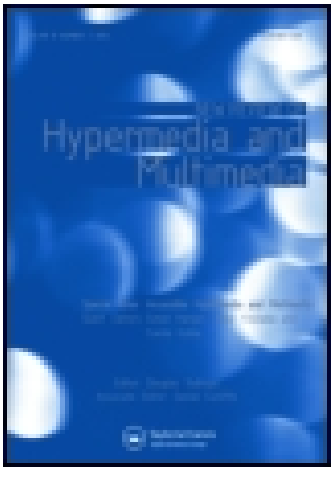

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Comparing online opportunities and risks among Israeli children and youth Hebrew and Arabic speakers

Ina Blau[a]

[a] Department of Education and Psychology, The Open University of Israel, Ra'anana, Israel

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Comparing online opportunities and risks among Israeli children and youth Hebrew and Arabic speakers

INA BLAU*
Department of Education and Psychology, The Open University of Israel, Ra'anana, Israel

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This study explores the relationships between application usage, online communication patterns, problematic Internet use (PIU) of online applications, and online self-disclosure among children from culturally different groups. An online survey was administered in Hebrew and Arabic among 3867 Israeli 7–17 year old, including Jews, Arabs, and Bedouins. The level of PIU was relatively low—only 9.5% scored "very high" in the PIU index. For all the groups the highest level of communication was reported for safe interactions with family and friends, lower level for purely virtual communication with online acquaintances, and the lowest level for meeting online acquaintances face-to-face. However, various forms of the online communication patterns and use of applications differed across the groups, suggesting cultural diversity in Internet usage among children in the same country. PIU and self-disclosure explained 47.3% of variance in risky e-communication activities (e.g. sending ones' photos to online acquaintances, providing them with a school or home address, and meeting them face-to-face), as well as 34.4% of variance in exposure to unpleasant online experiences (e.g. receiving messages, pictures, or videos that make the children feel uncomfortable). However, both PIU and self-disclosure were unrelated to educational activities and to the use of educational applications.

Keywords: Online communication patterns of children and youth; Online safety; Online opportunities and risks; Problematic Internet use; Online self-disclosure; E-learning

1. Introduction

The use of the Internet is deeply embedded in children and youth's lives. According to comprehensive study of more than 25,000 children in 25 European countries (Livingstone, Haddon, Görzig, & Ólafsson, 2011), 60% of 9–16 year old go online daily and 93% of children use the Internet at least weekly, at home (87%) as well at school (63%). In Israel, 73% of youth between the ages 12 and 17 in the Jewish sector and 56% of children and youth in the Arab sector use online applications at least once a day (Dror & Gershon, 2012).

*Email: inabl@openu.ac.il

Internet use by children and youth brings both opportunities and risks. Children extensively use Internet recourses for learning purposes, such as preparing homework (85%; Livingstone et al., 2011). At the same time, about 30% of European children reported interacting online with strangers, 46% had given out personal information to someone that they met online, and 9% of children even have met their online acquaintances face-to-face. However, the same project found that these risks rarely lead to harmful experiences.

This study focuses on online opportunities and risk issues. Specifically, this study compares online application use and Internet-related opportunities and risky behaviors among three groups of children and youth—Israeli citizens: Jews, Arabs, and Bedouins. In addition, this study explores whether and how problematic use of online applications and online self-disclosure among Israeli children from these three groups are related to their application use and online communication patterns. Israeli children extensively use the Internet—the average reported daily usage for Jews is more than 2.5 hours (Blau, 2011a). Unfortunately, Israel not participated in the large study of EU Kids Online (Livingstone et al., 2011) and recent surveys focused on Israeli youth online (Dror & Gershon, 2012; Dror, Gershon, & Blau, 2012; World Internet Project, 2012) did not address online opportunities and risk issues. Other studies, which explored the use of digital applications or devises, focused on one group of Israeli youth, e.g. on Arabs-girls (Hijazi-Omari & Ribak, 2008) or Jewish immigrants from the format Soviet Union (Elias & Lemish, 2009).

The use of digital applications and devices is not a phenomenon isolated from social and economic context. True empowerment of individuals in such groups via the use of the digital application cannot be gained if we continue regarding the use of the Internet as separate from the social realities of disadvantaged user communities (Mehra, Merkel, & Bishop, 2004). In the context of Israeli society, Mesch and Talmud (2010) and latter Mesch (2012) link the disadvantage status of the Arabic speaking minority and the gaps in social capital to the explanation of some cultural differences in Internet use. We would expect to find differences between the majority and minority groups of Israeli children and youth not only in application use, but also in online opportunities and risks.

The results of previous comparative studies of online application use among Israeli Jews and Arabs are not consistent. Nationally representative surveys (Dror & Gershon, 2012; Dror et al., 2012) focused on Israeli youth online documented a variety of significant difference in digital application use between Jews and Arabs. Other nationally representative sample of Jews and Arabs adolescents, in contrast, documented similar patterns and determinants of seeking online health information (Neumark, Lopez-Quintero, Feldman, Hirsch Allen, & Shtarkshall, 2013).

