Jonathan, "the Government of Nigeria is now taking extensive steps to ensure a safer online environment for children", according to the ITU Secretary-General Hamadoun I. Touré (ITU, 2016).

Moreover, the national policy for ICT, implemented in 2014, enhanced cyber security efforts. Additionally, Kenya, South Africa and Nigeria are all members of the Regional Conference on Africa Child Online Protection (ACOP), an event organised by the ITU focussing on issues relating to child online safety.

Risk vs. Opportunity: Instruments to Strike the Right Balance

Content Blocking Filters

With the view of minimising access to inappropriate content, all of the surveyed countries have implemented technical measures. Among these, content blocking software (e.g. filters) is particularly widespread in Indonesia and Russia.

The perceived benefits of content blocking lies in reducing the amount of illegal content online (i.e. depictions of child sexual exploitation, bestiality, etc.) and reduce the amount of unsuitable content. Their effectiveness however depends on percentages of false negatives and false positives, i.e. the rate of under blocking (allowing undesired content which should be blocked) and the rate of over blocking (not allowing content which is "good" for children) (OECD, 2012).

Similarly, the effectiveness of content blocking filters may also hinge on the level on which these filters are implemented i.e. at i) network level (e.g. Internet Service Provider network or local area networks); ii) server-level (e.g. social network site or search engine) (ibid.)

Results on child strategies in dealing with online content risk may provide an additional perspective to the filters' effectiveness debate. According to these, children display a relatively high take up of technical strategies minimising their access to unsuitable content. For example 64% of children report having installed filters on their own, while 60% of them are likely to use child friendly search engines. Moreover, the most common reaction to unwanted disturbing content is the immediate closing of the page as reported by 60% of children. All in all, these results support the view that the majority of children effectively self-regulate when facing disturbing content.

School and Education

The role of formal education in fostering awareness and promoting safe internet use cannot be underestimated. While this has been widely recognised as a key policy priority by experts and researchers (UNESCO 2014; UNICEF 2012; Livingstone et al. 2013) there is little evidence of curricular adjustments in this sense in the surveyed countries. With the exception of Korea, where the Korean Internet and Security agency has implemented internet literacy and ethics classes, no other country seems to have developed such policies (UNESCO, 2014).

The perceived benefits of including internet safety and digital skills in school curricula are vast. Inclusion into school curricula is expected to increase awareness of the risks that kids may encounter and foster a more responsible use of the web. In addition, a more focused effort towards teaching digital literacy is legitimately expected to widen the array of instrumental actions used to cope with online risk and harm.

Somewhat surprisingly, according to the survey's results, children learn the most about internet safety from their friends (52%), followed by parents (43%) and at school (39%). However, this view is contrasted with their preference for where to seek advice on internet safety as only 28% of them list friends as their first preference, and instead seek advice from a parent or guardian (37%). When learning about internet safety at school is contrasted with different measures of resilience some interesting results emerge. Namely, children who have mostly learned how to surf the web at school display higher resilience scores for the instrumental action and disengagement strategies dimensions.

This reinforces the view that school is the best place to learn digital safety and that the inclusion of digital literacy in school curriculum would augment its relevance for kids.

Hotlines and Reporting Mechanisms

The introduction of more widespread reporting mechanisms, including hotlines, report abuse functions, and online supports to pre-empt abusive situations (UNICEF, 2011) have been suggested are effective means of enhancing resilience. Moreover, some social networking sites already have these kinds of options whereby a young person can be put in touch with law enforcement agencies when feeling vulnerable or threatened.

However, according to the results of this study, using reporting mechanisms or hotlines as a communicative strategy is the one of the least frequently adopted mechanisms internationally across the entire range of online risks outlined in the preceding analysis. This includes only 4% of respondents adopting this strategy in response to disturbing messages, 10% for the misuse of personal information, and 6% for instances of cyber-bullying. More research is therefore needed in order to determine the effectiveness of these tools and how their use can be spread.

Extra-Curricular Learning

Improving the quality and accessibility of online skills education is one of the key global policy initiatives for fostering greater levels of resilience amongst young people. The perceived benefits of this are widespread, ranging from the uptake of more online opportunities to a deeper critical understanding of online content and the risks that are present.

