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SPECIAL EDUCATION

INTERNET AND AUTISM:

The reflection of communication experiences in
narrative practices

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Abstract.

Background: Perspectives of Internet use among students with ASD are not a clearly investigated field although positive results in mainstream schools are already received. Multiple pieces of research have shown that computer technology facilitates a broader range of educational activities to meet a variety of needs for students with mild learning disorders, and adaptive technology can enable students with severe disabilities to become active learners in the classroom alongside their peers who do not have disabilities.

The aim of this study is to understand and describe representation and perception of online communication by persons with ASD via their postings in blogs and online survey. The role of Internet, the importance of ICT in education and the relation between online and offline communication are in the focus of the study. Although the use of technologies in education and everyday routines is not wide-spread due to high costs and teachers' lack of training in applying modern technologies in the classroom, the results of this study reveal the importance of applying ICT in everyday life for people with autism.

Methodology: A qualitative research design was chosen to reach the purpose of the study. To collect data, ten blogs were analyzed and an online open-ended questionnaire was distributed to the participants.

Main findings: Crucial topics raised in the blogs and analyzed in this study give a new perspective on the needs and interests of people with ASD. Although Internet activity and blogging provides significant benefits to the social life of people with autism, it is not the only means of communication. Blogging is considered as facilitator and an indirect tool for the development of self-esteem, communication, and leadership skills. Internet, and particularly typing, is an inseparable part of active social engagement for people with social difficulties.

Key words: blog, blogging, autism, ASD, social impairments, Internet, e-learning, ICT, pedagogy 2.0.

Abbreviations

AAC Augmentative and Alternative Communication

ABA Applied Behavior Analysis

AS Asperger Syndrome

ASD Autism Spectrum Disorder

ASC Autism Spectrum Condition

CMC Computer-mediated Communication

DSM Diagnostic and Statistical Manual of Mental Disorders

ICT Information and Communications Technology

SNS Social Networking Service

Table of Contents

1. Introduction	1
1.2 Background	1
1.3 ICT use in Education	1
1.4 Research questions	3
1.5 Purpose of the study	4
2. Autism Spectrum Disorder	4
2.1 Global prevalence of autism	4
2.2 Symptoms	6
2.3 Autism and society	8
3. Blogs: New Media	9
4. Theoretical and Methodological Standpoint	12
4.1 Social constructivism paradigm	12
4.3 ICT as a mediator: a discursive psychology approach	13
4.4 “Mental phenomena” in writings	16
4.5 Validity	18
4.6 Reliability	18
4.7 Ethical considerations	18
5. Literature Analysis	19
5.1 The popularization of ICT in education	19
5.2 ICT for individuals with speech and communication impairments	20
5.3 Online communication for individuals with ASD	22
5.4 ICT in education: questioning efficacy and facing the barriers	25
6. Findings	30
6.1 Material and methods	30
6.2 Findings: thematic analysis	42
6.2.1 ASD online: the neurodiversity movement	42
6.2.2 Experiences of bullying and autism	45
6.2.3 Social communication	47
6.2.4 Autism acceptance and self-advocacy	48
6.2.5 Use and impact of ICT tools	55
6.3 Findings: survey results	56
7. Discussion	61
8. Limitations and Directions for Future Research	65
References	67

1. Introduction

1.2 Background

During the past two decades the way people communicate, share, and interact with the world around them has dramatically changed. The increasing availability of computers, and the development of Internet, Web resources, and applications has opened new opportunities for personal, professional, social and entertainment purposes. Web 1.0 dimension has been transformed from a passive environment where the user obtains information into Web 2.0, a participatory space where users are able to share, write, reply and collaborate to create content. “Web 2.0 is a collective term for a series of Web-based technologies that include blogging and microblogging platforms, wikis, mediasharing sites, podcasting, content aggregators, social networks, social bookmarking sites, and other emerging forms of participatory and social media” (Jimoyiannis et al., 2013, p. 248). Timothy O’Reilly (2005) coined the term of Web 2.0 as well as the *architecture of participation* concept that encourages users to add value to the application as they use it. It has made possible for users not only to consume information, but also contribute and co-create it.

People are increasingly involved in using technologies such as media sharing, social networking, video blogging, wikis. Since pedagogy approaches always reflect the environment they are applied in, the integration of technologies in learning and education seems to be an inevitable process. Computers and specific software contribute into learning in both mainstream and special schools. For instance, in Russia Skype is used to cover sometimes great distances between teacher and pupils who are unable to attend the school for various reasons. The majority of students now own at least a phone with the options of blogging, recording, surfing the Internet and instant messaging. The use of Web 2.0 tools in learning slowly but steadily compels attention of researchers, educators and students.

1.3 ICT use in Education

According to Cochrane and Bateman (2009) the key benefits of Information and Communications Technology (ICT) based learning include:

- Exploring innovative teaching and learning practices.
- Enabling the embodiment of ‘authentic learning’ – i.e. facilitating anywhere, anytime, student centered learning.
- Engaging students with the affordances of mobile technologies: connectivity, mobility, geolocation, social networking, personal podcasting and vodcasting, etc.

- Bridging the ‘digital divide’ by providing access to learning contexts and user content creation tools that are affordable and increasingly owned by students.

- Moving from a model of fixed, dedicated general computing to a mobile, wireless computing paradigm that turns any space into a potential learning space.

Using ICT, and Web 2.0 in particular, allows the enhancement of teaching and learning, establishing of social constructivism as the strategy for creating a new participatory educational environment. ICT has the potential to “bridge pedagogically designed learning contexts, facilitate learner generated contexts, and content (both personal and collaborative), while providing personalization and ubiquitous social connectedness, that sets it apart from more traditional learning environments” (Cochrane, 2009, p.3). The use of ICT tools within a social constructivist pedagogy “facilitates what has been termed ‘pedagogy 2.0’. “Pedagogy 2.0 integrates Web tools that support knowledge sharing, peer-to-peer networking, and access to a global audience with socioconstructivist learning approaches to facilitate greater learner autonomy, agency, and personalization” (McLoughlin&Lee, 2008, p.11). Traditional teaching approaches, where a teacher is the only reliable source of learning and information, are being challenged by knowledge dissemination through the Web. The Learning process is no longer centralized in a classroom where students are passive recipients of information. Pedagogy 2.0 requires a shift in the way people are teaching and learning:

In this learning landscape there is a need to rethink models for teaching and learning in order to replace outmoded “closed classroom” models which place emphasis on the delivery of information by an instructor and/or from a textbook rather than being learner-centric. (Mcloughlin and Lee, 2008, p.16).

Some authors explain the need for shift to pedagogy 2.0 with the increasing influence of technologies on our life and an economic demand as well as the benefits this shift might bring to learners. For example, blogs provide reflective environment with the possibility of peer-to-peer interaction, Wikis promote the creation community knowledge in collaboration with other users, and various media applications improve presentation skills (Farkas, 2012).

Cox (2012) emphasizes that e-learning development has resulted in a blurring of the borders between formal and informal educational settings, which is characterized by the following features:

- Higher speed, performance and specification level of modern computers and easier Internet access which now require less resources for functioning;

- Wireless access to the Internet anytime provides networking between schools, students and teachers without geographical boundaries;

- IT gadgets and computers have become more personalized and adapted for needs of a specific individual;
- Networking opportunities have significantly increased providing functions of sharing, giving feedback, and connecting with experts;
- The breakthrough in IT development has not only changed the nature of knowledge representation, but also the production of knowledge, how information is gathered and analyzed and as a result, how people think and learn.

ICT use occurs outside of school even more frequently than inside and plays an important role in young people's development (Cox, 2012). These conditions provide benefits for learners who prefer a virtual learning environment. Moreover, the distinction between e-learning and formal learning becomes vague due to new forms of representation, which can be used by a teacher to support students' homework. Easy and informal access to virtual learning setting, support collaboration, assessment and presentation opportunities open up new horizons for students with special needs (Cox, 2012).

ICT based learning is a developing paradigm driven by enormous changes in the capabilities of modern devices and social software. However, it is worth keeping in mind that ICT is not transformative in itself. If the curriculum is not adapted for utilization of ICT or the teachers' views towards altering their practice are uncompromising, the environment cannot be truly collaborative and participatory. Other barriers preventing teachers from embracing technologies will be discussed in a subsequent section.

1.4 Research questions

As an alternative to the cognitivist approach, where written and spoken language are seen as a reflection of the external world, discursive psychology "treats written and spoken language as constructions of the world oriented towards social action" (Jorgensen, 2002, p. 96). Discursive psychology in terms of qualitative research is aimed at analyzing the production of meaning. The questions explored with discursive psychology are determined by how meanings are produced within the discourses or repertoires that people draw on as resources in order to talk about aspects of the world. Thus, the Internet, blogging and internet communication for people with ASD are considered as part of their repertoires, which construct their lived reality (Potter et al., 1984).

Framing it with the discursive analysis, we focus on their own representation and perception of their online communication via postings in blogs and Facebook and online survey.

Although qualitative research questions may change in the course of the study, they still should be finite, practical, and able to be accomplished (Cohen et al., 2011). In addition to

narrative analysis, an open-ended questionnaire inspired by quantitative survey methodology is used. It is aimed at portraying small-scale factors in order to provide reasons and explanations of blogging and Internet use among individuals with ASD (Bryman, 2012).

Therefore, in terms of the aim of the study I pose the following questions:

1. How do people with ASD present their social life experience via narratives in the blogs?
2. What do they gain from online communication?
3. What impacts, if any, does this have on offline social interactions?

1.5 Purpose of the study

As ICT advances, it affects all the spheres of our life and offers new conditions of living. As far as people with autism still suffer segregation and lack of social skills in real life, they tend to become active Internet users and blogging as a subset provides various opportunities for individuals with social impairments. The purpose of the current study is to investigate how blogging affects their lives and what impact online communication has on interaction in its various forms.

2. Autism Spectrum Disorder

2.1 Global prevalence of autism

Autism firstly appeared as a separate category in the group of pervasive developmental disorders (PDD) in the American Psychiatric Association's Diagnostic and Statistical Manual (DSM) in 1980 where it was called "infantile autism" (DSM-III). In the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), the previous separate subcategories on the autism spectrum, including Asperger syndrome, PDD-NOS, childhood disintegrative disorder and autistic disorder are eliminated: these subcategories are now referred to using the broader term Autism Spectrum Disorder (ASD). Instead of the triad of impairments outlined in DSM-IV-TR, DSM-V (2013) recommends new standardized criteria to help diagnose ASD:

1. Deficits in social cognition and communication, which usually exert through avoiding of eye contact, lack of awareness of personal space, inability to read facial expressions and body language, etc.

2. Restricted interests and repetitive behaviors, which include difficulties in making connections between experiences, generalizations and creative work.

In DSM-V (2013) sensory sensitivity, common for people with ASD, was included as a behavioral symptom unlike in DSM-IV (2004), which did not include atypical sensory processing issues. They might be hyper- or hypo-sensitive to sounds, tastes, smell, touch and light. Previous research (Dawson et al., 2007) has shown the prevalence of mental retardation diagnosis among most individuals with ASD: 62% according to the investigation of 140 American young adults based on a variety of tests (Lounds et al., 2007), 50% - 70% according to nonverbal IQ testing with a cohort of 56,946 children of 9-10 years old living in the UK (Baird et al., 2007), 25% to 64% obtained on one or more intelligence test in a population-based survey among 152,732 Finnish children under 16 years old (Kielinen et al., 2004). However Elsabbagh et al.'s review of studies (2012) demonstrated a wide scatter of data on incidence of intellectual disability in individuals with AD. These figures fluctuate between 15% and 86% of normal IQ among individuals living in the European countries, and from 23% to 63% for individuals with ASD living in the USA, based on standardized measures of IQ.

ASD is now recognized as the most common neurodevelopmental disorder (Geneva Centre for Autism, 2006) and incidents of it are spread throughout the world regardless of racial, ethnic, and social backgrounds. At present, about 3,5 million Americans are estimated to have autism, while in the UK 604 000 people have the disorder, which means that about one hundred children are born with autism every year (Buescher, 2014). The number of children in Sweden suffering autism and the other pervasive impairments (autistic-like conditions) totals approximately 9000 children between the ages of 4 and 17 years (Zander, 2004). Estimates of the prevalence of autism in the World fluctuates between 1% (CDC, 2014) to 3% (Kim et al., 2011). Between 2001 and 2011 ASD prevalence in Sweden increased substantially 3,5 fold from 0,14% to 1.10%, especially in those with average and above-average IQ (Idring et al., 2014). Based on a systematic review of surveys of autistic disorder, Elsabbagh et al. (2012) estimate the median prevalence as 1 person in 62 in 2012 compared to 1 individual in 150 people in 2002 (CDC, 2014). ASD is 5 times more common among boys (1 in 42) than among girls (1 in 189) (CDC, 2014). This dramatic increase can be explained by higher awareness of developmental disorders, a wider range of diagnostic tools, broadening of diagnostic criteria, higher service availability and changes in potential risk factors for ASD (Elsabbagh, 2012; Idring et al., 2014).

2.2 Symptoms

Genetical preconditions play a major role in autism, environmental factors and altered immune functions are considered as significant secondary factors related to autism-like conditions (SFARI, 2014). With current instruments, an autism diagnosis is usually made in the third year of life.

Since high-functioning individuals' abilities can greatly exceed those with severe impairments (low-functioning) their behaviors might occur in various combinations staying unique to each individual (Hardy, 2002). Some children severely affected with autism may never develop oral speech, whilst others experiencing developmental gaps in language acquisition, can still master these skill, albeit at a slower pace (Ochs et al., 2004). However, it is more common for children diagnosed with ASD and developmental coordination disorder to have difficulties in executive cognitive functions which cause social impairments or praxis functions which are related to such abilities as drawing, reading and writing (Kozulin et al., 2010).