The multi-ethnic nature of Israeli society and the high level of residential and social segregation of Arabs make Israel a perfect setting for researching patterns of Internet-related behaviors (Mesch, Talmud, & Kolobov, 2013). Israeli society includes about 20% of minorities—citizens communicating in the other official language: Arabic (Israeli Central Bureau of Statistics, 2012). Living in the same country, two groups of Israeli children and youth—Hebrew speaking majority and

Arabic speaking minority are both culturally, and linguistically different. Previous study on digital inequality in adult Israeli population (Mesch et al., 2013) showed that differences in Internet usage between Hebrew speaking majority and Arabic speaking minority persist even when social hierarchy indicators such as income, occupation, and education are controlled. Arabic speaking minority in Israeli population is not monolithic, containing different cultural and religious groups. Israeli Arabs and Bedouins—are culturally but not linguistically or religiously different, since both of them speak Arabic and are Muslims. This unique situation of both cultural and linguistic diversity among Israeli children and youth living in the same country enable the comparison of Internet-related behaviors among different groups. We therefore compare Jews majority with minorities Arab and Bedouins, as well as Arab and Bedouins minorities sharing the same language and religion, but culturally different. Such investigation can provide important insights to cultural similarities and differences in application usage and online communication patterns of children and youth.

2. Literature review

This section starts with discussion of online opportunities and risky behaviors in different types of online relationships maintained by children and youth. Following that, problematic Internet use (PIU) term is introduced. To conclude, online self-disclosure phenomenon is discussed.

2.1. Opportunities and risks online: the tale of contacts and content

Online opportunities and risks are a result of interaction with online contacts and content. Based on Stafford (2005), *online contacts* can be divided on three types: traditional long-distance relationships, purely virtual relationships, and migratory mixed-mode. Traditional long-distance relationships refer to online interactions with offline contacts, such as family, friends, or colleagues. Purely virtual relationships deal with online acquaintances, e.g. communicating with similar others from around the world. Migratory mixed mode refers to offline encounters with people met online, e.g. meeting face-to-face an acquaintance from a dating website. The first category is generally perceived by children and their parents as opportunity to use online environment for straitening and maintaining relationships with significant others, while two last categories are perceived as a potential or actual danger (Livingstone et al., 2011). Fortunately, previous studies showed that most of UK (Livingstone & Bober, 2005) and European children and youth' (Livingstone et al., 2011) online communication is with local friends.

By consuming and producing *online content*, children and youth have opportunity to learn a set of digital literacy skills. As consumers, they can learn information thinking skills (Eshet, 2012) that help them successfully search online sources and assess the reliability and accuracy of retrieved information. As producers, they can develop reproduction thinking skills—the ability to use online applications in order to create new authentic content, remix existing online materials, or suggest a new interpretation of information (Dror et al., 2012).

In addition, when children and youth work in groups on shared documents, presentations or spreadsheets, they learn collaborative work skills (Blau, 2011b).

However, at the same time both online contacts and content expose children to different types of risks. Internet in general and social networks in particular can serve not only for learning, empowerment, and well-being of youth, but also for online harassment, sexual solicitation, and cyberbullying (Guan & Subrahmanyam, 2009). Talking with people met online and sending personal information to people met online are risk factors for aggressive sexual solicitations of youth (Mitchell, Finkelhor, & Wolak, 2007). More than 20% of UK children contact strangers and some of them even meet their online acquaintances face-to-face (Livingstone & Bober, 2005). Interacting with online content, many children and youth have come into contact with online pornography, violent content inappropriate for their age, and received unwanted sexual or nasty comments and pictures (Livingstone & Bober, 2005; Livingstone et al., 2011). Recently, the increased public discourse around user-generated content has introduced a new area of concern: youth-generated problematic content (Boyd, Ryan, & Leavitt, 2011). Even if some of problematic youth-generated content is not illegal, such as pro-self-harm content, which promotes self-injury techniques and eating disorders—anorexia and bulimia, it encourages viewers' engagement in self-harm activities.

2.2. Problematic Internet use

Using different online applications, some users experience obsessive patterns of IT-seeking and IT-use behaviors that infringe their normal functioning (Turel & Serenko, 2012). There is no standard term in the research literature for describing Internet-related problems experienced by users of different online applications (for the review see: Morahan-Martin, 2008). This maladaptive psychological state of dependency is discussed as Internet addiction (Lin, Ko, & Wu, 2011), technology addiction (Turel & Serenko, 2012), Internet Abuse (Blau, 2011a), PIU (Koronczai et al., 2011), compulsive Internet use (Meerkerk, van den Eijnden, Vermulst, & Garretsen, 2009), or pathological Internet use (Niemz, Griffiths, & Banyard, 2005). Some researchers refer to Internet-related problems not only in the dichotomy manner as healthy online use versus clinical disorder, but also as a continuum from normal to disturbed use of the Internet in general/specific online applications (Caplan, 2005; Morahan-Martin & Schumacher, 2000; Turel & Serenko, 2012; Turel, Serenko, & Giles, 2011), or as the continuum of deficiencies in the self-regulation processes (LaRose, Lin, & Eastin, 2003). This paper adopts the approach to Internet-related problems as a continuum and uses the term "PIU" as "patterns of using the Internet that result in disturbances in a person's life but does not imply a specific disease process or addictive behavior" (Morahan-Martin, 2008, p. 34). Therefore PIU has been predominantly studied in non-pathological populations (LaRose et al., 2003). The results of the EU Kids Online survey showed that 30% of European 11–16 year old experienced excessive Internet usage, neglecting friends, schoolwork, or sleep (Livingstone et al., 2011). They manifested a number of core computer-related addiction symptoms (Turel & Serenko, 2012) that include conflict (e.g. the being online conflicts with other tasks), withdrawal (i.e., negative emotions arise when a

person cannot go online), relapse and reinstatement (i.e., inability to reduce the usage), and behavior salience (i.e., internet usage dominates other daily tasks). In other words, these children and youth—participants of EU Kids Online survey reported some degree of PIU.