Based on this it has been noted that enhancing extra-curricular learning activities and through the involvement of educational providers, industry, child welfare and other organisations in expanding digital literacy programmes, children would be able to increase their online competences and benefit from a wider range of opportunities (Livingstone and Helsper, 2010). Moreover, this has an important role to play in linking children with internet stakeholders and in listening to their experiences and insights (Byron, 2008).

The success of extra-curricular online safety education is further reinforced from the results of this study, with outside learning being the most effective path towards higher levels of confrontational reactive strategies in response to risk online.

Policy Recommendations

Based on the existing policy options and in light of both the theoretical discussion of safety concerns and the results of the survey, this study recommends a stronger balance between security and freedom with a focus on initiatives fostering child online resilience through access and experience instead of technical and legislative restrictions.

In particular, this study recommends to:

- Promote the inclusion of enhanced digital literacy and internet safety education into school curricula from early childhood education and care, and to ensure the provision of ICT training for teachers and educators.
- Foster extra-curricular activities aimed at promoting responsible and mutually respectful internet use for young people.
- Improve and promote the existing hotline support services as a more reliable means to convey child concerns and to report problems.
- Minimise the impact of over-reaching content filters that might undermine a child's access to information and restrict a child's ability to learn, explore, and build resilience through active engagement with the online world.

Conclusion

The preceding analysis of child online safety has aimed to shed light on the often misconceived relationship between the risks and opportunities faced by children. Taking into account the perspectives of both child protection advocates and advocates of freedom of information and expression, the preceding analysis focussed on the role of digital resilience in equipping children with the navigational tools required to stay safe when online, while also maximising the opportunities the internet provides.

Moreover, based on the lack of country specific and region-wide research internationally, this study was focussed on adding to the existing body of empirical data on child online resilience; investigating the online habits of 9-18 year old children and young people in Israel, Kenya, Nigeria, Russia, South Africa and Turkey.

By focussing on the role of media skills and competencies in responding to risks online, it was found that young people with both high levels of internet literacy and a critical awareness of online content were able to effectively self-regulate their media usage. Furthermore, this had a positive impact on the young person's digital resilience, and therefore in his/her ability to adapt to and avoid stressful situations online. The results also identified children as on the whole being aware of the 'think before you post' principle, despite certain country level variations being present in relation to perception of risk.

Taking into the account the variety of reactive strategies employed by young people when faced with online risk, it was found that the length of time spent online, a young person's psychological makeup, and where they learn their online safety skills play an important part in the types of reactive strategies to risk adopted, and as result, in their level of digital resilience.

Based on the importance of skills and competencies in relation to both understanding online content and in being able to respond effectively to risk, the findings of this research reiterated the need to bring effective media literacy into education and policy, with a key goal in emphasising the role of teachers as facilitators of creativity, innovation and resilience (Donoso and Lievens, 2014). Moreover, the evidence suggests that online protection is often best realised by ensuring young people have access to the online world, and gain meaningful experiences through a positive engagement with online content. This is facilitated best by promoting online participation, and refraining from the excessive restrictions to online content.

Additionally, the positive correlation between exposure to risk and the ability to employ effective coping strategies reiterates the suggestion that increasing a young person's engagement with the online world fosters higher levels of digital resilience.

Accompanying this, it has become clear that creating the right international environment for fostering digital resilience amongst children and young people requires a multifaceted approach, requiring the efforts of families, teachers, policy-makers, industry and academia alike (Linington et al., 2014).

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Appendix A: Resilience Scores