HFA and AS [High-functioning autism and Asperger's Syndrome] children appear to have less trouble with certain pragmatic dimensions of language than with others. In many respects, the discourse of these children appear undifferentiated from those unaffected by this disorder...Yet in other ways, the discourse of these articulate children has a distinct quality: it is subtly, but systematically different from unaffected discourse. (Ochs & Solomon, 2004, p. 139).

Both individuals with Autistic and Asperger's Disorder show impaired social interaction and demonstrate limited repertoire of activities and tend to perseverate on their own topics of interests (SFARI, 2014). An action-research study by Åsberg et al. (2011) showed that students with ASD have low task persistence when the task does not match their interests and lose motivation facing academic challenges. They are also less likely to accept mediation from the teacher and benefit from advice (Åsberg et al., 2011).

Autism is characterized by body awkwardness and motor deficits usually in the form of poor control of skilled movements (Ontario Ministry of Education, 2007). Abnormal functioning in social interactions and delay in acquiring words, semantic processing, echolalia and prosody are common traits of autism. Individuals with Asperger's might also suffer difficulties in social and/or occupational functioning as well as have repetitive behavior (hand lapping, spinning around, etc.) and narrow interests (SFARI, 2014). The difference between autism and Asperger's Syndrome relate to a faster language acquisition and more subtle aspects of communication that can be affected in case of Asperger's Disorder. There are usually no cognitive delays or problems with acquisition of age-appropriate learning skills for students with Asperger's (Ontario Ministry of Education, 2007).

However, both disorders are folded into ASD category based on a deficit of social and communication skills. Yet, children with ASD are presumed to show difficulties in sharing emotions and affective experiences with others towards a third referent, which is, known as joint attention (Ochs et al., 2004; Baron-Cohen, 1989). Children with ASD are claimed to display difficulties in emotion recognition and expression especially when it comes to complex social feelings such as embarrassment or pride, and, as a result, give little attention to other people's reactions (Ochs et al., 2004). It has been suggested, that such inappropriate behaviors as tantrums and self-injuries are caused by lack of social-communicative understanding. These features are connected with the fact that individuals with autism are expected to prefer stable and predictable settings as well as organized information and rules to follow (Ploog et al., 2012). Some researchers suggest that these difficulties stem from a "theory-of-mind deficit" related to problems with understanding and predicting others' and own mental states due to cognitive or socio-contextual reasons (Moore et al., 2005). Theory of Mind (ToM) is characterized by an ability of "mindreading" which suggests attributing mental states to self and others in order to explain and predict behavior. Individuals with ASD, on the contrary, suffer "mindblindness" which occludes central coherence (Baron-Cohen, 1995; Frith and Happé, 1994). The tasks used for evaluation individual's ability to read the behavioral patterns of others usually include situations in which participating children are asked to identify false beliefs, pretence, and lies. These situations may involve objects moved from one place to another or scenes where a child is given more information than a protagonist and expected to predict other actor's behavior. However, even the experiments with children without communication deficits demonstrate the different interpretation of the tasks and variation in responses as well as "monological conception of communication" (Mauritzson & Säljö, 2001, p. 229). As for the children with ASD, ToM does not explain the nature of their reactions and efficiency while doing the tasks (Dant, 2015). The evident failure of 80% (16 out of 20) of children with autism in "false belief" test (Baron-Cohen et al., 1985), however, does not explain specific features as restricted interests, excellent rote memory, preoccupation with parts of the objects, and attention to details (Frith and Happé, 1994). As a result, ToM has been strongly criticized for a narrow approach to understanding and explaining autism and avoidance of social context (Leudar & Costall, 2009; Sharrock & Coulter, 2004; Dant, 2015). Within the same task, children can behave differently considering the protagonist's perspective or their own outlook as well as interactional support they get from a teacher or other mediator (Mauritzson & Säljö, 2001).

Moore et al. (2005) propose that ICT and particularly collaborative virtual environment (CVE) can potentially benefit individuals with ASD in three ways: "as an assistive technology,

as an educational technology, and as a means of helping address any theory-of mind impairment” (p. 232).

It might also be useful to hear an autistic blogger who took part in this study to describe autism from the inside:

The truth is, autism itself is easier than the incorrect assumptions by the so-called experts and specialists out there. A locked-in, motor impaired, sensory overwhelmed child cannot escape this on his ownWhat I had was a body that needed to learn how to listen to my brain’s commands. I got answers wrong, not because I didn’t understand concepts, or was too retarded and limited, but because my hand and my body didn’t obey my brain consistently. (Ido, 2012).

2.3 Autism and society

Various diagnostic and therapeutic approaches to autism address the communication and behavioral issues aimed at alleviating the negative social consequences. Examples of these interventions are Speech & Language Therapy, Occupational Therapy, Applied Behavioral Analysis (ABA), Pivotal Response Treatment (PRT), Early Start Denver Model (EADM) etc. Complete cure for autism does not exist now (Kenway, 2009; Bolte, 2014) although about 10 percent of children lose their diagnosis for unknown reasons but still have residual effects such as hyperactivity, anxiety, depression (“Autism Speaks”, 2010). Recovery from autism is usually connected with early interventions, although there are no clear guidelines for identifying which therapy works best for a specific individual, in addition autism is sometimes diagnosed very late due to symptom overlap and lack of agreement on diagnostic criteria (Fayyad et al., 2007). Families, autism activists, and educators promote the development of autism awareness by providing information, targeted programs and advocating for the needs of individuals with ASD which will be demonstrated in data analysis section. As elimination of autism is impossible, at this time it is important to spark positive change by increasing popular awareness and understanding of autism. Kenway (2009) suggests that the very idea of a cure for autism can be harmful for society as far as “a society that seeks to eliminate disability in its midst becomes less humane by significantly narrowing the opportunities for compassion and tolerance” (p. 95). The social and cultural contexts common for different countries determine the public’s attitude towards the terms “diagnosis” and “a person with diagnosis” (Kenway, 2009). Different discourses create the conditions to stigmatize the diagnosis and thus provoke exclusion. In this way, it can be concluded that the problem of autism acceptance goes far beyond medical reasons: “I define disability as the outcome of the interaction between individual and contextual factors” (Shakespeare, 2006, p. 58); “impairment is always already social” (p. 35). The concept of

“updraft” noted by Cook and Smagorinsky (2014) is based on the cultural schemata of Vygotsky and suggests a mediational influence on social updraft of excluded people, which engages them in significant social activities and bring the feeling of involvement.

The axiom that problems of difference are societal rather than individual underlies our approach to considering the education of extranormal or neuroatypical populations, those whose mental makeup stands outside the norm — not in deficit, but in relation to different orientations to the social and natural worlds. (Cook & Smagorinsky, 2014, p. 298).

If the social environment is responsible for disability, then purely medical cures cannot be relevant. Shakespeare (2006) suggests not focusing on and ‘medicalising’ the condition, as this leads to the patronization of disabled people and impedes their potential to control their own futures. As society advances the medical model, which promotes the segregation and ableism of people of disabilities has been replaced with the social model of disability. “The development of social definitions of disability by disabled and non-disabled activists and theorists influenced the critique of the role of education, and special education in particular, in reproducing the exclusion and oppression of disabled people”(Armstrong et al., 2009, p. 27). According to this model, a person’s exclusion is not the consequence of the disability, but the disability is the cause of the society’s organization and attitude towards disability and impairments. Thus, the system should be focused not on the person’s impairment and the way it can fit in to the existing educational system, but rather how the policy can be adapted to various needs and impairments (Armstrong et al., 2009). Instead of finding new ways of excluding or controlling ambivalence in education, the aim is to explore what ambivalence can offer education.

3. Blogs: New Media

According to Blood (2000), the word weblog was first used by the American blogger Jorn Barger in 1997 which was later shortened to blog. In 2010 the number of active blogs reached 126 million. The most popular blogging platforms are Wordpress.com and Blogger.com and by 2015, over 409 million people viewed more than 17.6 billion pages each month (Word press statistics [online]).

The Merriam Webster dictionary defines a blog as “a website that contains an online personal journal with reflections, comments and often hyperlinks provided by the writer” (Blog 2015, Merriam Webster [online]). This definition emphasizes the personal character of the

content, which allows the comparison with a diary and at the same time its affiliation to other dimensions of Internet as a part of a bigger online community. Blog entries can be posted by an individual or a group of authors, provide online commentary, are periodically updated, and presented in reverse chronological order. Blog entries or *posts* refer to any content added by author and can be followed by other readers' comments or posts which create a "socially interactive and community-like" environment (Herring et al., 2005, p. 145). They comprise texts, as well as images, videos and hyperlinks to other online sources, which also contribute into representing blogger's desired identity (Zanette et al., 2013). There are different types of blogs among which are personal blogs used as a diary, organization blogs utilized for business aims, or micro blogs which can provide reduced opportunities for publishing. Blogs especially those written on similar topics (e.g. autism) are tightly connected to each other not only due to personal relationships but also through the tag system. A *tag* is a keyword assigned informally by a post creator which helps find all the posts related to a certain topic throughout the blogosphere.

Different authors define various motives for authors to start their blogs. Herring et al. found in their study that regardless of the purpose of the blog the driving force for blogging was expressing the author's opinion on the topic. 90 percent of the blogs examined were kept by a single person which altogether create an image of blogs as "a vehicle for self-expression and self-empowerment" (Blood, 2002 cited in Herring et al., 2005, p. 143). Leung (2009) based the classification of motives on the four needs which are satisfied by the authors while blogging. Among them are: recognition needs (shaping the identity, gaining support and acknowledgement, creating satisfaction and self-confidence), cognitive needs (gaining new knowledge, improvement of thinking), social needs (sharing emotions and opinions, informing about life events), and entertainment needs (passing the time, entertainment, following trends). Other authors consider documenting one's life, providing commentary and opinions, expressing deeply felt emotions, articulating ideas through writing, and forming and maintaining community forums as stimuli for hosting blogs (Greuling, 2014). Speaking of motivation for reading blogs among those is listed: social need and social interaction to inform family and friends, self-expression, entertainment, passing the time, information, and professional advancement (Greuling, 2014).

It is worth mentioning, that blog itself is considered to be a *genre*. As a form of mass self-expression it might seem as a register but there is a significant difference between those two: "One difference between the two is that genre tends to be associated more with organization of culture and social purposes around language... whereas register is associated with the organization of situation or immediate context" (Lee, 2001, p 6). A genre is characterized as "a

class of communicative events” having “a shared set of communicative purposes” as well as similar structures, stylistic features, content and intended audiences (Swales, 1990 as cited in Herring et al., 2005, p. 143). A genre is usually named and recognized by members of the culture in which it is found, e.g. Internet users in blogosphere. Gurak and Antonijevic (2008) define blogs as a genre and a technology. On the one hand, the format of a blog offers standardized layout, linking and development solutions as any other web site. On the other hand, blog as a genre initiates certain forms of discourse and “shapes the outcome of the text” (p. 61).

The dualistic nature of blog, personal and private at the same time, allows shaping an individual and group identity in front of the audience and thus creates a semiprivate and semipublic space, which provides an easy access to stored human experience as well as create personally meaningful artifacts and share them with others (Zagal, 2011). These personal features of blogs offer wide opportunities for researchers because “they can afford investigators a public conduit to back stage thoughts and feelings of others” (Chenail, 2008, p. 75). Blogs, providing a medium for expressing thoughts, feelings and experiences contribute into a range of web-based sources for conducting qualitative studies or collaborating and sharing with the scientific community.

I also think the blogging philosophy of sharing personal insights and experiences lends itself well to what qualitative researchers do in the conduct of their work. As the trend for qualitative researchers to be more transparent continues to be a best practice, blogs should remain a fitting place for qualitative investigators to share their perspectives, biases, and reflective findings for some time to come. (Chenail, 2008, p. 76)

The research suggests blogging as an encouraging experience for reflections and knowledge transfer into new contexts where it can be applied (Zagal, 2011). By connecting ideas of knowledge transferability with interactions and communication transferability, blogging is worth considering as a technology artifact, which can bring wider learning outcomes in terms of social and cultural practices (Kallinikos, 2002; Zagal, 2011). “Every technology obtains its distinctive status by the specific forms by which it defines *a particular domain*, organizes *knowledge* and *social experience* within such a domain, and embodies them in various sorts of *processes or artifacts*” (Kallinikos, 2002, p. 288, original italics). For instance, the history of computer typing and word processing cannot be reduced to a single set of intentions as only typing or correcting because “the technology as such can never be reduced to a single group of intentions” however influences human agency by “inviting specific courses of action” which include the range of tasks (Kallinikos, 2002, p. 289). By organizing courses of actions in blogging such as writing and reflection, new and deeper human-technology interaction can be encouraged in addition to blogging itself (for instance, blogger with autism describing his/her

experience as an observer at first and then from a position of an advocate; or students blogging about games as game designers or game scholars) (Zagal, 2011; Bennerstedt, 2013).

Blogging is a cultural artifact which embodies a particular symbol system and requires own sort of representational competence. It stimulates goal-directed activity and develops particular set of cognitive skills and the question to what extent blogging facilitates this process is in the center of this study (Greenfield, 1994).

4. Theoretical and Methodological Standpoint

4.1 Social constructivism paradigm

As opposed to the positivist approaches, qualitative approaches are characterized by their reluctance to follow any of the hypothetico-deductive paradigm (Cohen et al., 2011). Still, we cannot reject the fact, that a researcher with his/her background interest, knowledge and personal features influences the process of study. The goal of the study is to provide motivating experience and grounds for future research. The pedagogical design stems from constructivist learning theories, thus Internet is a tool where learners could be active participants in the task and construct their own knowledge, based on experience with others in the world. I also draw on Vygotsky's theory that learning is a social process and has its roots in social interaction. Collaborative activities have been shown to benefit individuals with ASD (Kerr et al., 2002).