The research of PIU lacks a uniform set of empirically validated criteria (Morahan-Martin, 2008). Young's (1996, 1998) eight criteria modified from the Diagnostic and Statistical Manual of Mental Disorders criteria for pathological gambling are widely used for diagnosing Internet-related problems in adult population (Beard & Wolf, 2001, Morahan-Martin, 2008; Turel & Serenko, 2012). For measuring PIU through survey, this study uses a questionnaire based on Young's (1996) eight criteria that has been adapted and used for investigating this phenomenon among children and youth (Blau, 2011a).

2.3. Online self-disclosure

Sharing personal information with people is an essential process for the formation of close relationships with others (Altman & Taylor, 1973). Self-disclosure refers to information about the self that a person communicates to others and can include thoughts, feeling, and experiences (Archer, 1980; Derlega, Metts, Petronio, & Margulis, 1993; Joinson & Paine, 2007; Sillence & Briggs, 2007; Suler, 2004).

Online self-disclosure is similar to offline one in being a reciprocal process for developing and enhancing interpersonal relationships (Barak & Suler, 2008; Joinson, 2007). Previous findings show a strong relationship between adherence to norms of online identity disclosure and the disclosure of personal information online through the posting of personal photos, videos, and an online profile (Mesch & Beker, 2010). Some researchers claim that online self-disclosure tends to be deeper and faster in comparison to disclosure in face-to-face communication (Barak & Bloch, 2006; McCoyd & Schwaber Kerson, 2006). Others question this argument and suggest that the degree of online disclosure is moderated by the relationship between the communicators, communication mode, and the context of the interaction (Nguyen, Bin, & Campbell, 2012).

A high level of online self-disclosure is mostly explained by the online disinhibition effect (Joinson, 2007; Joinson, Houghton, Vasalou, & Marder, 2011; Joinson & Paine, 2007; Lapidot-Lefler, 2009; Suler, 2004). Online disinhibition effect refers to lowering of behavioral inhibitions in the online environment (Kiesler, Siegel, & McGuire, 1984; Suler, 2004) as a result of anonymity (McKenna & Bargh, 2000; Spears, Lea, & Postmes, 2007) and/or invisibility of textual communication (Barak, 2007; Lapidot-Lefler & Barak, 2012). Anonymity, being unknown (nameless) to others, is considered a major determinant of online disinhibited behavior (Joinson, 2007). However, even in online interactions in which communicators know each other, they can affect the level of self-disclosure by controlling the amount and duration of visibility or invisibility through the use or nonuse of pictures, webcam, and videos (Lapidot-Lefler, 2009; Lapidot-Lefler & Barak, 2012).

Recently, a high level of online self-disclosure in non-anonymous environments, such as social networks sites (SNS), is also explained by gratification mechanisms of social media (Joinson et al., 2011; Taddicken & Jers, 2011). Self-disclosure in SNS can be seen as a part of the functionality of the technology itself

and typically making themself known to other users is critical for being accepted as a part of the community (Taddicken, 2013). SNS profiles can be seen as a digital body where youngers write themselves into being—express salient aspects of their identity, primarily for their friends and peers to view and interpret (Boyd, 2007). Revelation of private information and the quantity of disclosed information in SNS is linked to the degree of networking and rewarded with social gratification (Lampe, Ellison, & Steinfield, 2007; Taddicken & Jers, 2011). Although SNS are typically non-anonymous environments, in interactions through SNS users are mainly invisible to each other and therefore perceive the online disinhibition effect, which amplifiers their self-disclosure. Disinhibition and self-disclosure may be even stronger in SNS than in other applications because of the gratification mechanisms of social media.

2.4. Research questions

This study aims to explore online opportunity and risk issues among different groups of Israeli children. In addition, the study investigates whether and how PIU and self-disclosure are linked to application use, online opportunities and risks.

The research questions are:

(1) Are there cultural differences among Israeli Jews, Arabs, and Bedouins in (a) the use of online applications and (b) in online opportunities and risks?
(2) How the levels of PIU and online self-disclosure of Israeli children from culturally different groups are linked to (a) their use of online applications and (b) online opportunities and risks?

3. Method

3.1. Participants

The participants were a self-selected sample of 3867 Israeli children and youth Internet users completed an online questionnaire posted on an Internet Safety Day (ISD) website. Participants' age was normally distributed (Range: 7–17, Median: 11, Mean: 11.21, SD: 1.52, Skewness: 0.64). Both genders were equally presented in this survey: 1909 of the participants (49.4%) of the participants were males. The participants were from three groups: 2884 of them were Jews, 534 Israeli Arabs, and 449 Israeli Bedouins. The proportion of the Arab participants in the sample was similar to their representation in Israeli population according to Israeli Central Bureau of Statistics—about 20.7%. Bedouins were overrepresented in the sample for statistical reasons. Druze and Christian Arabic speaking small minority groups that live in Israel were not a part of this study, since they are religiously different from Arabs and Bedouins who are Muslims.