Instrumental preventive			Instrumental coping			Instrumental scores		
						Country	mean	ideal
Turkey	2.50		Turkey	1.73		Turkey	2.12	71%
MEAR	2.08		South Africa	1.48		South Africa	1.74	58%
Russia	2.05		Russia	1.41		Russia	1.73	58%
Nigeria	2.02		Israel	1.35		MEAR	1.69	56%
South Africa	2.01		MEAR	1.30		Israel	1.67	56%
Israel	1.99		Nigeria	0.96		Nigeria	1.49	50%
Kenya	1.94		Kenya	0.95		Kenya	1.45	48%
Disengagment resilience			Behavioural preventive			Cognitive scores		
						Country	mean	ideal
Russia	1.48		Turkey	2.86		South Africa	2.03	68%
Israel	1.45		Nigeria	2.69		Israel	1.98	66%
South Africa	1.44		South Africa	2.61		Russia	1.97	66%
MEAR	1.26		MEAR	2.61		Nigeria	1.94	65%
Nigeria	1.19		Kenya	2.55		MEAR	1.94	65%
Kenya	1.06		Israel	2.52		Turkey	1.89	63%
Turkey	0.93		Russia	2.46		Kenya	1.80	60%
Communicative resilience			Confrontational resilience			Communicative scores		
						Country	mean	ideal
Turkey	1.09		Russia	0.96		South Africa	0.99	33%
South Africa	1.06		Nigeria	0.93		Turkey	0.82	27%
Israel	0.81		South Africa	0.92		Russia	0.80	27%
MEAR	0.80		MEAR	0.80		MEAR	0.80	27%
Russia	0.65		Israel	0.74		Israel	0.77	26%
Kenya	0.64		Kenya	0.66		Nigeria	0.76	25%
Nigeria	0.59		Turkey	0.55		Kenya	0.65	22%

Appendix B: Tables in the Report

Table 1. Instrumental Strategies–International level

Middle East Africa	Use child friendly search engines	Have filters and software on that protects me from unwanted content or contacts	Make my profile unavailable to the general public	Modify privacy settings to keep me away from unwanted contacts	Turn off programmes that I consider risky	Use a secondary account for spam and other emails I don`t want	Use complicated, safe passwords	Keep my passwords completely secret from anyone
Very likely	37%	39%	42%	52%	61%	29%	53%	70%
Fairly likely	24%	25%	27%	26%	23%	23%	25%	19%
Not that likely	16%	18%	15%	10%	8%	20%	11%	6%
Not at all likely	15%	8%	9%	6%	4%	16%	6%	3%
Don`t Know	8%	10%	6%	6%	5%	13%	5%	3%

Table 2. Children Using Child-Friendly Search Engines

Middle East Africa	All countries	Turkey	Russia	Israel	Kenya	Nigeria	South Africa
Very likely	37%	33%	32%	27%	42%	47%	39%
Fairly likely	24%	25%	24%	21%	20%	28%	25%
Not that likely	16%	9%	20%	22%	16%	12%	17%
Not at all likely	15%	32%	19%	17%	7%	6%	13%
Don`t Know	8%	1%	6%	12%	15%	7%	6%

Table 3. Frequency of Internet Usage and Preventive Instruments

Middle East Africa	Filters' use	Switch off risky programmes	Secondary email account	Complicated passwords
More than 5 hrs	2.14125	2.42398	1.65513	2.36836
Between 1 and 5 hrs	2.00497	2.48293	1.63191	2.40161
Less than 1hr	1.78602	2.32203	1.54237	2.05297
No regular access	1.65814	2.14651	1.40233	1.73488
Average	1.96237	2.40217	1.59512	2.25768

Table 4. Behavioural Strategies – International Sample

Middle East Africa	I am careful about which friend requests to accept	I only share things with close friends	I am careful which links or videos I click on to when I search for something	I avoid clicking on things that look weird or suspicious	I sometimes cover the webcam to prevent being seen	I am careful what pictures I share or post	I am careful what I say or post about myself	I limit talking online just to people I know	I limit online activities to apps or websites I trust
Very true	67%	65%	55%	64%	44%	70%	72%	58%	56%
A bit true/Somewhat true	26%	27%	35%	30%	27%	25%	24%	31%	34%
Not true	7%	8%	10%	7%	29%	5%	4%	11%	9%

Table 4.1. Frequency of Internet Usage and Behavioural Strategies

Middle East Africa	More than 5 hrs	Between 1 and 5 hrs	Less than 1hr	No regular Access	Average
I am careful about which friend requests to accept	1.46106	1.38858	1.34958	1.38372	1.40006
I only share things with close friends	1.52658	1.45189	1.44068	1.47442	1.4714
I am careful which links or videos I click on to when I search for something	1.57602	1.54004	1.47669	1.53256	1.53883
I avoid clicking on things that look weird or suspicious	1.44005	1.37741	1.43008	1.5186	1.41842
I sometimes cover the webcam to prevent being seen	1.78863	1.78771	1.92161	1.97907	1.83173
I am careful what pictures I share or post	1.36218	1.33644	1.30508	1.30465	1.33414
I am careful what I say or post about myself	1.34858	1.26505	1.26907	1.3	1.29049
I limit talking online just to people I know	1.72806	1.53631	1.47246	1.53488	1.57375
I limit online activities to apps or websites I trust	1.56489	1.51893	1.52542	1.5186	1.53101