With regard to the aims and the research questions, the social constructivism is a paradigm focused on social development and interaction. Instead of seeing culture as a fixed and constraining phenomenon, it can be taken as an emergent reality in a continuous state of construction and reconstruction which is in accordance with the discursive psychology:

The constructivism position cannot be pushed to the extreme: it is necessary to appreciate that culture has a reality that 'persists and antedates the participation of particular people' and shapes their perspectives, but it is not an inert objective reality that possesses only a sense of constraint: it acts as a point or reference but is always in the process of being formed. (Bryman, 2012, p.34).

At the same time, the feature of the qualitative approach is characterized by context-related and context-dependent behavior and, therefore, data. To understand the situation the researcher needs to understand the context, as far as situations affect the behavior and vice versa (Cohen et al., 2011). In this meaning, the conditions described in a blog post are understood as a site where individuals create their own subjective meanings of their experiences through interactions with each other and their surrounding atmosphere (Hartas, 2010). Therefore, the emphasis will be placed on the active involvement of people in reality construction and

perception. It highlights the importance of socio-cultural influence on a child's development and a person's contribution to the collaborative construction of knowledge.

Learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers. Once these two processes are internalized, they become part of the child's independent developmental achievement (Vygotsky, 1978, p. 90).

“Learning in a generic sense is a part of many human activities, such as play, practical activity, interpersonal activity, etc.” (Kozulin, 2002, p. 30). Thus, group work, group discussions, impact of parents, teachers, peers and the community are considered to be a central core in a learning process. However, According to Kozulin (2002), there is a tendency of mediational approach to the learning, which replaces and changes traditional priorities in the theory of learning. “As a result, the “obvious” individualistic identification of the agency of learning was challenged” (p. 8). Among the theories, which contributed most to the development of the mediational approach is the Vygotskian sociocultural theory. The instructor is no longer fully responsible for student achievements but acts as a facilitator creating a positive and encouraging environment (Farkas, 2012). The importance of active engagement in learning was emphasized by Vygotsky (1978).

Thought is not begotten of thought it is engendered by motivation, i.e. by our desires and needs, our interests and emotions. Behind every thought there is an affective-volitional tendency, which holds the answer to the last “why” in the analysis of thinking. (Vygotsky, 1986, p. 252).

Thought develops as a result of internalization of a dialogue through the guided instructions between a child and an adult-expert. “Instruction is good only when it proceeds ahead of development. Then it *awakens and rouses to life* an entire set of functions which are in the stage of maturing, which lie in the zone of proximal development” (Vygotsky, cited in Edwards, 1997: 50). Vygotsky's psychology suggests the idea of individual's mental development as the final product of socio-cultural learning and internalization.

4.3 ICT as a mediator: a discursive psychology approach

As communication and collaboration have moved far beyond the physical boundaries and shifted to Internet dimension, ICT take over a role of a mediator in increasing frequency. Online networks and communities alongside other benefits of computer-mediated communication can be used to avoid recipient's passiveness especially in respect to ASD (Hardy et al., 2002). Although writing and typing constitute a major class of symbolic mediators which can be used advantageously as cognitive tools they still require special conditions for successful utilization,

for example, in case of specific handicaps (Kozulin, 2002). Hence, communication can be considered as form of social action, what is more important, an interactive dialogical work. The dialogic work includes a continual “dialogue” with other works of literature and other authors that ever existed. It not only answers, corrects, or extends a previous work, but transforms, and is continually transformed by the previous experience (Bakhtin, 1981). The purpose of discursive psychology is to elaborate on communication, social action and the construction of the self, the Other, and the way they contribute into a greater meaning. Potter and Wetherell (1987) identify discourse as various kinds of verbal interactions and well as written texts including meanings, explanations, and narratives. “The focus of discursive psychology is the action orientation of talk and writing. For both participants and analysts, the primary issue is the social actions or the interactional work, being done in the discourse” (Edwards & Potter, 1992, p. 2). Language, writing, and other forms of literacy as cultural-psychological aspects provide a mechanism to acquire individual psychological tools: “Literature may serve both as a prototype of the most advanced forms of human psychological life and as a concrete psychological tool that mediates human experiences” (Kozulin, 1993, p. 254). Literary discourse reconstructs the image of the human self and facilitates our understanding of the narrative thinking of the individual: “The study of a literate mind can be taken as a paradigm for the study of other psychological processes” (Kozulin, 1993, p. 255). Symbolic tools, such as signs, symbols or texts mediate and transform the inner psychological processes: perception, memory, attention and motivation. Language, as a reality-constructing practice integrating versions of events, facts and memories is in the strong connection with cognition and thus has been a major concern for cognitive and social psychology. However, since discourse is concerned with the content of talk rather than its grammar or cohesion, the subject matter of this work is implicated in social rather than linguistic organization of the text. “Discourse analysis is particularly concerned with examining discourse for how cognitive issues of knowledge and belief, fact and error, truth and explanation, are dealt with” (Edwards & Potter, 1992, p. 29). In the heart of explanation of social behavior lies the identification of accounts – the actor’s own statements regarding the motives and social meanings of his/her or others’ actions. These accounts, collected and analyzed, might lead to the discovery of the behavior pattern in a specific context of an episode (Edwards, 1997, p. 79).

“It has been argued, from a variety of perspectives, that languages have evolved and developed in the performance of social activities, such that the requirements of social life are what generate the necessity for languages to be grammatical together with the basic conditions under which words, utterances, talk, texts, or whatever other units we look at, may be taken to ‘code experiences’” (Edwards, 1997, p. 84).

Consequently, it is considered that the psychological structures and functions of language are shaped by language social functions. Language is assumed as a medium of social action rather than just a code for thoughts and ideas exchange. As far as Vygotskian concept of development is concerned, human infants can become agentive and language-using (enculturated) persons by being treated as such. Internet communication can thus serve as a medium for developmental and socializing interaction. The computer in this sense becomes a provider and a “resource that can be made available or countered in everyday talk-in-interaction” (Friesen, 2009, p. 133). As individuals with ASD have less trouble with some pragmatic forms of language than with others, the discourse competence of these persons to introduce narrative needs to be taken into account.

It has been argued that a “talented minority” of autistic children are able to “hack” their way into representing others’ minds through the use of alternative conscious strategies which increase social competence. The roots of children’s success in introducing narratives may originate the relative stability of introductory formats. (Solomon, 2004, p. 271).

Linguists and ethnomethodologists highlight indexicality as one of the most challenging factor of socio-cultural perspective-taking (Pierce, 1931; Ochs, 2004). As soon as all utterances and meanings are indexical, their interpretation depends on the social context and situation they occur in. Talk-in-interaction is understood as context-shaped (the meanings are perceived in terms of the current context) as well as context-renewing procedure (a current input into the context constructs the further meaning in a sequence) which altogether complete the sequence of actions realized by its actors. Thus, the actors give sense to assertions and actions in terms of specific and unique discourse relevant to the focus of attention at hand. Since the function of indexicality is reduced due to the slower pace of Internet communication, people with autism face less confusion related to it. Another challenge for people with communication impairments identified with indexicality is that the latter might transmit more than one socio-cultural meaning (Ochs, 2004). The ability to interpret socio-cultural meanings requires rapid guess in a promptly changing conditions which altogether with the abovementioned peculiarities might be quite a demanding task for people with autism:

Thus, children with autism have the double task of trying to fathom not only what psychological dispositions or social acts another member may be indexing but also what activities, identities, and/or institutions, members, may be attempting to put into play at some interactional moment. (Ochs, 2004, p. 169).

Bakhtinian Dialogue (1981) suggests that discourse is always oriented towards “responsiveness” between an expression and a situation, in which it is expressed, between an expression and a larger culture, which it comes from (Bostad, 2004). Discursive Psychology approach focuses on how psychological tools and categories are used by people in everyday settings. Discursive Psychology works in three closely related fields: how people report, explain, and characterize their actions and events (discourse is *situated*); how such emotions as anger, jealousy, beliefs, desires and feelings are transmitted in terms of psychological lexicon and thesaurus (discourse is *action-oriented*); how all these notions of mind are made available and countered “indirectly” through narratives and descriptions (discourse is *constructed*) (Molder&Potter, 2005). A person’s wishes and motives play crucial role since they establish and present the events as factual or true. “Reality” and “mind” are constructed by people in language as part of activity sequences: communication, interaction, argument which involve such intergroup notions as responsibility, blame, preferences etc. The way individuals with ASD construct their reality via descriptive practices where “mind” and “world” interact or contradict each other can provide meaningful output for studying “neurodiverse” communication behavior.

Whereas one can justifiably argue that all words, including mental state avowals, can be meaningful only via their public uses and ratifications, it remains part of such public uses, that people talk as if there is a world of inner experience that can be reliably reported on by the experiencer and set against evidence to the contrary. (Molder&Potter, 2005, p. 252).

4.4 “Mental phenomena” in writings

As well as naturally occurring conversations, diaries, records or blogs might be a rich source of data to analyze in the context of the workings of memory. At the same time, textual materials are of special interest since they are considered as discourses, and thus, “have a life on their own” and reflect the working of mind (Edwards & Potter, 1992, p.21). The analysis of diaries is expected to be one of the most popular themes in studies of autobiographical memories (Edwards, 1997), not only as a form of record-making and remembering in their own right, but also as a source of biographical materials for a later recall of their content. The diary serves as mental reflections on a life as well as an example of cultural and social context at a certain point in time. As Kenneth Gergen remarks, even written self-narratives should be taken as “forms of social accounting or public discourse” (Gergen, cited in Edwards, 1997: 270).

The difference between diaries and biographies is captured in distinction between a chronicle (a sequential record of events) and a history (events worked up into an explanatory

narrative). Blogs in this case combine both of these features making them an attractive topic for researchers who are interested in ecological non-laboratory studies (p. 267). Edwards suggests taking into account three kinds of objects to focus on in any analysis of narratives: 1) the nature of the events narrated; 2) people's perception or understanding of events; and 3) the discourse of such understandings and events (p. 271). Type 1 identified as 'pictures of events' creates a chain of common-sense practices, such as ordinary talks, texts, or classrooms, 'that discourse about events is produces as, and taken to be, a way of telling and finding out about those events, with due caution for lies and errors' (Edwards, 1997, p. 272). Type 2 'pictures of mind' goes beyond the description of the events and corresponds to a psychological portrait of the teller. The person's discourse is then treated from how he or she sees things as 'representatives of groups or cultures, or as individuals' (p. 272). Type 3 'discursive actions' is aimed at the discourse itself:

Whereas we might assume, common-sensically, that events come first, followed by (distorted) understandings of them, followed by (distorted) verbal expressions of those understandings, type 3 inverts that, and treats both understandings and events themselves as participants' concerns – the stuff the talk works up and deals with. (Edwards, 1997, p. 272).

Lynch and Bogen (2005, p. 256) offer a methodological procedure in terms of discursive investigation focused on examination of "mental phenomena". This procedure includes three steps adapted for the aims of the research:

1. "Investigate one or more of the topics associated with cognitive science by locating organized social settings in which these topics feature as perspicuous phenomena" (p. 228). The organized social setting here is a blog owned by a person with autism. The topics associated with cognitive science are communication and writing stimulated by computer and Internet mediation.
2. "Examine how the intelligibility of actions and expressions associated with these phenomena are bound to interactional, pragmatic and political contexts" (p. 228). This can be done by analyzing a specific text using narrative analysis in terms of Internet technologies and discursive psychology.
3. "Treat assessments about what goes on in a speaker's mind [or in the computer] as themselves part of the social interactional field of production" (p. 228). This step is undertaken during the analysis and generalized in the conclusion.

The abovementioned procedure proposes focusing on the phenomenon of language and discourse from the socio-cultural prospective, which meets the aims of the study.

4.5 Validity

Speaking of the validity in qualitative study, one way to determine validity of a discourse analysis is reaching coherence. “Analytical claims are supposed to form a coherent discourse; the presence of aspects of the analysis that are not in line with the discourse analytical account reduces the likelihood that readers will accept the analysis” (Potter and Wetherell 1987, p. 170). As far interpretation of texts involves a deal of subjectivity it depends on the researcher’s reflexivity regarding her interpretation of a discourse. In this case, when it comes to interpretation other member of the community might be involved in order to avoid gross differences in the results.

Another method of determining validity is to improve the fruitfulness of the analysis (Potter and Wetherell 1987, p. 170). Hence, the questionnaire was carried out in order to increase the content of the data. Fruitfulness reveals the explanatory potential of the framework “including the ability to provide new explanations” (p. 171).

Still, long-term involvement, rich data, respondent validation, and triangulation can help increase validity in a future (Cohen et al., 2011, p. 240).

4.6 Reliability

Internet-based questionnaire as well as any other distant method of individual features measurement cannot guarantee correct or unbiased responses due to personal or environmental factors such as distractions, lack of trust to the researcher, stress etc. (Bryman., 2012). However, online questionnaire allows reaching difficult population as it was done in this study and the respondents could complete the survey over time from self-chosen setting that is important for people with disabilities. Due to volunteer participation and observance of confidentiality greater authenticity of responses may be obtained (Cohen et al., 2011).

4.7 Ethical considerations

Ethics is of primary concern when working with people with disabilities. Thus, informed consent was promoted to all participants, including the parents in one case. The information on the aims and objectives of the study was provided in the letter of introduction. All the participants were aware of having the right to quit the study whenever they want to.