3.2. Instruments

An online survey administered in Hebrew and Arabic to Israeli children and youth included three parts:

3.2.1. Problematic Internet use. It was measured by Blau's (2011a) questionnaire based on the eight criteria of Young (1996). The examples of the items are: "When I am offline, I anticipate the next time I will be online," "I have made unsuccessful attempts to reduce the amount of my online activities," "Because of the time I stay online, suffers activities I need to or want to do, e.g. homework, extra-curricular activities, meeting friends." Participants indicated the degree of their agreement with each statement using the five-point Likert scale ranges from 1 – "strongly disagree" to 5 – "strongly agree". Confirmatory factor analysis with Varimax rotation combines 8 items into a single factor for both questionnaires in Hebrew and Arabic. Internal consistency of the questionnaire was high—Cronbach's alpha for the 8 items was .89 for the Hebrew and .87 for the Arabic version of the PIU questionnaire. All the items were included into the PIU index (Range: 1–5, Mean: 2.38, SD: 1.13, Median: 2.11, Skewness: 0.52). The level of PIU was relatively low—only 9.5% of all the participants scored "very high" (more than 4 in average) in PIU index.

3.2.2. Online self-disclosure scale. The Revised Self-Disclosure Scale (Wheeless, 1978; Wheeless & Grotz, 1976) was adapted for exploring self-disclosure in online textual chat (Leung, 2002). In order to measure private information that participants communicate to others, this study used a short version of Leung's scale translated to Hebrew (Lapidot-Lefler, 2009) and adapted it to the general context of online communication (Blau, 2011a) instead of specific settings of online chat interactions. Previous studies have provided evidence of the construct validity of the Revised Self-disclosure Scale (Wheeless, 1978; Wheeless & Grotz, 1977; Wheeless, Nesser, & McCroskey, 1986). Regarding internal consistency, for the version of the scale measured online self-disclosure in textual chat Cronbach's alphas for different dimensions were acceptable (Leung, 2002). However, Leung used Cronbach's alpha (instead of Person correlation) even for the dimension of the scale that included only two items. Other studies reported internal consistency for the *overall* scale that was acceptable in both English version (Myers & Johnson, 2004) and Hebrew version of the scale (Blau, 2011a; Lapidot-Lefler, 2009). Overall internal consistency in this study was .77 for the Hebrew version and .75 for the Arabic version of the scale. All nine items were included into the self-disclosure index (Range: 1–5, Mean: 2.74, SD: 0.70, Median: 2.61, Skewness: 0.55).

3.2.3. Application use and online communication patterns. Participants indicated the degree to which they use different applications or communicate in certain way online using a five-point Likert-type scale ranging from 1- "not at all" to 5 – "very much." Descriptive statistics for these parts of the survey are presented in the Results section (Tables 1 and 3).

Back-translation method was used for the Arabic version of the survey in order to insure that the translation is valid.

Table 1. Descriptive statistics for application use among the groups.

Applications	Jews (n = 2884): Mean (SD)	Arabs (n = 534): Mean (SD)	Bedouins (n = 449): Mean (SD)
Searching data	3.62 (1.21)	3.86 (1.21)	3.77 (1.36)
Facebook	3.94 (1.60)	3.06 (1.80)	2.72 (1.83)
Instant messaging	2.76 (1.75)	2.89 (1.70)	2.66 (1.76)
Email	3.15 (1.51)	3.20 (1.68)	3.08 (1.77)
Reading other blogs	1.86 (1.36)	1.98 (1.41)	2.13 (1.55)
Writing my blog	1.59 (1.22)	2.02 (1.44)	1.99 (1.47)
Reading messages in forums	2.74 (1.53)	2.62 (1.56)	2.67 (1.67)
Posting messages in forums	2.29 (1.45)	2.52 (1.57)	2.27 (1.58)
Searching on YouTube	3.91 (1.33)	3.18 (1.53)	3.41 (1.62)
File sharing apps (Kazza, Emule, Torrent)	2.44 (1.59)	1.84 (1.36)	1.94 (1.50)
Photo sharing applications (Flikr, Picasa)	3.07 (1.69)	2.04 (1.53)	1.66 (1.29)
Twitter	1.42 (1.09)	1.69 (1.27)	1.82 (1.40)
Internet voice applications (Skype)	2.35 (1.57)	1.86 (1.35)	1.84 (1.38)
Playing online games	4.23 (1.12)	3.97 (1.32)	3.96 (1.32)
Virtual reality applications (Second life)	1.67 (1.27)	1.89 (1.36)	1.74 (1.33)
Reading news online	2.23 (1.44)	3.65 (1.53)	3.88 (1.42)
Watching TV shows online	3.29 (1.42)	3.51 (1.51)	3.31 (1.48)

3.3. Procedure

An online questionnaire was published in Hebrew and Arabic on the ISD website for Israeli children and youth two weeks before the international ISD was celebrated on February, 2012. Since during the ISD students are exposed at schools to activities promoting safe Internet surfing, the questionnaire was closed before this date. The questionnaire was approved by the institutional Ethic Committee. Google Form application was used for collecting the data and SPSS 19 program for the analysis.