Table 5. Children Being Careful When Talking and Posting

Middle East Africa	All countries	Turkey	Russia	Israel	Kenya	Nigeria	South Africa
Very true	72%	84%	57%	58%	81%	80%	74%
A bit true/Somewhat true	24%	16%	40%	34%	14%	17%	22%
Not true	4%		3%	8%	5%	3%	4%

Table 6. Reactive Strategies for Unwanted Disturbing Content

Middle East Africa	Total
Weighted Total	3327
Stop/get rid of it immediately by closing the page, deleting the file, or scrolling away	60%
Block the website	28%
Talk about it with your parent(s)/guardian(s)	29%
Use a program that prevents this from happening again	21%
Talk about it with a friend	18%
Look away or close your eyes	10%
Keep looking	7%
Talk about it with a brother/sister	8%

Table 7. Reactive Strategies for Unwanted Disturbing Content

Middle East Africa	Total
Stop/get rid of it immediately by closing the page, deleting the file, or scrolling away	69%
Block the website	30%
Talk about it with your parent(s)/guardian(s)	18%
Use a program that prevents this from happening again	25%
Talk about it with a friend	21%
Look away or close your eyes	11%
Keep looking	10%
Talk about it with a brother/sister	9%

Table 8. Reactive Strategies for Unwanted Disturbing Content

Middle East Africa	Turkey	Russia	Israel	Kenya	Nigeria	South Africa
Stop/get rid of it immediately by closing the page, deleting the file, or scrolling away	64%	56%	59%	51%	61%	68%
Block the website	53%	21%	44%	17%	19%	43%
Talk about it with your parent(s)/guardian(s)	29%	21%	20%	28%	22%	35%
Talk about it with a friend	24%	21%	20%	11%	11%	25%
Use a program that prevents this from happening again	20%	22%	9%	28%	23%	22%
Look away or close your eyes	2%	10%	12%	4%	12%	21%
Keep looking	2%	15%	8%	8%	10%	16%

Table 9. Reactive Strategies for Unwanted Disturbing Messages

Middle East Africa	All countries
Weighted Total	3327
Block and report the person	51%
Delete the contact	47%
Ignore the messages and the person	40%
Talk with parent(s)/guardian(s) about what to do	30%
Ask the person to stop sending annoying messages or to delete an embarrassing picture	24%
Talk with brothers/sisters about what to do	8%
Talk with a teacher/lecturer about what to do	4%
Report the issue to the police and show them what happened	4%

Table 10. Reactive Strategies for Unwanted Disturbing Messages - Exposed Children

Middle East Africa	All countries
Weighted Total	1596
Block and report the person	61%
Delete the contact	54%
Ignore the messages and the person	47%
Talk with parent(s)/guardian(s) about what to do	18%
Ask the person to stop sending annoying messages or to delete an embarrassing picture	31%
Talk with brothers/sisters about what to do	9%
Talk with a teacher/lecturer about what to do	4%
Report the issue to the police and show them what happened	4%

Table 11. Reactive Strategies for Unwanted Disturbing Messages by Country

Middle East Africa	Turkey	Russia	Israel	Kenya	Nigeria	South Africa
Delete the contact	74%	55%	52%	20%	27%	58%
Block and report the person	64%	58%	48%	48%	39%	49%
Ignore the messages and the person	13%	49%	44%	36%	50%	43%
Talk with parent(s)/guardian(s) about what to do	29%	23%	50%	19%	14%	48%
Ask the person to stop sending annoying messages or to delete an embarrassing picture	25%	18%	23%	24%	30%	25%
Talk with brothers/sisters about what to do	1%	4%	7%	7%	8%	19%