It is also worth mentioning, that complete anonymity is almost impossible in Internet research. In the computer-mediated communication, it is very difficult to remove the information about the origin of a computer-generated message. Only blogs which were considered to be blogs on public issues, where the authors expected to have their posts read by any audience were

chosen for the study. There are still issues of reproducing the words of bloggers because they retain copyright so permission for citation was requested.

Confidentiality cannot be fully guaranteed as far as the postings will be available to other readers and Internet users, as they do not require authorized access or permission from the author. Therefore, the participants should be aware of these imperfections of Internet research. However, the answers to the survey questions remained confidential and the results were provided in a summarized manner to prevent confidentiality compromise.

5. Literature Analysis

5.1 The popularization of ICT in education

Although computers have been used in treatment of autism for a long time (Colby, 1973) the rise of ICT and Internet pushed and extended the development of the use of technologies in education, too. New applications for Apple and Android devices, 3D Google glasses, motion sensing devices, virtual reality helmets provide the potential for utility of computers in the treatment of individuals with ASD. Ploog et al. (2012) studied the increased popularity of educational applications for people with autism based on the search of keywords “autism + computer” in PsycINFO database. They report on the increased number of publications between 1970-2011 starting from 0-1 publications per year before 1981 to about 40 in 2010. Such intense interest to this theme among researchers can be explained with popularization of Internet and advanced availability of computers. In accordance with increased interest among researchers there is also a rise of blogs and web requests from parents searching for information about computers and their role in teaching individuals with autism (Ploog et al., 2012).

The UN Convention on the Rights of Persons with Disabilities highlights the importance of ICT use since it provides access to learning for all students with disabilities on an equal basis with other students. The World Summit of the Information Society (WSIS) recommends using ICT on all stages of education, training and human resource development (p.30). “As education leaders implement reform and changes to meet this challenge, the use of accessible ICTs continues to emerge as a key component in enabling students to learn according their individual abilities and learning styles” (UNESCO, 2011, p.5). In 2010 practical guidelines based on policy initiatives and monitoring were developed which include “ICTs in Education for People with Special Needs” and “ICT for Inclusion: Reaching More Students More Effectively”. UNESCO also elaborated practical solutions for teachers “ICT Competency Framework for Teachers” (ICT-CFT) aimed to overcome the barriers related to lack of training and confidence. It includes

six-steps program grasping all the aspects of ICT use in a classroom: understanding ICT in education, curriculum and assessment, pedagogy, ICT, organization and administration, and teacher professional learning (UNESCO, 2011). In terms of the global Education for all initiative, UNESCO considers ICT as a significant tool aimed at reaching the main goal of providing equal and discrimination-free learning opportunities for everyone:

Technology plays a vital role in enabling personalised learning by enabling flexible curriculum development and assisting students with disabilities to participate through the use of accessible ICTs as equals in the learning experience. It is important that the use of technology for learning does not in any way contribute to replicating any form of stigmatisation and labelling that may be found elsewhere in society. (UNESCO, 2011, p. 13).

The recommendations for ICT implementation are based on numerous research results and coincide with the conclusions made by authors studying the theme (Baran, 2010; Barkhuus, 20120; Beggs, 2000; Bosch, 2009; Campigotto, 2013; Cobb, 2002; Cochrane, 2010). Those include the importance of maximizing the use of computers, tablets, mobile phones etc. in those classrooms where they are already in use. Students need to be encouraged to adapt the technologies to their preferences and interests. Negative attitudes towards ICT should be reduced by collaboration between teachers, school administration and policy makers, which is vital for students with autism who find relieving to be allowed to type instead of writing or speaking on exam, for example (Hillary, 2014).

5.2 ICT for individuals with speech and communication impairments

Speaking of inclusion as a most desired outcome of learning for people with disabilities, it was shown that technologies help improve the performance of students with special needs and succeed in the mainstream school (Hasselbring, 2000; Murray, 2004). The software and tools such as the Internet, communication applications, and multimedia presentation appliances allow to practice and work on communication skills, which is significant for people with speech or language impairments. Kozulin (2002) states, that under certain circumstances, normative acquisition of psychological tools is reasonable, for example in case when specific impairments complicate or make it impossible for a student to acquire particular cognitive tools. That is why the author proposed to consider the learning process in two contexts. The first one refers to formal education and regular development, which considers acquisition of psychological tools as an essential part of learning that sometimes appears unobtainable for students with some complex handicaps. The second approach allows the application of “special cognitive

intervention programs” which make it possible to obtain psychological tools for students who could not do that due to their impairment. In this case, technologies provide a positive prospective on correcting and improving of communication difficulties and support in obtaining speech and language tools for students having language disorders (Green, 2004).

For instance, word processing as a cognitive tool includes an ability to revise text, produce clear and readable content as well as editing and correcting that is important for both writing and speaking. *Word processing* software releases users from the necessity of editing and allows them to spend more time on the content and feeling a sense of authorship. “Word processing is also especially helpful for those students who struggle with delays in fine motor skills that impair their ability to write legibly” (Hasselbring, 2000, p. 107). Word prediction software is another example of computer-based application that can be very helpful for students with communication barriers (p. 107). *Word prediction* function suggests a list of words starting from one or several letters a student presses on the keyboard. As far as the expected word appears, the student can easily select it avoiding grammar uncertainty and frustration related to this. Since word prediction software allows students with mild learning, motor and communication impairments to use longer words and words reflecting their thinking more successfully it levels them in a regular classroom setting where they are able to compete academically with their peers (p. 107). Speaking of *communication* function which all modern devices with Internet access can provide, Mueller (1992) provides an example of hospitalized students with emotional disabilities interacting with other students in special education classrooms via email which enabled them to feel more willing to communicate since their disability disappeared in online setting as well as their grammatical skills improved. Other specialized devices created specifically for people with speech and communication impairments – augmentative and alternative communication (AAC) devices – have a longer history of use in special education classroom than mobile phones or computers. Although many of them can only provide a mean of communication, others can be a component of a more complex learning tool in one cluster with a computer (Hasselbring, 2000). Thus, AAC can be an irreplaceable tool of communication and learning for students with speech and language disorders. For T.G. Murray (2004), a speech-language pathologist who usually found traditional therapy approach motivating and exciting realized that after some period it became tedious and even caused regress for students. In her case search for new motivation, progress and methods were the driving force for the author to integrate technologies in the practice. The results of the research demonstrated that 100% of students progressed towards mastery of their speech skills from the first day of a technological intervention. The students showed no signs of frustration or disengagement while doing tasks the program offered them. However, the unfriendly interface,

unclear instructions or unwillingness to use the ICT as well as other barriers can bring to naught the efforts to lessen the achievement gap (Campigotto, 2013; Beggs, 2000; Becta, 2004). Thus, simplicity of operation together with the proper mediation and support from the teacher seem as key components for successful integration of ICT.

Another feature of ICT and Internet tools is an ability to receive a *feedback* through a computer interface, which might be used to encourage children with ASD to produce sounds and speak. The study by Hailpern (2008) which included five children with “low-functioning” autism resulted in increased frequency of spontaneous vocalizations due to auditory or visual feedbacks appearing on the screen. The program used in the study was set up so that feedback was demonstrated visually or audibly. In one task, for instance, a graphic-matching exercise was given where children learned to match their vocal duration to the path of a visual display and their volume to the display’s width. Hailpern suggested that children perceive ICT tools as less anxiety-provoking factors and complete the task with less distress than in human-to-human interaction. The author concluded that any type of feedback might be helpful for enhancing speech in individuals with ASD since computer stimulates less anxious behavior than in human-to-human interaction. The Internet and computers in general are organized to give feedback to users that might be one of explanations why individuals with ASD have such good skills in operating computers.

Since individuals with ASD experience difficulties with face processing and emotion comprehension (Ploog et al., 2013) some researchers successfully used ICT to improve *recognition of emotions* (Golan et al., 2010, Silver & Oakes, 2001). Facial and emotion recognition skills were significantly improved as well as analysis of emotional content in visual representations and social situations simulator.

5.3 Online communication for individuals with ASD

The use of online communication as a complement to the usual process of communication is a novel experience for both the researchers and the students with autism. ICT provides enormous room for educators and students to shape and manage the learning environment and conditions. Computers regulate such social interactions as turn taking, sharing and developing awareness of “another” (Hardy et al., 2002). Not only can computer provide a wide range of programs and tools for students with mild learning disabilities but also might allow those with severe impairments to become active participants of learning alongside their peers without disabilities (Hasselbring, 2000).

Speaking of the benefits online communication might bring into the education environment, Selwyn mentioned “conversational, collaborative and communal qualities of social

networking services”; that Facebook provides “support for interaction between learners facing the common dilemma of negotiating their studies; and that social networking can become learning networking, as individual students attach themselves to other students, and teachers, and gain insights outside of more traditional instructional settings” (2009, p.158). What is more important, social networking service (SNS) and blogs contribute into building relations and friending in real-life setting, which is more important for the people with ASD. Baran (2010, p. 148) concluded, “The student–student dimension may be more important than the student–content and student–teacher dimensions”. Second, she found that “students may tend to be more interested in the social than the teaching dimensions of tools such as Facebook ... [and] the higher degree of social presence may well be one of the greatest contributions of such tools.” Third, it was important to plan for the “tensions that may arise between the formal and the informal uses of social networking tools in education”. Still, conflict is a part of everyday communication, so the way they are solved in the Internet determined conditions is also of a researcher’s interest.

Speaking of the potential risks, we need to mention the risk the devices might bring as they may cause further isolation of autistic children, who already struggle to socialize. As Bridget Taylor states, a researcher and a founder of a private school for autistic children, autistic children can become too focused on the devices. Therefore, to avoid this risk the ICT tools must promote interaction but not keep the children concentrated only on their own actions.¹ On the one hand, SNS and blogs allow practicing “real” conversations in safe scenarios. It creates the opportunity for people with autism to learn by making mistakes without real-life consequences (Moore, 2005). On the other hand, it might be argued that the use of the computer for education may exacerbate any social difficulty of users with autism, causing them to rely on, and perhaps become obsessed with, the computer, and thus engage in less “real” social interaction (Parsons & Mitchell, 2002; Parsons et al., 2000). However, other studies prove the device as “a successful platform to bridge the gap between students and, in many respects, easy enough to use that students felt comfortable explaining it to one another”, more than that, the application proved to be a tool providing students with autonomy over their learning (Campigotto, 2013, p.83). More people with autism are considered to have a natural affinity for computers and controlled environment and that they may benefit from the opportunity to repeat exercises or receive individualized training (Moore, 2005). As it was stressed by Piaget (1970), Bruner (1962) and Vygotsky (1978), the active engagement in the learning process is vital for skills development.

¹http://www.thestar.com/news/investigations/2012/11/12/the_autism_project_ipads_speak_for_nonverbal_autistic_kids.html Reference: Kristin Rushowy, “The Autism Project: iPads ‘speak’ for non-verbal, autistic kids”, 2012.

The interactive potential of ICT allows passive participant more opportunities for knowledge and communication reception.

Blogs and especially SNS due to turn taking and sharing functions, as well as flexibility allow their wider appliance in education (Barkhuus, 2010; Bosch, 2009).

However, if one considers the large numbers of students on Facebook often actively participating in discussions and groups, it cannot be ignored as a potential educational tool. Compared to university course sites, e.g. Vula at UCT [University of Cape Town], students are more engaged with Facebook, and perhaps educators need to explore ways to tap into an already popular network. After all, these methods of community building (online social networks) are the ways in which students today are meeting ... Facebook may be just the tool we need to stimulate collaborative student-led learning. (Bosch, 2009, p. 190).

Besides, Mazer et al. (2007) concluded, that carefully managed self-disclosure thorough a teacher's profile might improve the student-teacher relationships in class during the whole learning process. Such use would remind students, that being a teacher is not the only role he or she possesses.

Concerning the strengths of the ICT implementation, the previous studies give grounds for optimism in the role of ICT as an assistive technology to communicate more fruitfully with other people (Moore, 1998). Use of electronic devices enables young people to network with each other as autistic students may suffer social exclusion and find it difficult to make friends (Moore, 2005). Parsons (2000) suggests, that ICT tools allow "simpler" and "less threatening" communication than face-to-face equivalent that avoids many of its potential risks and misunderstandings. The author concludes, "ICT gives users control over their interactions, and that this may increase the confidence of people who otherwise may feel out of control in social situations" (p. 437). These benefits may be the source of interesting and meaningful interactions. ICT simplifies direct communications, and, although computer-based, offer and unstructured context where users are able to make their own choices while collaborating with others (Cobb, 2002). Besides, computer mediated communication tends to be slower than communication in a general sense that provides users with autism with extra time to analyze the situation and find a solution to it. Another option it offers is the use of representation of emotions via avatars and its facial expressions. It is very useful as far as emotions are better transmitted by facial expressions than by words (Moore, 2005). Thus, technologies can potentially assist people with autism in their difficulties to come together with other people and to discuss common interests and therefore, reduce the sense of isolation/exclusion. The use of ICT may influence on students'

social skills improvement contributing to social interaction, collective problem solving and the creation of the community (Campigotto, 2013).

5.4 ICT in education: questioning efficacy and facing the barriers

However, there are difficulties with ICT implementation some authors point out (Hasselbring, 2000; Becta 2004; Bingimlas, 2009; Beggs, 2000) and some of them even question the potential benefits of it. For example, the early articles by Clark (1983, 1985) state that the technologies are “mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition” (1983, p. 445). Hasselbring also states that only collaborative efforts can bring benefits out of computer-mediated communication:

Yet improved access and delivery systems do not necessarily bring improved instruction. To the contrary, improved learning is dependent upon the quality of instruction and not on the medium through which it is delivered. Communication technologies become a powerful tool for learning only if they offer students opportunities to gather a wide variety of resources and information and then to exchange their thoughts and ideas with others in collaborative learning environments, networked through the Internet. (2000, p. 107).