4. Results

The first two sub-sections of the Results compare the use of online applications and online opportunities and risks among three groups of Israeli children and youth: Jews, Arabs, and Bedouins. Following that, we show how the level of PIU and self-disclosure of children from these groups are related to their use of applications, online opportunities and risks. To conclude, we further explore whether and how PIU and self-disclosure explain the variance in e-learning, risky communication patterns of children, and unpleasant behavior of others toward them.

4.1. Cultural differences between the groups in the use of online applications

In order to explore differences between the groups in the use of online applications one-way analysis of variance (ANOVA) tests were conducted. Table 1

Table 2. Descriptive statistics for online opportunities and risks.

Online opportunities and risks	Jews (n = 2884): Mean (SD)	Arabs (n = 534): Mean (SD)	Bedouins (n = 449): Mean (SD)
Online interactions with people known F2F	3.81 (1.50)	3.64 (1.44)	3.50 (1.50)
Online interactions with e-acquaintances	1.94 (1.39)	2.72 (1.58)	2.37 (1.49)
Using a nickname with e-acquaintances	2.31 (1.62)	3.03 (1.60)	2.68 (1.60)
Studying online with classmates	2.92 (1.38)	2.52 (1.64)	2.30 (1.60)
Using Internet for preparing homework	3.97 (1.28)	3.76 (1.46)	3.90 (1.41)
Using Internet for getting information	3.88 (1.31)	3.68 (1.50)	3.71 (1.36)
Meetings e-acquaintances F2F	1.28 (0.86)	2.10 (1.49)	1.86 (1.36)
Visiting sites with inappropriate contents	1.50 (1.09)	1.98 (1.44)	1.76 (1.30)
Staying late online	2.55 (1.51)	2.40 (1.53)	2.12 (1.38)
Providing a school address to e-acquaintances	1.48 (1.09)	2.42 (1.59)	2.30 (1.51)
Providing a home address to e-acquaintances	1.34 (0.94)	2.04 (1.49)	1.78 (1.34)
Sending my photos to e-acquaintances	1.34 (0.99)	1.91 (1.42)	1.74 (1.31)
Receiving uncomfortable messages	1.65 (1.14)	2.10 (1.48)	1.83 (1.35)
Receiving uncomfortable pictures	1.49 (1.05)	1.90 (1.41)	1.64 (1.22)
Receiving uncomfortable videos	1.46 (1.04)	1.94 (1.43)	1.74 (1.24)

shows descriptive statistics and Table 2 presents the analysis of variance and Bonferroni post-hoc tests for online application usage by the participants from different groups. Statistically non-significant differences between the groups are presented in gray.

As shown in Table 3, children and youth from different groups reported similar use of email and reading messages in class forums. However, the participants differ in using Facebook, searching videos on YouTube, audio conferencing via Skype, file sharing, and photo sharing applications which were used significantly more by Jewish children and youth in comparison to Arabs and Bedouins. In contrast, Arabs and Bedouins read significantly more online news and wrote more blog posts in comparison to the Jewish children and youth.

4.2. Cultural differences between the groups in online opportunities and risks

In order to explore differences between the groups in online opportunities and risks one-way ANOVA tests were conducted. Table 3 shows descriptive statistics and Table 4 presents the analysis of variance and Bonferroni post-hoc tests for the online opportunities and risks. Statistically non-significant differences between the groups are presented in gray.

As can be seen from the data presented, all the participants reported the high level of using the Internet for learning purposes—searching information and preparing homework, as well as for online interactions with offline contacts. Children and youth in all the groups reported a high level of online communication with offline acquaintances, lower level of interactions with people they met online, and the lowest level for meeting online acquaintances face-to-face.

Table 3. Analysis of variance and post-hoc tests for application use.

	General		Post-hoc Bonferroni tests		
Applications	F	$p <$	Jews–Arabs $p <$	Jews–Bedouins $p <$	Arabs–Bedouins $p <$
Searching data	10.77	.001	.001	.05	n.s.
Facebook	148.86	.001	.001	.001	.001
Instant messaging	2.12	n.s.	n.s.	n.s.	.05
Email	0.75	n.s.	n.s.	n.s.	n.s.
Reading other blogs	8.10	.001	n.s.	.001	n.s.
Writing my blog	37.61	.001	.001	.001	n.s.
Reading messages in forums	1.62	n.s.	n.s.	n.s.	n.s.
Posting messages in forums	5.41	.01	.001	n.s.	.01
Searching on YouTube	76.65	.001	.001	.001	.01
File sharing apps (Kazza, Emule, Torrent)	46.54	.001	.001	.001	n.s.
Photo sharing applications (Flikr, Picasa)	204.45	.001	.001	.001	.001
Twitter	31.43	.001	.001	.001	n.s.
Internet voice applications (Skype)	39.96	.001	.001	.001	n.s.
Playing online games	18.75	.001	.001	.001	n.s.
Virtual reality applications (Second life)	6.62	.001	.001	.001	.06
Reading news online	409.15	.001	.001	.001	.05
Watching TV shows online	5.17	.01	.001	n.s.	.05

Jews reported significantly lower levels of interactions with online acquaintances and meeting them face-to-face compared to Arabs, and especially in comparison to Bedouins. Similar patterns of differences between the groups were found in the willingness of children and youth to send their photos, information regarding their school, or home address to people they met online.

