Day-to-Day Technology Use and Training Needs of Teens with ASD and Typically-Developing Peers

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Background

- The use of technology is ubiquitous in teens with ASD and their typically-developing (TD) peers.
- Many people with autism spectrum disorder (ASD) are interested in and prefer screen-based activities to other activities (Mazurek, 2012).
- Computer competency is an important adaptive skill and is necessary for many careers.
- In the first years out of high school, 35% of young adults with ASD in the US were jobless and were not involved in higher education (more than comparison disabilities). Only 58% had paying jobs into their 20s and most jobs were low wage or part time (lower than comparison disabilities). Vocational skills most important services needed (Roux, 2015).
- Little research has focused on how people with ASD use technology in their day-to-day lives and whether that technology is accessible to them to meet their occupational, economic, entertainment, and information needs (Cohen, 2015).

Objectives

To understand which technologies are used by teens with ASD and TD peers, the difficulties that they are having, and parent-perceived needs for technology training.

Methods

- An anonymous 80-question online survey developed in SurveyMonkey; University of Baltimore IRB: Exempt
- Recruited via email to Interactive Autism Network (IAN) Research registry participants, IAN Community (www.iancommunity.org), and Facebook
- Administered September 9, 2015 through October 24, 2015 to parents/guardians of children ages 13 – 17 in the US with and without ASD

Results

Analysis groups (n=347):

- **ASD Low** (134; 39%) - Teens with ASD and parent-reported below-normal intellectual ability
- **ASD Normal** (129; 37%) - Teens with ASD and parent-reported normal or higher intellectual ability
- **TD** (84; 24%) - Typically-developing teens with parent-reported normal or higher intellectual ability

Results (continued)

No statistically significant differences between the groups in demographic characteristics (skewed toward higher SES). Gender ratio within expected range.

Device and Autism App Use

Table 1 shows differences between analysis groups in the use of devices and autism apps.

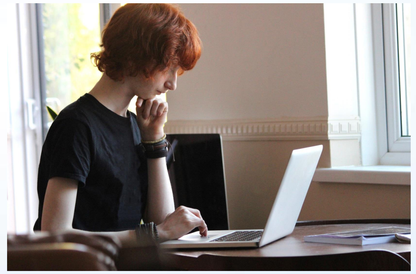

Table 1. Device and App Use

	ASD Low	ASD Normal	TD	Analysis
Autism apps	29% (39)	6% (8)	NA	p < .05*
Dedicated assistive device	19% (26)	6% (8)	NA	p < .05*
Any device use	98% (131)	99% (128)	100% (84)	***
Laptop, desktop, or notebook computer use	83% (109)	96% (75)	96% (81)	p = .001**
Frustration with	28% (31)	32% (39)	11% (9)	p = .002**
Tablet use	70% (92)	57% (73)	63% (53)	More Hispanic/Latino used (p = .016)
Frustration with	30% (28)	19% (14)	4% (2)	p < .001*
Gaming device use	55% (72)	72% (92)	55% (84)	p < .001** Girls: ASD (50%) > TD (24%) (p = .02*) Boys: TD (86%) > ASD (65%) (p = .01*).
Frustration with	32% (23)	27% (25)	11% (5)	p = .008*
Smart phone use	58% (76)	75% (97)	87% (73)	p < .001**
Frustration with	18% (14)	16% (15)	7% (5)	NS
E-reader use	5% (6)	7% (9)	11% (9)	More Hispanic/Latino used (p < .001)
Frustration with	0% (0)	0% (0)	0% (0)	***

*Fisher's Exact, ** Logistic regression controlling for the child's age, gender, race (white/non-white), ethnicity (Hispanic/Non-Hispanic), autism status, intellectual ability (df=6). ***Not able to calculate

Results (continued)

Technology Careers and Training

Table 2 shows differences between analysis groups in the training received and the desire for technology careers.

Table 2. Technology Careers and Training

	ASD Low	ASD Normal	TD	Analysis
Considering career highly-involving computers	23% (31)	54% (69)	20% (17)	p < .001* ASD Normal girls as likely as boys to be considering careers p = 1.0 **
Learning computer repair	5% (7)	17% (22)	7% (6)	p = .004* Only boys in ASD Normal Group were learning computer repair
Learning computer programming	13% (17)	38% (49)	17% (14)	p < .001* More ASD Normal boys (40.0%) than girls (22.2%)
Want more computer training for teen	87% (116)	69% (88)	42% (35)	p < .001*

* Logistic regression controlling for the child's age, gender, fine motor, ethnicity (Hispanic/Non-Hispanic), autism status, intellectual ability (df=6). ** Fisher's Exact

Conclusions

- Device use and intensity of use for teens with ASD is similar to that of TD teens; however, teens with ASD experienced more frustration than their TD peers.
- Parents of teens with ASD indicated that their child's technology training was inadequate. The disparity between training received and desire for a technology-oriented career was most evident for the girls with ASD.
- The majority of the ASD Normal and large number of ASD Low group were considering technology-oriented careers. Given the potential for economic independence – which few young adults with ASD achieve – in this career field, it is important to improve access and quality of technology training for ASD teens.

References

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