The insufficiency of symbolic mediation by itself was also highlighted by Kozulin (1999), who, pointed out the necessity of correspondence between the context of learning and the field of its application in the discourse. “As the role of material tools is to master the objects and processes of external world, the role of symbolic psychological tools is to master the quasi-natural psychological processes of the learners” (Kozulin, 1999, p. 79). The current disappointment in computer-based learning stems from the lack of motivation, desires, needs, and emotions produced by the actor in cooperation with the qualified mentor in the ‘zone of proximal development’ (Kozulin, 1999, 2002). Thus, the major point is the interplay between symbolic and human aspects of interaction since symbolic systems might remain inapplicable unless they are properly mediated.

The other argument Clark appeals to is the replaceability of ICT since “if a treatment can be replaced by another treatment with similar results, the cause of the results is in some shared (and uncontrolled) properties of both treatments” (1994, p. 22), which cannot be replaced for everyone equitably. Firstly, the rise of information technology and its expansion throughout the world cannot be refused or ignored as well as its cultural and social impacts. Secondly, there are more researchers who proved the ICT technologies to be useful and inspiring for people with

autism (Fernandez-Lopez, 2013; Hardy, 2002; Hasselbring, 2000; Herskowitz, 2000; Murray, 1997) as a necessary mediator which cannot be replaced by any other tool so far. This is of current interest especially in view of the development of ICT and particularly Internet that play the main role in the technological revolution where mobile and other portable devices have been an increasing part in this process over the past decade.

Ploog et al. (2012) in the analysis of relevant studies raises the question of higher efficacy of ICT use compared to traditional teaching and training methods for individuals with ASD. The authors report, that the published researches are not reliable enough to prove the obvious advantage of ICT tools over non-ICT approaches. They base their conclusion on the lack of control groups and the exploratory nature of most of the studies. However, they admit that this is a normal situation for new science and methods, which is usually followed up with more accurate data after first descriptive works. In addition to that, Ploog et al. state that in some circumstances ICT may be preferred over traditional approaches because “it may be easier to implement treatments with higher precision and less variability, thus ensuring higher treatment fidelity” (2012, p. 303). Some of the studies described by Ploog et al. demonstrated efficacy of ICT in improvement of independent responding (Kodak et al., 2011), language and social deficits (Whalen et al., 2010, Coleman-Martin et al., 2005). Reading skills as a part of speech development were also improved since the children with ASD could recognize new words and were encouraged to spend more time reading (Yaw et al., 2011). ICT also allows to reach the audience at large distances because of the savings due to “automation, resulting in a reduced demand for highly trained, thus costly, service-providing professionals and allowing for broader dissemination of treatment, training, and education” (Ploog et al., 2012, p. 303).

There are, however, opponents to the wider use of ICT among teachers as well (Osborne & Hennessy, 2003). Their unwillingness can be explained by various barriers, which have been divided into two groups: extrinsic and intrinsic (Bingimlas, 2009). Some researchers refer the lack of time, resources and training to extrinsic barriers whilst beliefs, experiences and resistance are related to intrinsic type of barriers (2009, p. 237). Whereas the extrinsic barriers are usually stem from the organization structure, the intrinsic barriers pertain to teachers and other individuals involved in the learning process. Among the teacher-level barriers the lack of teacher confidence and competence as well as negative attitudes and resistance to change are identified as most challenging. Beggs (2000) stated that teacher’s ‘fear of failure’ caused a lack of confidence and anxiety about using ICT in a classroom: “many teachers who do not consider themselves to be well skilled in using ICT feel anxious about using it in front of a class of children who perhaps know more than they do” (Becta, 2004, p.7).

Watson (1993) in the Impact Report, a project, financed by the UK government to study the impact of ICT on children’s achievements at school found that the most essential role in collaboration between a child and a computer plays the teacher. These results were later confirmed in studies conducted with students with ASD (Coleman-Martin et al., 2005). Based on Project’s findings and other studies a range of positive and negative factors influencing the teachers’ willing to use ICT was identified (Table 1, Cox et al., 1999).

Positive factors	Negative factors
regular use and experience of ICT outside the classroom	difficulties in using software/hardware
ownership of a computer	need more technical support
confidence in using ICT	not enough time to use ICT
easy to control the class	is too expensive to use regularly
easy to think of new lesson ideas	insufficient access to the resources
can get help and advice from colleagues	restricts the content of the lessons

Table 1. Positive and negative aspects for ICT use among teachers

According to Cox (1999) teacher’s motivation and attitudes are major enabling factors influencing utilization of ICT in a classroom. “Teachers' attitudes to many of these factors will depend upon how easy they perceive using ICT to be on a personal level as well as for teaching in the classroom” (Cox et al., 1999). The factors, which were found to be most important to these teachers in their teaching, were making the lessons more interesting, easier, more fun for them and their pupils, more diverse, more motivating for the pupils and more enjoyable. Other more personal factors were improving presentation of materials, allowing greater access to computers for personal use, giving more power to the teacher in the school, giving the teacher more prestige, making the teachers' administration more efficient and providing professional support through the Internet (Cox et al., 1999). Mumtaz concluded that those teachers, who are already experienced to use ICT and computers, consider their usefulness and are more likely to extend it to their teaching practice (2000). Among the factors that influence teachers’ decisions to utilize ICT but lie outside the realm of their control are the requirements of national curriculum, school policies on using ICT, opinions of colleagues, and pressure from parents and students (Cox, 2007).

The report on the use of ICT in European schools (Korte & Hüsing, 2007) claims that lack of skills is a serious restraining factor preventing teachers from use of ICT. The results were based on the survey carried out in 27 European countries among the Head Teachers and Classroom Teachers. Although the use of computers in European schools has reached almost

100%, the accessibility of broadband Internet still varies from country to country. For example, 90% of schools in the Nordic countries, the Netherlands, Estonia and Malta have broadband Internet access compared to 13% of the schools in Greece and between 28% and 40% of schools in Poland, Lithuania and Slovakia. However, teachers in Sweden, Denmark, Finland and the Netherlands do not practice using ICT in the classroom so often - only about 10% of teachers in these countries use computers or Internet in 50% of their lessons (Korte & Hüsing, 2007). This might account for the “ordinary” attitude among teachers and students towards technologies and their role in learning thus there is no need to put an emphasis on it at school. However, the teachers who are not trained enough to use ICT adhere to the opinion that computers in a classroom do not bring any benefits, or, at least not clear ones. In general, only a fifth of European teachers believe that using computers in class does not have significant learning benefits for pupils. Moreover, there is still a tendency to increase the frequency of ICT use in most European schools as well as the quantity of trained educators for successful implementation of technologies (Korte & Hüsing, 2007).

Among school-barrier levels, there is a lack of time, lack of effective training, lack of accessibility and insufficient technical support (Bingimlas, 2009). It was also shown that teachers although qualified enough to use ICT and Internet still do not prefer to do so due to the lack of time (Becta, 2004). Besides the computer skills, it is also essential to provide pedagogical training to make it possible for the teachers to apply technologies to learning process (Becta, 2004). Moreover, if there are certain tools to be integrated in a classroom teacher training in specific ICT skills is also significant. Lack of access to computers or Internet is another considerable barrier that prevents teachers from using technologies in lessons. It can be related to the factors far beyond the school level, such as “poor organization of resources, poor quality hardware, inappropriate software, or lack of personal access for teachers” (Bingimlas, 2009, p. 240). Lack of technical support is another challenge for schools and teachers since technical breakdown might discourage them from using ICT due to the inconveniences caused by the technical failure in a classroom (Becta, 2004).

Previous studies are focused on interventions and mediation aimed at providing support and new models of behavior for persons with autism and ADHD (Ahlström and Wentz, 2015). However, there are not so many studies discovering reflections and social experiences directly from the individuals. One of these studies was conducted by Ahlström and Wentz (2015) and described aspects of everyday life based on analysis of Internet-based chat-logs. Twelve young persons with ASD and ADHD participated in internet-based and coaching (IBSC) program, which provided new opportunities for professionals to pay attention to this population’s problems. The problem of making friends and connections is quite serious for individuals on the

autistic spectrum and previous studies showed that, they do not fully understand the meaning of loneliness and such qualities as closeness and reciprocity required for making friendships (Bauminger and Kasari, 2000). Nonetheless, these persons still can succeed in building relationships especially in pre-organized settings and activities (Orsmond et al., 2004). The IBSC model was planned as a home-based intervention program consisting of twice-weekly chat sessions with a personal coach over the Internet and three face-to-face meetings. The study showed personal feelings and emotions the participants come through during their everyday activities and communication. They described their thoughts as inability to realize why they felt or acted the way they did which sometimes interfered with solving pragmatic problems such as being at school in time. At the same time, the participants told about their desire to be in romantic and friendly relations which, however they find complicated because of the difficulties in speaking about their disability and uncertainty about other person's reactions. Long-term friendship seems quite difficult to maintain for them since the interests might change and this requires additional efforts to stay open to another person. Some of the participants needed friends to help them develop personal features and maturity. Being the "clown" was also one of the ways to interact since it allowed them to avoid situations where they could hurt other people's feelings. In those situations when they succeeded in academic performance or social behavior it was taken as an achievement in themselves. While talking in a chat the participants revealed their insight into meaning of ADHD and ASD as well as ability for self-awareness. However, failure to realize and reflect on other people's feelings is still a cornerstone of necessary therapy and support for these individuals. Ahlström and Wentz (2015) state, that the IBSC model allows improving the social competence and "facilitate contact between the young persons with ADHD and ASD and the medical and healthcare services" (p. 123).

Indeed, ICT offers new approaches to teaching and learning in those circumstance where tradition methods are not effective enough or do not fit the individual with specific needs. There is still no clear evidence guaranteeing absolute prevalence of ICT use over traditional training approach. However, those studies, which include control groups, demonstrate, that some forms of ICT can be efficient or, at least, provide convincing evidence of beneficial side effects for individuals with ASD (e.g., higher motivation, positive feedback etc.). The computer setting resulted in a faster acquisition of social behaviors than in vivo conditions as well as increased overall interest and motivation, which proved that teaching information on a screen can be a viable approach. It is worth mentioning that efficacy of ICT tools depends on the proper design and user-friendly interface (Ploog et al., 2012). Poorly designed applications, not specifically adapted for individuals with ASD might take to limited human-to-human interaction and further isolation. Since there is not enough evidence of the ways how various ICT-curricular plans and

particular ICT tools affect specific groups of learners as well as major problems with students' assessment it might be difficult to conclude repeatable outcome for all learners (Cox, 2007). Another direction for deeper understanding what ICT can provide for learners with ASD is conducting well-controlled, large-scale studies with large samples and control groups. With continued accurate scientific research, ICT will likely play a significant role in treatment and improvement quality of life for people with ASD.

To conclude, several studies have identified a range of school-related and independent barriers that prevent and slow down the process of ICT implementation in a classroom. Among those are: insufficient numbers of computers, copies of software, insufficient Internet access; teachers' attitudes towards ICT and lack of confidence caused by poor technical support in schools and lack of specialized training; unwillingness to change the situation which stem from poor administrative support, scheduling difficulties and low school funding. Although funding and administrative reforms are required to overcome these barriers this is still an unavoidable measure since ICT stepped into all spheres of life and has potential "to act as an equalizer by freeing many students from their disability" (Hasselbring, 2000, p.118). Therefore, all the participants involved in policymaking decisions regarding learning opportunities and equity of access to education need to be familiar with benefits and advantages specific ICT tools and ICT-based educational programs might bring for students with disabilities.

6. Findings

6.1 Material and methods

The study consists of two parts, which include narrative analysis of the blogs and an online survey. The online survey consisted of 22 open- and close-ended questions and the participants were encouraged to answer fully and leave any notes they find relevant. The questions were divided into thematic groups: a) general information b) blogging experience c) role of Internet communication (see Appendix). The use of the survey made it possible to explore perceptions about benefits and constraints of blogging, which are not mentioned in the writings. As a result, some participants supported further correspondence and were ready to share the ideas on the topic of the study beyond the survey.

While selecting the participants of the study the criteria of diagnosis, age, and blogging activity were taken into consideration. Age and gender criteria were not specified during the selection process. The blogging activity factor was defined by the frequency of postings, the duration of the blog (at least one year) and the general content of the blog (reposts or author's writings).

To find participants for the study an announcement was published in autistic online communities and Facebook group as well as through few participants who posted information about the study in the blog. An informational letter was sent out to 35 young adult bloggers with autism or Asperger's Syndrome (identified from participants' own statements), living throughout the world asking them if they were willing to participate in the study. As a result, ten persons expressed their willingness to participate, whilst the other 25 people approached did not reply or discontinued communication after receiving the survey. Those who joined the study were very helpful and ready to answer the survey questions as well as greatly appreciated the idea to share experiences with the research community.

As a result, the study includes the blog analysis and answers from ten individuals. Email survey as an available alternative to interviewing can be employed in relation to "smaller, more homogeneous online user groups" (Bryman, 2012, p. 670). All the participants demonstrated their willingness to be cited and mentioned by pseudonyms however, the survey answers will remain anonymous so that the authors could be recognized by their blogs but not personal information.

The criteria for inclusion were that the weblog author is identified as a person diagnosed with autism, and the blog reflected the author's personal experiences, rather than social or political commentary. The selected blogs were constructed like personal diaries and generally appeared in reverse-chronological order and were dated or titled by entry. Nine blogs of ten are openly posted and publicly available on the Internet and the owner of the one which requires an access gave a permission for citation of the content.