Table 12. Reactive Strategies for Disturbing Message by Gender

Middle East Africa	Male	Female
Block and report the person	46%	56%
Delete the contact	44%	49%
Ignore the messages and the person	41%	38%
Talk with parent(s)/guardian(s) about what to do	27%	33%
Ask the person to stop sending annoying messages or to delete an embarrassing picture	24%	24%
Talk with brothers/sisters about what to do	7%	8%

Table 12.2. Reactive Strategies for Unwanted Disturbing Messages by Age Group

Middle East Africa	9-12	13-15	16-17	18
Block and report the person	47%	52%	50%	52%
Delete the contact	43%	54%	37%	36%
Ignore the messages and the person	34%	40%	49%	45%
Talk with parent(s)/guardian(s) about what to do	43%	31%	15%	8%
Ask the person to stop sending annoying messages or to delete an embarrassing picture	21%	26%	25%	32%
Talk with brothers/sisters about what to do	8%	10%	8%	6%
Talk with a teacher about what to do	5%	5%	2%	2%
Report the issue to the police and show them what happened	3%	4%	4%	5%

Table 13. Reactive Strategies for Misuse of Personal Information

Middle East Africa	All countries
Change the password	58%
Review privacy settings and choose a more secure password	45%
Use the report button	36%
De-tag yourself	29%
Ask your parent(s)/guardian(s) to help	24%
Disable or delete your account	14%
Report to the game's admin asking to ban the hacker and restore your account	17%
Ask to remove the photo or tag	14%
Tell the network about it in some other way and ask for another password/safer account	12%
Create a new profile and send new friend requests (perhaps telling them what happened)	10%
Use a support line or a hotline to report someone using a fake profile	10%
Provide false data	5%
Politely ask for the account back	4%

Table 14. Reactive Strategies For Misuse of Personal Information - Exposed Children

Middle East Africa	All countries
Change the password	66%
Review privacy settings and choose a more secure password	62%
Use the report button	44%
De-tag yourself	39%
Ask your parent(s)/guardian(s) to help	11%
Disable or delete your account	18%
Report to the game's admin asking to ban the hacker and restore your account	21%
Ask to remove the photo or tag	21%
Tell the network about it in some other way and ask for another password/safer account	22%
Create a new profile and send new friend requests (perhaps telling them what happened)	15%
Provide false data	6%

Table 15. Reactive Strategies for Misuse of Personal Information by Country

Middle East Africa	Israel	Kenya	Nigeria	Russia	South Africa	Turkey
Change the password	54%	37%	50%	76%	58%	76%
Review privacy settings and choose a more secure password	40%	41%	36%	40%	37%	81%
Use the report button	33%	25%	28%	52%	43%	36%
De-tag yourself	38%	14%	24%	34%	30%	39%
Ask your parent(s)/guardian(s) to help	37%	12%	9%	20%	44%	22%
Disable or delete your account	18%	9%	5%	23%	24%	8%
Report to the game's admin asking to ban the hacker and restore your account	19%	12%	10%	31%	21%	10%
Ask to remove the photo or tag	15%	7%	11%	9%	20%	22%
Tell the network about it in some other way and ask for another password/safer account	11%	9%	8%	13%	17%	15%
Create a new profile and send new friend requests (perhaps telling them what happened)	9%	8%	5%	18%	18%	5%
Use a support line or a hotline to report someone using a fake profile	8%	10%	7%	17%	15%	2%
Provide false data	6%	1%	1%	10%	4%	9%
Politely ask for the account back	5%	2%	5%	6%	3%	4%

Table 16. Reactive Strategies for Online Approaches and Meeting Requests

What would you do if a stranger got in touch with you online?	Middle East Africa	*What would you generally do if someone you met online asked you to meet him/her in person?*	Middle East Africa
Ignore him/her	40%	Refuse to meet	52%
Ask my parent(s), guardian(s) if they know this person	29%	Seek advice from your parent(s)/guardian(s)	35%
Ask my friends if they know this person	28%	Seek advice from your friends	15%
Reply to his/her request but only allow him/her to see a limited profile	20%	Agree to meet only if a friend would go with you	13%
Close the page or turn off the computer	14%	Agree to meet only if the stranger is more or less your age	9%
Reply to his/her request or messages	14%	Agree to meet only if a brother/sister would go with you	8%
Temporarily respond yes to his/her request and then delete it shortly after	10%	Agree to meet them	5%