4.3. PIU and self-disclosure in relation to application usage

Table 5 shows Pearson correlations between PIU and self-disclosure and the use of online applications. Significant correlations are presented in bold. Because the segment of Jewish subjects of the sample is very large (n = 2884), even small effects can reach statistical significance. Therefore, for jews the following results report the effect size (Cohen's d) for the medium and large coefficients, instead of statistical significance. Please note that all the variables were reported by the participants in the same time-point and because of the research design we are unable to conclude that PIU or self-disclosure of children impacted their use of online applications. Thus, it seems that there is no added value in using a simple regression analysis instead of Pearson correlations.

As can be seen from the results, for all the groups neither problematic use nor self-disclosure was related to the use of online applications for learning purposes, such as searching for information, reading, and posting in class forums. In

Table 4. Analysis of variance for online opportunities and risks.

	General		Post-hoc Bonferroni tests		
Online opportunities and risks	F	$p <$	Jews–Arabs $p <$	Jews–Bedouins $p <$	Arabs–Bedouins $p <$
Online interactions with people known F2F	9.90	.001	.05	.001	n.s.
Online interactions with e-acquaintances	74.80	.001	.001	.001	.001
Using a nickname with e-acquaintances	50.84	.001	.001	.001	.001
Studying online with classmates	47.74	.001	.001	.001	.05
Using Internet for preparing homework	5.90	.01	.001	n.s.	n.s.
Using Internet for getting information	7.22	.001	.01	.01	n.s.
Meetings e-acquaintances F2F	178.52	.001	.001	.001	.001
Visiting sites with inappropriate contents	43.19	.001	.001	.001	.01
Staying late online	16.61	.001	.05	.001	.01
Providing a school address to e-acquaintances	193.97	.001	.001	.001	n.s.
Providing a home address to e-acquaintances	112.40	.001	.001	.001	.001
Sending my photos to e-acquaintances	66.90	.001	.001	.001	.05
Receiving inappropriate messages	32.60	.001	.001	.01	.001
Receiving inappropriate pictures	31.27	.001	.001	.01	.001
Receiving inappropriate videos	48.49	.001	.001	.001	.01

contrast, both PIU and self-disclosure correlated for all the groups with sharing photos, using virtual reality, and watching TV shows online.

For some applications cultural differences were found. In contrast to Arabs and Bedouins, for Jews problematic use correlated with using social media, Facebook, chatting via Instant Messaging, and searching videos on YouTube, and both PIU and self-disclosure were linked to reading and writing blogs, sharing files, using microblogging—Twitter, and audio conferencing—Skype. Despite the participants from all the groups reported high use of online games, gaming correlated to PIU for Bedouins only (note that the item regarding online games in the survey does *not* refer to social multiuser games).

4.4. PIU and self-disclosure in relation to online opportunities and risks

Table 6 shows Pearson correlations between PIU, self-disclosure, and online opportunities and risks. Significant correlations are presented in bold. As in previous analysis, since we are unable to explore the cause-effect relationships between the variables, we stick to Pearson correlations instead of simple regressions.

As can be seen, for all the groups neither with problematic use nor self-disclosure correlated with using the Internet for learning purposes—studying with classmates, preparing homework, and searching for information. In contrast both, PIU and self-disclosure correlated for all the groups with risky communication patterns of the participants, such as sending photos, school information, or home address to online acquaintances, meeting them face-to-face, visiting inappropriate websites, staying late online. In addition, problematic use and self-disclosure correlated to the harassment of children by other Internet users, such as sending messages, photos, or videos that make children feel uncomfortable, and these correlations were mostly high.

In order to further explore whether and how both PIU and self-disclosure explain the variance in e-learning, risky communication patterns of children, and unpleasant behavior of others toward them, three indexes were computed. Since the patterns presented in Table 6 are similar for all the groups, this additional analysis was done for the entire sample. *E-learning index* included 3 items: studying with classmates, preparing homework, and searching for information, Cronbach's alpha = .72. The *index of risky e-communication patterns* included 4 items: sending photos, school information, or home address to online acquaintances, and meeting them face-to-face, $\alpha = .88$. The *e-harassment index* included 3 items: sending messages, photos, or videos by others that make children feel uncomfortable, $\alpha = .86$.

Following that, multivariate linear regressions with two independent variables were conducted. PIU and self-disclose explained only 6% of difference in e-learning index and the impact of each independent variable was not statistically significant. In contrast, PIU ($\beta = .44$, $p = .000$) and self-disclosure ($\beta = .38$, $p = .000$) explained 47.3% of variance in risky e-communication patterns. In addition, problematic use ($\beta = .33$, $p = .000$) and self-disclosure ($\beta = .37$, $p = .000$) of children explained 34.4% of variance in their e-harassment by other Internet users.

5. Discussion and implications

Regarding the *first research question*, the analysis of differences in usage of online applications and online opportunities and risks among the three groups of Israeli children and youth—Jews, Arabs, and Bedouins—showed that Jews used more social networks, audio conferencing, video, file, and photo sharing, while Arabs and Bedouins preferred reading online news and writing blogs. In other words, for recreational purposes Jewish children and youth highly use the media, while Arabs and Bedouins prefer textual format for both receiving and disseminating information, suggesting cultural diversity among children and youth from different groups living in the same country. Mesch and Talmud (2010) and Mesch (2012) explained cultural differences in Internet use, such as searching for data, writing more blog posts, and posting more in forums by Arabs compare to Jews, by the disadvantage status of the Arabic minority in Israel and the gaps in social capital. Higher use of social media by Jews compared to Arabic speaking

Table 5. Correlations between PIU and self-disclosure and application use.