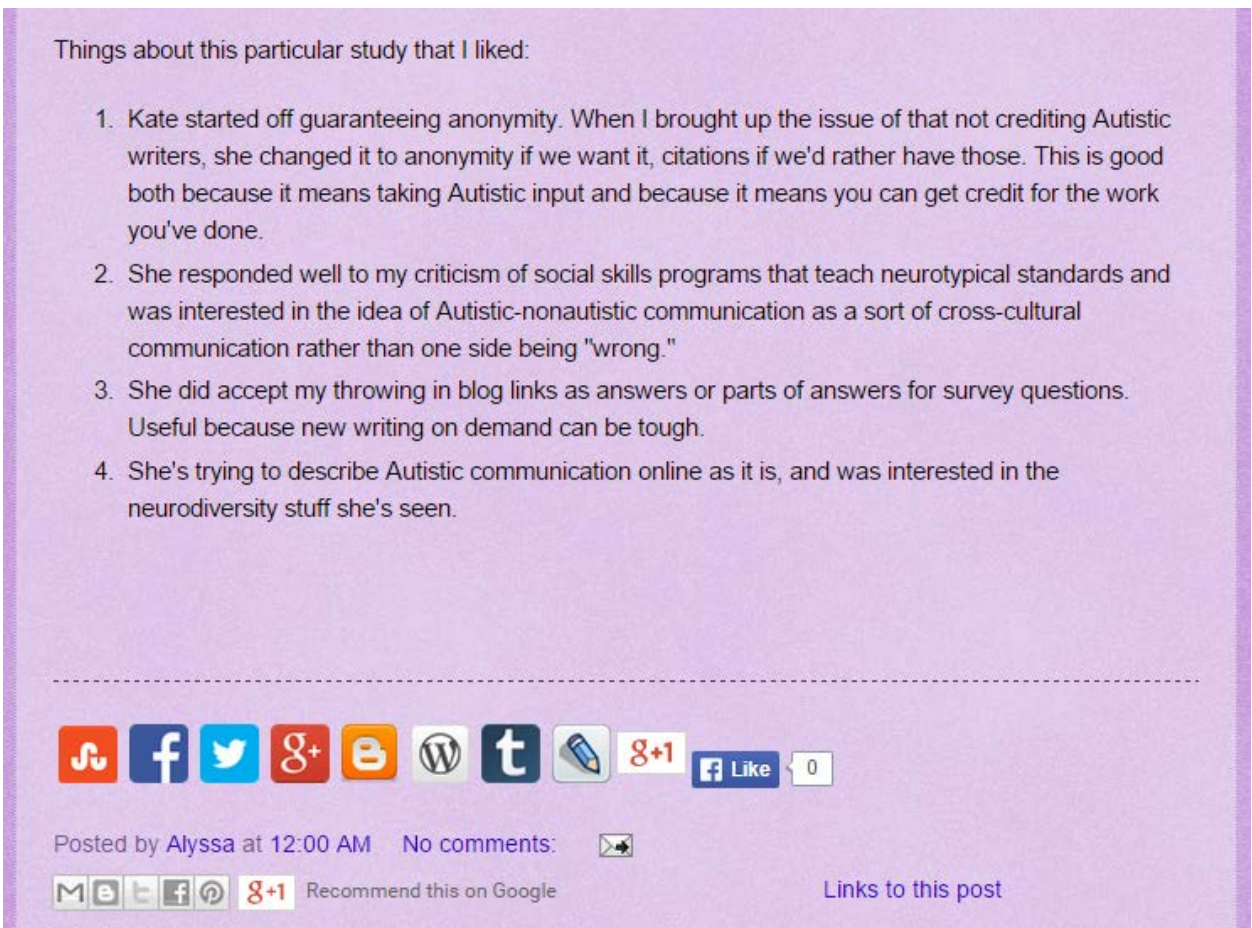


Figure 1. Blog post by Alyssa Hillary about this study and her feedback on it. (YesThatToo blog,2014)

A thematic analysis was conducted, and several themes related to autism were identified and categorized based on following themes: ASD online: the Neurodiversity Movement, bullying and autism, communication, autism acceptance and self-advocacy, use and impact of ICT tools. The volume of all blog writings totals 2911 pages (1,218,741 words) which were read, reflected on and analyzed with the use of Text Analysis Portal for Research (TAPoR). Mertens citing Gubrium and Holstein (2009) notes that a distinguishable feature of narrative analysis is that it focuses on literary devices such as “topics, plots, themes, beginnings, middles, ends, and other border features that are assumed to be the defining characteristics of stories” (2010, p. 427). TAPoR made it possible to mine postings for relevant subject concepts and tags. As far as narratives may relate to long periods of time (an entire life story) or to a specific event (Bryman, 2012), this study will be focused on both extended periods and particular events within the narrative. Blogs as texts might be analyzed as *sequentially coherent* and *socially interested constructions* as well as mental representation of significant life events (Edwards & Potter, 1992, p. 31).

Table 2 gives a brief overview of the bloggers who took part in the study. The general information includes country of origin, gender, age, the current purpose of the blog from the author's point of view.

<i>Name</i>	<i>Age</i>	<i>Gender</i>	<i>Country</i>	<i>The purpose of the blog</i>
Nikita	22	M	Russia	Helping parents of «autistic» children, communication
Alyssa	22	F	USA	Self-Advocacy
Ido	18	M	USA	Self-Expression
Ben	25	M	USA	Buddhist perspective on autism
Lydia	21	F	USA	Self-Advocacy
E.	25	F	USA	Helping parents of «autistic» children, self-expression
Daniel	20	M	USA	Self-Promotion
Lei	39	F	USA	Self-Advocacy, helping parents of «autistic» children
Cynthia	46	F	USA	Sharing information
Karolina	21	F	Ukraine	Self-Expression

Table 2. A brief overview of the participants

There are six female and four male participants and 80 percent come from the USA, while 20 percent are from the Russian speaking countries. The average age of the participants is 26 years old.

Nikita is 22 year old and lives in Moscow, Russia where he had received a distance education in a mainstream school. The main difference from the rest of the participants is that he used his Facebook account as a diary and a blog. Since Nikita's Facebook account serves as "an online personal journal with reflections, comments and often hyperlinks provided by the writer" (Blog 2015, Merriam Webster [online]) it will be considered and analyzed as any other blog in this study. The aim of the account in 2011 was to get reminders about friends' and relatives' birthdays and to be able to congratulate them online. Later he felt enthusiastic about writing his own book on "autistic" experiences that drew attention of Internet users. In order to be crowdfunded he and his mother started giving interviews for Internet magazines. Nikita found it necessary to use his Facebook account as a platform for sharing his texts. Now he does not spend much time on Internet, his Facebook page he understands as a "job" which takes about 3 hours per day. Besides social networks, he is also interested in television and radio history and

music. The readers are mostly parents of children with autism, who have questions regarding upbringing and understanding their child. Most of Nikita's posts are dedicated to explanations of "autistic" way of thinking and recommendations for the parents as well as his childhood experiences. Sometimes the author takes part in discussions in the tread, but usually he adheres to putting "likes" under the readers' comments. Throughout the blog, Nikita used most frequently such words as "mama"/"Mama" (57 times) and "Moscow" (35 times). In Nikita's case, it might be concluded that the peak of mentioning the word "Mama" is related to description of his childhood memories.

Alyssa is a blogger and a writer with a rich history, which includes articles and chapters on neurodiversity, Chinese language, translations and social events related to autism. Alyssa is 22 and she originally comes from the USA but studies in China for an academic year; she also obtains a distance job. Alyssa's blog was launched in 2012 and includes 630 posts with the audience of about 1200 readers every day. She is a mathematics student learning Chinese who is also interested in computer games and sewing, which helps her overcome her touch sensitivities. These topics can be traced in her blog posts but her focus in writing is the attitude of the society (and within the disability communities) to the problems of autists.

I was reading about things that were happening in the world (especially stuff that was terrible about autism) and I wanted to respond...so I made a blog and those responses go there now. It helped me figure out that I work through my thoughts better by writing about them than by talking about them, which was really useful (A. Hillary, personal communication, May 18, 2014).

Her posts on labeling (tags "Autism", "Trigger Warning", "Neurodiversity") receive more views than any other posts and those are mostly observed by the readers with autism. She published 15 posts ("Don't call me a person with Autism", "Laughing about Language", "Autism parents and people with autism", etc.) explaining and proving importance of identity-first language. What she insists on is that the education and social policy should not be about reversing the symptoms but providing the «autistic» individuals with the necessary tools and skills and non-"autistic" individuals to accept «autistic» differences. Although Alyssa considers herself as a person who is able to overcome some difficulties associated with her condition (verbal communication, employment), however, she still admits to be a disabled person due to the lack of social acceptance and inappropriate conditions for autists. From the text analysis the words used most often are "people" (2092 times), "autism" (1658 times), "autistic" (1721 times). As far as Alyssa and other bloggers in this study prefer to call themselves "autists", or "autistic

person”, in most cases she used these words coming together in one sentence. However, it can be observed that during 2013 the word “people” was used independently. This might be explained with her relocation to China and the increased number of posts about the local experiences (104 posts in 2013 against 20 posts in 2012). At the same period of time the quantity of posts about autism and “autistic” people have decreased.

Ido is an eighteen-year old author from the USA, who started his blog 2011 and by March 2015 178 posts have been published. He was most active in 2011 with the general amount of 87 posts compared to only four posts in 2014. Ido defines himself as “an autistic guy with a message” who became “a free soul” after finding a way to communicate and attend a general education high school (Ido, 2011). Ido moved beyond the Internet space in his attempt to spread the word about autism and in 2012 his first book about the symptoms, learning and communication was published. For Ido the use of Ipad made education and communication possible and he is promoting an idea of a wider use of computers for autists in learning. Being a non-verbal autist with limited abilities for self-care, eye contact and motor control, he gives speeches and lectures on autism in universities with the help of his mother or aide who utter sounds for him.

Stop looking at our weird movements, blank faces, lack of speech, trouble handwriting, poor self control, and on and on, as proof of intellectual delay. It may look like it, but I think looks here deceive. Believe me when I tell you that if I could look normal on the outside I would do it immediately. I am normal on the inside. (Ido, 2015).

The words used most often throughout the duration of his blogging activity are “autism”/“autistic” (684 times) and “school” (209 times). Ido managed to become a pioneering non-verbal “autistic” person in general school and plans to enter university in future. About 25 posts in his blog are devoted to feelings, hesitations, and emotions connected with studies and school based on the tag analysis. 17 posts tell about the use of AAC, Ipad, importance of typing skill and treatment of autism. According to Ido, those posts as well as educational methods and autism theories cause most feedback and interest among the readers. As any other teenager, Ido has people who inspired him, served as a role-model and gave food for reflection of what a disabled person can achieve. Nine posts are devoted to the life descriptions of Oscar Pistorius, Stephen Hawking, Temple Grandin and their contribution into social awareness and recognition of success that people with disabilities can reach. Besides, Ido enjoys trying new food, unlike many autists, watching cooking TV show, working out with a trainer and hiking.

Ben is a 25-year-old blogger, who finished school for students with learning disabilities and now is attending college at the University of Central Missouri where he was accepted into

the program for people with intellectual and developmental disabilities. He was diagnosed with Asperger's Syndrome although leads an active social life and does not have the difficulties most people with autism face in communication: holding eye contact, reading emotional cues and body language (Ben, 2014). He likes taking photos, writing poems, making arts and crafts in his free time. He has been a leader and a member of a few student organizations and gives speeches and interviews on his autism and Buddhism experiences. The first blog Ben started in 2011 and its discourse is focused on his experiences as a college student who tried to start an "autistic" social network on campus and numbers 105 posts with maximum of 37 posts in 2014. The Autist Dharma blog was started in 2012 and tells about author's beliefs as an "autistic" activist and the Buddhism perspective on this role. It totals 80 posts with maximum activity in 2014 when 37 posts were published. Whilst the first blog is oriented on the author's immediate environment within school setting from the perspective of autism, the latter covers political and social events in disadvantaged areas of the world as well as autism told from the position of Buddhism. According to the Blogger.com statistics, Ben's blogs are viewed in the USA, Canada, Europe, Asia and Latin America. The concept of "socially engaged Dharma" (Ben, 2012) includes awareness of the suffering and turmoil all over the earth and cultivation of non-discriminant compassion for them: "We see only a small portion of the world which informs our view of reality. Our world is so saturated by media. Meditation allows us to see a bigger picture which can help make us agents for social change in our world" (Ben, 2014). Ben has been practicing Buddhism since 16 years old and noticed that meditation has improved the autism symptoms and his own acceptance of the condition (Ben, 2014).

The Buddha also said that hatred (or its variations like stigma) are self-defeating. When you can't accept another person, whether it's because of their race, religion or disability, you only make your own life more miserable. People with autism probably ought to not worry for too much longer because people who are prejudiced will eventually bring about their own implosion. (Ben, 2012).

However, the word frequency analysis showed that most frequently used words such as "autistic", "autism" and others are mentioned 5 times more often than words related to Buddhism description – 1156 times versus 196 times. Besides, the notions of autism and Buddhism rarely coincide especially nearer to the latest posts in 2014. This can be explained by the increase of postings related to world social problems in terms of socially engaged Buddhism.