Table 17. Reactive Strategies for Online Approaches and Meeting Requests

What do you do when a stranger gets in touch with you online?	Middle East Africa
Ignore him/her	37%
Ask my parent(s), guardian(s) if they know this person	14%
Ask my friends if they know this person	35%
Reply to his/her request but only allow him/her to see a limited profile	30%
Close the page or turn off the computer	8%
Reply to his/her request or messages	25%
Temporarily respond yes to his/her request and then delete it shortly after	15%

Table 18. Reactive Strategies for Online Approaches by Country

Middle East Africa	Israel	Kenya	Nigeria	Russia	South Africa	Turkey
Ignore him/her	62%	39%	25%	27%	54%	35%
Ask my parent(s), guardian(s) if they know this person	41%	17%	20%	22%	43%	33%
Ask my friends if they know this person	24%	14%	17%	36%	36%	45%
Reply to his/her request but only allow him/her to see a limited profile	7%	21%	31%	28%	18%	14%
Close the page or turn off the computer	18%	13%	6%	9%	20%	16%
Reply to his/her request or messages	5%	14%	30%	21%	13%	0%
Temporarily respond yes to his/her request and then delete it shortly after	4%	7%	11%	20%	9%	10%

Table 19. Reactive Strategies for Meeting Requests by Country

Middle East Africa	Israel	Kenya	Nigeria	Russia	South Africa	Turkey
Refuse to meet	75%	37%	41%	38%	70%	51%
Seek advice from your parent(s)/guardian(s)	30%	41%	34%	31%	38%	36%
Seek advice from your friends	10%	12%	10%	16%	16%	31%
Agree to meet only if a friend would go with you	6%	16%	17%	23%	11%	4%
Agree to meet only if the stranger is more or less your age	3%	3%	9%	29%	6%	3%
Agree to meet only if a brother/sister would go with you	1%	12%	13%	6%	12%	2%
Agree to meet them	1%	5%	6%	7%	2%	8%

Table 20. Reactive Strategies for Cyber - Bullying

Middle East Africa	All countries
Block and report the person	51%
Delete the contact	48%
Talk with parent(s)/guardian(s) about what to do	29%
Show the person you are not bothered by their behaviour by ignoring them	28%
Ask the person to stop sending annoying messages or to delete an embarrassing picture	18%
Talk with brothers/sisters about what to do	8%
Talk with a teacher about what to do	5%
Report the issue to the police and show them what happened	6%

Table 21. Reactive Strategies for Cyber - Bullying Exposed Children

Middle East Africa	All countries
Block and report the person	53%
Delete the contact	53%
Talk with parent(s)/guardian(s) about what to do	19%
Show the person you are not bothered by their behaviour by ignoring them	42%
Ask the person to stop sending annoying messages or to delete an embarrassing picture	27%
Talk with brothers/sisters about what to do	11%
Talk with a teacher about what to do	5%
Report the issue to the police and show them what happened	7%

Table 22. Reactive Strategies for Cyber-Bullying by Country

Middle East Africa	Israel	Kenya	Nigeria	Russia	South Africa	Turkey
Block and report the person	47%	56%	41%	59%	47%	57%
Delete the contact	53%	22%	33%	57%	59%	71%
Talk with parent(s)/guardian(s) about what to do	46%	18%	16%	20%	48%	29%
Show the person you are not bothered by their behaviour by ignoring them	22%	27%	36%	40%	31%	12%
Ask the person to stop sending annoying messages or to delete an embarrassing picture	15%	14%	22%	17%	21%	19%
Talk with brothers/sisters about what to do	7%	6%	7%	8%	17%	0%
Talk with a teacher about what to do	7%	5%	3%	3%	11%	0%
Report the issue to the police and show them what happened	5%	9%	3%	6%	11%	

Think Young
We lobby for young people

This multinational research explores the role of digital resilience intended as the ability to prevent and respond to online risk, and to provide children with the skills and characteristics needed to navigate the internet safely.

Analysing the findings from children aged 9-18 in South Africa, Russia, Israel, Kenya, Nigeria and Turkey; it investigates the ways in which young people can be encouraged to be resilient users.

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