	Jews		Arabs		Bedouins	
Applications	PIU *r* (*d*)	Self-D. *r* (*d*)	PIU *r*	Self-D. *r*	PIU *r*	Self-D. *r*
Searching data	.11	.04	−.07	−.09	.10	.04
Facebook	**.26** (0.53)	.12	.01	−.03	−.03	−.06
Instant messaging	**.27** (0.56)	.17	.05	.03	.08	.04
Email	.17	.11	−.03	−.05	.09	−.04
Reading other blogs	**.29** (0.61)	**.22** (0.45)	.00	−.04	.14	.01
Writing my blog	**.30** (0.63)	**.25** (0.52)	−.01	−.10	.12	.03
Reading messages in forums	.12	.10	−.02	.−05	.09	.02
Posting messages in forums	.17	.17	.01	−.05	.07	.07
Searching on YouTube	**.29** (0.61)	.14	.04	.03	.11	.01
File sharing applications (Kazza, Emule)	**.28** (0.58)	**.20** (0.41)	.02	−.09	.10	−.02
Photo sharing applications (Flikr, Picasa)	**.40** (0.87)	**.28** (0.58)	**.47*****	**.51*****	**.37*****	**.46*****
Twitter	**.29** (0.61)	**.29** (0.61)	−.09	−.10	.09	−.04
Internet voice applications (Skype)	**.30** (0.63)	**.21** (0.43)	−.01	−.10	.09	−.04
Playing online games	.13	.05	.16	.13	**.25****	.04
Virtual reality applications (Second life)	**.29** (0.61)	**.28** (0.58)	**.49*****	**.54*****	**.27*****	**.38*****
Reading news online	.15	.14	.16	.12	**.23****	.16
Watching TV shows online	**.28** (0.58)	**.20** (0.41)	**.33*****	**.28*****	**.39*****	**.22***

*$p < .05$, **$p < .01$, ***$p < .001$.

minorities in the current study is consistent with the results of recent survey among Israeli youth (Dror et al., 2012).

In contrast, the participants of all the groups widely use the Internet for educational purposes, such as preparing homework and searching for information, and no differences were found in the use of educational applications, such as email and class forums (note that Israeli children and youth do not normally use email, except for school settings). These results are consistent with the EU Kids Online study reporting a high use of the Internet for preparing homework (Livingstone et al., 2011). It seems promising that children and youth from minorities perceive using online resources for learning at the level similar to peers from the majority group. This result seems to be related to educational policies. The Israeli Ministry of Education comprehensive reform provides information and communication technologies (ICT) to schools and technological-pedagogical training to teachers in order to adapt the education system to the twenty-first century. The technologies are gradually entering in different regions; nevertheless, in each region the implementation is simultaneous for both Hebrew and Arabic speaking sectors. This educational policy is especially important since previous study, which explored ethnic differences in online access among Israeli adults (Mesch & Talmud, 2011), showed that Arabs are less exposed to the online environments because they are concentrated in blue-collar occupations that do not

Table 6. Correlations between PIU, self-disclosure, and online opportunities and risks.

	Jews		Arabs		Bedouins	
Online opportunities and risks	PIU *r* (*d*)	Self-D. *r* (*d*)	PIU *r*	Self-D. *r*	PIU *r*	Self-D. *r*
Online interactions with people known F2F	**.25** (0.52)	.17	**.40*****	**.33*****	**.37*****	**.25****
Online interactions with e-acquaintances	**.43** (0.95)	**.40** (0.87)	**.58*****	**.52*****	**.46*****	**.42*****
Using a nickname with e-acquaintances	.18	.06	**.45*****	**.25****	**.31*****	**.20***
Studying online with classmates	.13	.12	.19	.18	.19	.17
Using Internet for preparing homework	.13	−.03	.18	.07	.15	.06
Using Internet for getting information	.18	.02	.19	.18	.18	.06
Meetings e-acquaintances F2F	**.33** (0.69)	**.42** (0.93)	**.56*****	**.57*****	**.49*****	**.43*****
Visiting sites with inappropriate contents	**.40** (0.87)	**.37** (0.77)	**.63*****	**.61*****	**.54*****	**.43*****
Staying late online	**.58** (1.42)	**.31** (0.65)	**.61*****	**.51*****	**.58*****	**.40*****
Providing a school address to e-acquaintances	**.40** (0.87)	**.43** (0.95)	**.55*****	**.50*****	**.43*****	**.41*****
Providing a home address to e-acquaintances	**.36** (0.77)	**.43** (0.95)	**.57*****	**.61*****	**.41*****	**.40*****
Sending my photos to e-acquaintances	**.36** (0.77)	**.40** (0.87)	**.61*****	**.59*****	**.50*****	**.42*****
Receiving inappropriate messages	**.39** (0.85)	**.34** (0.72)	**.59*****	**.63*****	**.43*****	**.58*****
Receiving inappropriate pictures	**.34** (0.72)	**.37** (0.77)	**.55*****	**.59*****	**.35*****	**.43*****
Receiving inappropriate videos	**.36** (0.77)	**.38** (0.82)	**.57*****	**.58*****	**.40*****	**.43*****

*$p < .05$, **$p < .01$, ***$p < .001$.

involve work with computers and the Internet. The results of current study show that current educational strategy is successful for enhancing minorities and can be recommended for implementing online applications in the education system in countries with diverse population groups.