Lydia, a blogger from the USA, introduces herself as "autistic, disabled, and proud" (Lydia, 2011). She is 21 years old and is in her final year of a Bachelor's Degree in Arabic language. Besides active self-advocacy, Lydia is also interested in creative writing, Ethiopian

food and Balkan political history. The aim of the blog is to provide critical and analytical postings on disability and autism related issues in culture, society and politics. The blog audience includes “autistic” people, activists in feminism and human rights, non-“autistic” people who have “autists” in the family or among friends, as well as academics and researchers and “random strangers who probably meant to find something other than my blog when they Google searched “can people with autism have sex” (personal communication, 2015). The topics are usually focused on discrimination, ableism, violence and unacceptance of autism as well as current events in the field of autism advocacy and stories about certain autists and their role in society. She raised campaigns against the use of aversive electric shock devices as punishment for people with disabilities (15 posts dedicated to the Judge Rotenberg Center case), and incriminates negative or criminal actions against people with ASD (13 posts about murders and violence towards children with ASD expressed by parents or teachers). The author promotes the idea of non-discrimination in Mass Media and non-ableist (identity-first) language use. Lydia has been keeping her blog since 2011 and it totals 183 postings, most active in 2012 (72 posts) compared to 2014 (17 posts). Most frequently used words are “autism”, “autistic” and cognate words (2166 times), “disability”, “disabled” (1451 times), and “people”, “person” (1966 times). All of these notions were usually mentioned in the same context and narratives, which corresponds with the prosocial pattern of the blog.

I write because my voice is necessary and valid and legitimate. I write because I need to agitate you. I write to shout from the rooftops that I’m here and I have a voice and my voice and hands are loud. I write because ableism, paternalism, infantilization, murder apologetics, and de-legitimization must be called out wherever and whenever they happen. I write because sitting passively while my people are dying and languishing in institutions just isn’t my style. (Lydia, 2012).

E. is a 25-year-old PhD student from the USA living independently from parents and aspired to become a professor in future. In her free time, she cooks and knits which encouraged her to launch an online shop. The title of the blog “The Third Glance” appeals for giving another chance for people who are rejected by society for different reasons.

At first glance, I pass. I can enter into the neurotypical world and it looks like I’m doing well. It looks like I’m normal, successful, and all-around a good example...Because when you take that second glance, you see that I can’t pass. That I flap and jump up and down and babble incoherently when I’m excited about something...But then there’s the third glance, the one that most people never bother to take, but it is the most important one, the

one that captivates you, and turns that fleeting glance into a good long look...They saw a person, because they took the time to really truly see. (E., 2011).

The blog was started in 2011 and totals 153 postings with gradual decrease of activity, which can be explained by the deteriorating state of health of the author (101 posts in 2012 compared to 13 posts in 2014). The aim of the blog is to provide personal experiences for the readers' better understanding of autism as well as for further reflections and analysis by the author herself. As a result, the majority of the blog audience are parents of "autistic" children and "autistic" adults. The blog tells the reader about the difficulties an "autistic" person faces in everyday life and how the author overcomes them. There are instructions called "Survival guides" for autists telling how the author deals with parties and gatherings, travels and sharing a room with a roommate. This topic accounts for 12 posts, such as "An autistic Holiday Survival Guide" (2011), "Back to School: An autistic's tips for surviving the start of school" (2012), "International Travel and Autism" (2012). These posts are aimed not only at "autistic" audience but also everyone who interacts with persons with autism. This can be important for parents who try to understand their children and what they come through in everyday situations. E. was abused physically and mentally by her parents for her "autistic" traits so she sees the purpose of the blog in supporting and sharing information with parents, teachers and those who approach persons with social impairments. The words "people" and "person" are used most frequently (860 times) and usually in combination with words "autism", "autistic" etc. (712 times). "School" is the third among most used words (199 times) and since the end of 2012 it has been rarely used in the same context as "autism" and "people". This can be explained by the reason that in the beginning of the blog the author was mostly focused on the important school issues from an "autistic" person's perspective and after 2012 the blogger's own studies and teaching have been in the limelight.

Daniel is a 20-year-old actor and blogger from the USA who started blogging in 2014 and the total amount numbers 12 posts. He does not write anonymously because considers that "it's important to show the humanity behind the words, and to be open about opinions and identifiers even if they're unpopular- *especially* if they're unpopular" as well as promote his name as an actor (Daniel, 2014). Although the author states that the aim of the blog is not to self-advocate or share "autistic" experiences, the TAPoR analysis showed that "autism", "people", "neurodiversity" are the most frequently used words (145, 134, 92 times relatively). The tag analysis demonstrated that most of the posts are dedicated to the problems of ableism, autism, activism and language issues.

Lei is 39 years old, she is married, lives in the USA and has an “autistic” 10-year-old son. Being “autistic”, she considers herself a disability activist and in her free time, she enjoys painting and writing. Lei started blogging in 2013 and there are 29 posts by February 2015. The purpose of the blog is to promote autism acceptance especially from an “autistic” mother perspective. As a result, the author shares her experiences in teaching self-advocacy skills to children (2013) or using exercises to reduce anxiety (2013). The blog audience is not only “autistic” people, but also parents of “autistic” children, “autistic” parents, and readers interested in disability rights. In 2014, she was motivated to open a non-profit library on acceptance, autism and neurodiversity due to the lack of information from the experts and autists themselves. Consequently, Lei managed to raise money from a GoFundMe campaign and purchase books on the history of the disability rights, inclusion and “autistic” authors’ books.

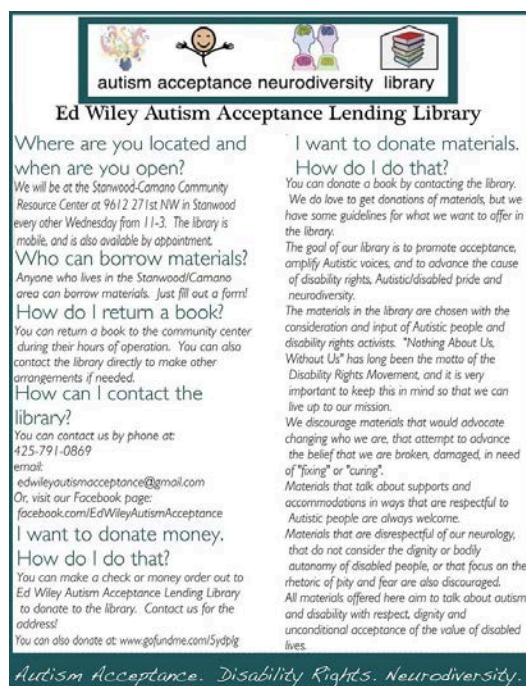


Figure 2. FAQ page for the library.

The library’s Facebook page serves as a platform for news, important topics, updates, and donations. The logo for the library was created on the base of AAC concept. Lei plans to expand the library through obtaining materials in Spanish for members who speak English as a second language, hosting events on autism acceptance, gathering experts among “autistic” people to review books. Lei and her son also post their book reviews, which she assumes to be most interesting for the readers (personal Lending Library communication, 2015). The most frequently used words are “autism”/“autistic” (364 times), “people”/“person” (276 times), “child”/“children” (138 times) which correspond with the aim of the blog to share information and feelings of an autism advocate and “autistic” mother of an “autistic” child.

Cynthia is 46 years old; she is married and lives in the USA. She works part-time at the library and has work experience as an editor, reporter and a columnist. She possesses a Degree in Library and Information technology as well as a Bachelor's Degree in English. Besides her work in the library, she is also interested in sewing, knitting and cycling. She was not diagnosed until the age of 37, so never had an access to special support and as a result was physically and verbally bullied in school. She started posting original writings in 2000 and that is when her blog was started. At first, there were book reviews for an online retailer as well as past writings from various platforms including offline journaling. Later in 2012 it became important for a journalist to respond to a social demand and to migrate to an Internet space to be "ahead of the curve" (personal communication, 2015). The blog serves as a way to assembly past writings together with new narratives: "One of the best arguments for back-dating my writings and migrating them onto my blog is the reasonable assurance that they will continue to exist for as long as I allow them to" (Cynthia Parkhill, 2013). Since the blog has been kept for 15 years, it reflected the priorities the author had in different times. When she learned in 2007 that she had autism she posted more information on self-advocacy, politicization and employment discrimination of autism. Cynthia also used digital media as an extension of her previous job of a journalist until her volunteering and motivation led her to a new job of a librarian assistant in 2012. Thus, besides autism issues, other projects related to librarian work as well as book reviews are in the focus of this blog. Another blog launched in the mid-2014 is focusing on viable alternatives to auto-dependent travelling. It is worth mentioning that the author raised communication and social issues in her main blog long before an official diagnosis that in the end encouraged her to join the non-profit organization offering help for improving speaking and listening skills. Unlike other bloggers from the study, Cynthia posts news on the labor market from "autistic" prospective, actively shares other bloggers' and writers' articles, books recommended for autists and instructions for those interested in journalism and media. There are also many writings on bullying (100 posts), libraries (369) and books in general (289). This blog totals 1439 posts with maximum writing activity in 2013 (344 posts). According to Google Analytics, 45 percent of the readers are female and the average age is 25-34. The most frequently used words are "library"/"librarian" (4738 times), "books" (3896 times), and "autism" (3001 times). Unlike the rest of the bloggers in the study, "autism" is not the most frequently used word, which can be explained by the lack of diagnosis and author's strong interest in reading and books throughout 15 years of blogging.

Karolina is 21 years old and she is a Ukrainian blogger publishing her posts on the platform of the Russian social network www.vk.com. Due to the lack of diagnosis tools, she was first diagnosed with deafness and sent to a kindergarten for deaf children. Luckily, this diagnosis

was refuted quite soon and Karolina’s mother developed an individual intervention program for her daughter which allowed her to finish mainstream school and enter the higher vocational school. However, she was ostracized and bullied there and enforced to leave the school. This story received wide publicity on the local TV and Karolina managed to enter the University. Now she studies Journalism, writes poems, articles and pictures as well as works with other “autistic” children. Her blog “Under the raindrops” is kept in Russian and Ukrainian languages and was launched in 2014 with 30 posts in total.



Figure 3. The account image of the “Under the raindrops” blog.

The blog content does not only include articles on autism, but also interviews with autists, reposts from other groups on psychology, disabilities, and poems. There are 61 followers of the blog, which is considered by the author to be her diary. The access to the blog is private which means, that the owner has to approve a person who wants to follow the blog. Thus, there are mostly friends and acquaintances among the followers who comment the posts referring to the events common for the discussants. Besides the writings, there are links to videos, pictures and music related to autism and other topics, such as love, education and politics. The most common words are “autism” (117 times) and “Karolina” (56 times) which can be explained by the personal character of the blog, that serves as a place for communication and discussion for people who are familiar with each other.

The further findings are based on blog analysis and reveal the key topics and major concerns raised in “autistic” online communities and reflect bloggers’ everyday life and more fundamental issues. Table 3 summarizes the findings received by the means of TaPor and reflects the most frequently used words in the blogs participating in this study.

<i>Name</i>	<i>TaPor word analyses (use frequency)</i>
Nikita	“Mama”(57), “Moscow” (35)

Alyssa	“People” (2092), “Autism” (1658), “Autistic” (1721)
Ido	“Autism”/“Autistic” (684), “School” (209)
Ben	“Autistic”/ “Autism” (1156), “Buddhism”/ “Buddhism (196)
Lydia	“Autism”/“Autistic” (2166), “Disability”/“Disabled” (1451), “People”/“Person” (1966)
E.	“People”/“Person” (860), “Autism”/“Autistic” etc. (712) “School” (199)
Daniel	“Autism”/“Autistic”(145), “People”/“Person”(134),“Neurodiversity” (92)
Lei	“Autism”/“Autistic” (364), “People”/“Person” (276), “Child”/“Children” (138)
Cynthia	“Library”/“Librarian” (4738), “Books” (3896 times), and “Autism”/“Autistic” (3001)
Karolina	“Autism”/“Autistic” (117), “Karolina” (56)

Table 3. An overview of the most frequently used words in blogs.

6.2 Findings: thematic analysis

6.2.1 ASD online: the neurodiversity movement

It is worth mentioning that that the term “neurotypical” was first used by people with autism themselves for describing “non-autistic” individuals but later this term was borrowed by members of scientific community, too (Kenway, 2009). Self-awareness and identity formation is an important part of acceptance of the condition, which is widely promoted in “autistic” online communities. “Neurodiversity is the philosophy that neurological diversity is a natural and normal part of the human experience, both genotypically and phenotypically” (Lydia, 2012); “Neurodiversity refers to a scientific fact, a paradigm, and a movement. The fact is that brains are not all wired the same. The paradigm is about how the fact should be viewed: as a form of human diversity that has privilege and oppression dynamics much like many other forms of diversity” (Alyssa, 2013).

“Neurodiversity” coined in “autistic” community or “neuroatypicality”/ “extranormality” adopted by Smagorinsky (2012) account for those whose mental makeup differentiates itself from others in society.

To neurotypicals, the obsession among those on the “normal” mental health spectrum with adhering to social rules, dressing according to mainstream fashion, feigning politeness with those they dislike, and engaging in other socially acceptable conduct serves as superficial and disingenuous courtesies that distort, rather than promote,

authentic social relationships, and that waste time and energy in the construction and maintenance of appearances. (Cook & Smagorinsky, 2014, p. 298).

Thus, Neurodiversity Movement not only reveals the medical and psychiatric aspects of brain functionality but also an activism and advocacy movement. Not only individuals with autism and Asperger's syndrome contribute in it but also people with bipolar disorder, dyslexia, Down's Syndrome, dyspraxia and other learning disabilities. Some bloggers see neurodiversity as a socially constructed term, as soon as "non-autistic" individuals have also different way of thinking but do not go through labeling or stigmatization because of this natural diversity:

It puts disability as something that's created by social forces, much like the neurodiversity paradigm says that the issues people have based on being of a different neurotype, such as by being "autistic", have a lot more to do with societal barriers and discrimination than with the actual status of having different needs than what's expected of a neurotypical. (Alyssa, 2014).