Regarding online communication patterns, for all groups the highest level was found for online relationships with family and friends. A lower level was reported for purely virtual communication with online acquaintances that might expose the participants, especially young children, to a potential risk. The lowest level was found for the most risky behavior—meeting online acquaintances face-to-face. These results are consistent with the survey of European children (Livingstone et al., 2011). Current findings suggest that children and youth are aware of the potential danger of offline meetings with online acquaintances; hopefully they behave in accordance with their reports. However, it is possible that some children, intentionally or unintentionally, tend to give socially appropriate answers to sensitive questions.

The general level of unpleasant online experiences, such as receiving messages, photos, or videos that make children and youth feel uncomfortable, was also

relatively low. These findings are quite optimistic, suggesting that using the Internet children and youth are exposed to relatively low level of external risks. The results are consistent with the EU Kids Online study (Livingstone et al., 2011), in which most children did not reported being bothered online, and only 1 in 20 children reported receiving nasty or hurtful messages. Similarly, only 16.5% of 242 Israeli adolescents reported being cyber-victims (Olenik-Shemesh, Heiman & Eden, 2012).

However, significant differences were found in risky online communication patterns of children and youth from different groups. Compared to Jews, Arabs and Bedouins were more inclined to communicate online with people they did not know offline and met their online acquaintances face-to-face, as well as sent their photos, information regarding school, or their home address to people they met online. A possible explanation for these differences can be that Facebook, which was more popular among Jews, is typically used for communicating online with people that users already know (Boyd, 2007; Lampe et al., 2007). In contrast, Arabs and Bedouins are more often blogging and hence more interacting with unknown people. These differences found in application use and in meeting online acquaintance face-to-face can be interconnected. Previous results show that posts receive comments if bloggers share personal experiences and thoughts rather than provide factual information (Blau, Mor, & Neuthal, 2013). Thus, the preferable applications affect whether or not users get in touch with new people online, discuss with them personal experiences and potentially have more probability to meet them offline. Future studies may explore this explanation.

In addition, Arabs and Bedouins were significantly more than Jews exposed to unpleasant experiences, such as receiving inappropriate messages, photos, or videos from other Internet users. This difference can be explained by extensive Internet safety campaign via TV channels in Hebrew (note that most of the TV content presented in Hebrew and Arabic is different), suggesting the effectiveness of using TV for Internet safety education. Similarly, Livingstone et al. (2011) argued that traditional media are an important source for getting Internet safety information in European countries. However, this possible explanation needs further investigation using qualitative methods.

Concerning the *second research question* of relationships between PIU and online self-disclosure of children from different groups with the use of online applications, online opportunities and risks, the results showed that for all the groups both problematic use and self-disclosure correlated with sharing photos, using virtual reality platforms, and watching TV shows online. It seems that these activities are similarly immersive for all children and youth.

The general level of PIU reported in this study was relatively low and only 9.5% of children scored of "very high" in the PIU index. In total 27.9% of the participants were above the "medium" level, suggesting that internal risk experienced by children and youth as a result of using the Internet is not high. Similarly, in the EU Kids Online study (Livingstone et al., 2011) about 30% of children reported some degree of neglecting friends, schoolwork, or sleep as a result of excessive Internet use.

For all the groups neither problematic use nor self-disclosure was related to using the Internet for learning purposes—studying with classmates, preparing homework, and searching for information. PIU and self-disclosure explained only 6% of differences in e-learning index. It seems that exploring online opportunities for learning purposes is associated with neither problematic use nor self-disclosure of children and can be widely used by educators both at classrooms and at children's home.

In contrast, for all the groups both problematic use and self-disclosure were related to risky online communication patterns, such as sending ones' photos to online acquaintances, providing them with a school, or home address, and meeting online acquaintances face-to-face. PIU and self-disclosure explained 47.3% of variance in the index of risky e-communication patterns. In addition, problematic use and self-disclosure correlated with exposure to unpleasant online experiences in form of receiving messages, pictures, or videos that make the children feel uncomfortable. PIU and self-disclosure explained 34.4% of variance in the e-harassment index based on these unpleasant experiences of children. Thus, exploration of the potential danger evolving from PIU and from self-disclosure in online communication should be a focal point of online safety educational programs.

It should be taken into consideration that the conclusions of this study are based on participant self-report that can differ from their actual online behavior (Blau & Barak, 2012). Moreover, this study addresses unpleasant experiences that children are exposed to only in *online* environments. It would be interesting to explore in future studies the interplay between the online risks of children and youth and their offline harmful experiences and victimization. For example, in EU Kids Online study (Livingstone et al., 2011), variables such as problems with peers, conduct problems, and emotional problems explained exposure of children to online risks. In addition, future studies may explore the possibility of communication with offline acquaintance that became closer in online environments and could enhance online opportunities as well as risks.

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