Neurodiversity is considered as a naturally-determined form of human diversity as a cultural, racial, gender or any other diversity which thus should be taken immovably and unaffectedly (Alyssa, 2013; Lydia, 2014). The terms of "neurodiverse" and "neurotypical" raise the question of what actually being "typical" or normal means:

For an autistic person, autistic is the only normal. For an autistic person, neurotypical is weird, mysterious, puzzling, and abnormal, because we autistics have never experienced being neurotypical and have no psychic powers with which to gain insight in the absence of education. Without knowing what neurotypical is, telling me how I am different from it is less useful than telling me how my thoughts are different from an alligator's thoughts. (Daniel, 2014).

Vygotsky (1993) in his observation of blind children concludes that blindness is not a disease but a normal condition for that child and feeling of uniqueness or not belonging arises from his social experience where blindness is not normal. Vygotsky stood on the idea of mediational settings where a "defect" is considered as a stimulus to development and strengths cultivation. Since every individual has his/her "insanity" (1993, p.37) it is not a disorder but "different sorts of orders" culturally and socially determined on the one hand, and treated by society on the other (Smagorinsky, 2012, p. 69).

Such ways of being as deafness or eating disorder determine the existence and quality of life. The difference from *typicality* in these cases never puts the intellectual or cognitive abilities of an individual under question so why should this be done in terms of *auties* or *aspies*? The Internet activists emphasize the importance of acceptance in the culture of all people with different ways of being.

To embrace the neurodiversity paradigm is to refuse to pathologize neurocognitive styles and experiences that differ from our own, and to accept neurodiversity as a natural, healthy, and important form of human biodiversity – a fundamental and vital characteristic of the human species, a crucial source of evolutionary and creative potential. (Neurocosmopolitanism blog, 2013).

The self-advocacy communities and groups see their mission in increasing awareness and, what is more important, acceptance among the “autistic” individuals and in society because integration is possible as soon as necessary tools and conditions are provided on the administrative level.

Despite public “awareness” on autism, nothing really has changed. In schools autistic people sit in different classrooms from their neurotypical peers, apart from the mainstream of the school, turning them into outcasts, because typical public school classrooms are not equipped to teach them, despite it being perfectly possible, which in turn, damages their chances of reaching their full potential rather than only being able to be a UPS driver, while their neurotypical peers go off to exciting careers of their own. (Ben, 2013).

According to one among many advocacy online communities “Aspies for Freedom”, Asperger’s and autism are not always disabilities but a new concept that should be accepted by a society:

We know that autism is not a disease, and we oppose any attempts to “cure” someone of an autism spectrum condition, or any attempts to make them ‘normal’ against their will. We are part of building the autism culture. We aim to strengthen autism rights, oppose all forms of discrimination against aspies and auties, and work to bring the community together both online and offline. (Aspies for Freedom, 2007).

Therefore, online communities and groups bring together the individuals on spectrum and play a significant role in building networks and awareness. H. Blume (2007) compares the Internet for “autistic” individuals with Braille for the visually impaired. Due to evident reasons, autists had no voice to speak for themselves and to transmit their needs, thoughts and attitudes. With the development of technologies, this isolation was reduced and a new way of communication allows people with speech impairment to find their voice.

6.2.2 Experiences of bullying and autism

Children and young people with autism are exposed to bullying more than those with other or no specific educational needs (Zablotsky et al., 2014; Hebron, 2014). Zablotsky (2014) also suggests a new form of bullying – cyberbullying, which is, carried out through new technologies such as social networking websites like Facebook. It allows bullies to reach their victims even though they consider themselves safe in home setting. In this case, parental better insight into child’s relationships is very important for prevention and reducing aggressive behavior.

Cynthia (Cynthia Parkhill, 2013) blogs about bullying and emphasizes the importance of not blaming the victim thereby compounding the original abuse. She was bullied herself both verbally and physically as well as excluded from schools. She also writes that bullying is not limited to childhood but extends to professional and public environments. In this case, a victim should not be accused but provided professional help and support.

The post resonates with me because I am a survivor of childhood peer abuse...My intention with this post is to corroborate that victim blaming happens. It happens with rape and it happens with bullying — and the viciousness with which a victim can be attacked rivals the original abuse. (Cynthia Parkhill, 2012).

Unfortunately, all the bloggers from the study were bullied at school not only by classmates but also became victims of teachers’ abuse. It was not always a malicious behavior but sometimes a consequence of teachers’ poor training and education accessibility for “autistic” children: “There is a nationwide lack of accurate information for teachers about how to interact respectfully, meaningfully, and appropriately with autistic students” (Lydia, 2012). As a result, some of the bloggers expressed their willingness to have been offered homeschooling instead of attending school every day: “it doesn’t have to be in a traditional school environment to be educational” (E., 2012). The same author mentions the difference between school and academia settings in terms of attitudes towards disability. As E. is a PhD student, she mentions that academia environment is much more accepting and welcoming not least since there are “autistic” persons among professors, too.

I started filling in what he was pointing out, to show that I understood him. Then I made a really neat leap of logic. I was really excited by it, and I bounced in my chair and flapped my hands a little. The professor grinned, and said “wow, that’s brilliant!”, then he flapped a little bit back, and we resumed discussion of the project. (E., 2013).

However, in spite of comfortable atmosphere of acceptance, E. still keeps her diagnosis in secret for fear of possible labeling and employment discrimination. Other bloggers provide their childhood memories of bullying and aggression. Lei was undiagnosed for a long time and had to suffer severe experiences inappropriate for any child:

When I was in second grade, my teacher left me in the basement, under the stairs because I was "disruptive". She told me to "Be quiet and wait." Except she forgot about me all day, so I sat there under the stairs, crying and traumatized and wondering if I'd ever be able to leave... I sat there crying, and hitting my head against the wall...I was "disruptive", meaning I cried in class because I didn't understand instructions, because the lights hurt my eyes, because everyone was too loud, because she grabbed my wrist when I wouldn't spell something out loud in class. (Lei, 2013).

Lei gives that example as a call for parents and teachers to explain that behavior is the only way a child can sometimes use for communication. Her reaction to such sensory triggers as light and noise was misunderstood and ignored by the teacher who assumed it a reason for punishment.

The authors who find ICT and typing sometimes the only possible way to communicate and share emotions emphasize the importance of teacher's acceptance and encouragement of this type of learning.

An example was when my first speech was published in a newsletter for The Friendship Circle three years ago. The only negative feedback came from a teacher of "autistic" kids who stated that in twenty-five years she had never met a non-verbal "autistic" person with such advanced thinking and writing skills, so therefore I couldn't have such advanced thinking and writing skills. This way of thinking not only insulted me, but it meant that she was unable to see the potential in her own students. This needs to change, I think. (Ido, 2011).

Another example provided by the same blogger caused his overflow and meltdown when he, a non-verbal autistic, was asked to recite a poem without a letter board. Despite the author knew the poem by heart and could reproduce it with the use of AAC tool he was forbidden to do so and thus failed the task. Ido suggests that lack of training and empathy from the teachers prevents them from discovering potential in their students (2011). In Ido's case, he managed to find a high school where he could fit in and the teachers accepted the presence of his aide and typing as a means of communication. Another blogger, Nikita, received home education in a

mainstream school via Skype and for him this option was most preferable (personal communication, 2014).

6.2.3 Social communication

For many non-verbal persons Internet and online communication has become a way to escape “a silent prison” (Ido, 2012) and the participants of this study are no exception: “Social media is actually a place where “autistic” people thrive: “There's no body language or facial expressions, no need to speak instead of typing, and no urgency” (Daniel, 2014). Some of them feel that they have to prove their intelligence although they can and want to communicate every day: “To be autistic means you have to prove yourself over and over. I sometimes imagine how my scrutinizers would like me scrutinizing them” (Ido, 2011). People around “autists” might not be aware and thus hesitant or even fearful of specific behavior features common for them such as flapping, stimming, rocking back and forth, tapping fingers or echolalia that also adds to ostracism and ignorance. Inability to read or react to social cues impedes communication: “Sometimes I get in trouble for having the “incorrect” facial expression, or for making the facial expression wrong – the look of horror when someone tells me something good, or surprise when someone says something happy” (E., 2012). A fear of negative views and preconceived notions and assumptions explains E.’s decision not to reveal her condition to anyone but close friends. She grew up without knowing her diagnosis that her parents concealed from everyone due to the same fears. E.’s posts that give recommendations for “autistic” people on how to survive crowded gatherings or share space with other individuals reveal for “non-autistic” readers the true nature of autism and reasons for unexpected reactions. For example, email messages when possible are more preferable to discuss house duties or board games is the best alternative to noisy parties as well as an access to a quiet place in the house for an “autistic” person. Lei explains some socially inappropriate actions as the only way to avoid the meltdown: “If you are talking or interacting with an “autistic” person and they ask you to back off, with words, or unspoken language, you need to respect that” (Lei, 2014). Still, people with autism manage to make friends and maintain relationships, both friendly and romantic. They might face the same difficulties as shyness and shutdown that follows which is a result of anxiety but not indifference or rudeness (Ido, 2012). “The man or woman who is in a relationship with a woman on the autism spectrum may need to “take the reins socially” and that person will “need to be sensitive to the special needs inherent in autism” (Cynthia Parkhill, 2012).

Another common assumption stemming from the Theory of Mind and which the bloggers try to refute is that “autistic” people lack empathy: “The most general description of social impairment in autism is lack of empathy. Autistic people are noted for their indifference to other

people's distress, their inability to offer comfort, even to receive comfort themselves” (Frith, 1989, p. 144); “It is not altogether clear that where autistic people do fail to develop a strong sense of self, the explanation will lie solely in failure of empathy, rather than in something more general which underlies this failure” (Kennett, 2002, p. 356). However, not only “autistic” bloggers but also some studies demonstrate that test group with ASD shows a lower level of cognitive empathy than normal controls unlike in case of affective empathy where individual with ASD scored even higher than the control group (Rogers et al., 2007). Cognitive empathy defines the process of understanding other person’s perspective while affective empathy implies a person’s emotional response to the feeling of others. Both approaches are concerned although separate but integral components of empathy (Rogers et al., 2007).

And yes, we autistics are not only capable of empathy, but also of having varied emotions, including mutual and reciprocal ones... How can they say we lack empathy when every part of me, my existence, my consciousness, aches for someone I've never met? (Lydia, 2011, 2013).

6.2.4 Autism acceptance and self-advocacy

Acceptance of the condition is the primary focus of all the blogs taking part in this study. No matter what the purpose of the blog the author defines there are posts dedicated to autism self- and social acceptance. Self-determination is an integral part of identity-acceptance and further development for people with disabilities (Kleinert, 2010; Caldwell, 2010; Carter et al., 2009). The importance of acceptance goes far beyond awareness of its symptoms and difficulties but positive attitude and gratitude together with improvement sense.

In some ways I’m getting used to autism but I can’t get too used to it or I won’t get better. I have to strike a balance between the need to accept myself the way I am and the need to not accept myself the way I am, so I can keep fighting to improve. Not easy to find that middle spot... I am not a mistake, nor a sorry state of messy neurons. I accept my messy neurological system because it has given me a way of seeing life. I fit in with the path in the woods. (Ido, 2013, 2011).

Stimming, spinning in circles, hypersensitivity over textures of clothing and food, low muscle tone, poor coordination, lack of strength and balance, sound intolerance, flapping, rocking are the symptoms described by the bloggers as the most evident ones in the society. However, they do not treat it as a disease but a neurological and developmental condition, disabling in many life spheres. The bloggers consider it as all-pervasive and integral part of a person’s identity, which defines the way an individual perceives the world. Moreover, as any

person without autism, autists are able to meet and overcome challenges although in a different way but realizing this difference and deriving benefit from it. Consequently, the idea of cure of autism is inappropriate and unacceptable “because we do not believe that we are defective, broken, diseased, or in need of being fixed. Having a disability does not mean that there is something wrong with us” (Lydia, 2012). Being cured of autism is compared to be cured of being a woman or Hispanic since it is a part of neurotype and thus should be accepted. That is what blogger Lei tells about her and society acceptance of her “autistic” son:

People have said to me "Oh, I'm so sorry!" upon learning that my child is autistic. I am seen as an anomaly for loving and accepting my child exactly as he is. I don't want to fix him, or make him "indistinguishable from his peers", or to be pitied for the privilege of raising him. (Lei, 2013).

Another blogger, E., considers autism to be her clue for collaborating with the students since her condition taught her to treat people who think differently.

I'm a good teacher BECAUSE I am autistic, not despite it. In a teacher/student situation, the social roles are pre-set and well-defined...I've learned to accept that not everyone thinks like me (in fact, most people don't!), and that it is not only ok, it is extremely valuable. (E., 2013).

The “autistic” community on the Internet numbers thousands of readers and bloggers among those are advocates, professionals in education, family and friends. As a result, no big event related to autism either, positive or terrifying, escapes notice and startles reaction in “autistic” community. For example, in April 2012 Autism Positivity Day Flash Blog, a platform uniting “autistic” bloggers and publishing their writings on the most relevant topics, raised a campaign in response to an anonymous person’s Google search “I wish I didn’t have Aspergers”. As a result, hundreds of bloggers from all over the world came together in a show of support and solidarity and published their reply messages to the anonymous user. Among those were bloggers who take part in this study: “I can't speak for you (no one can but you, no matter what anyone says about them speaking for you), but I know that I personally prefer to stay autistic” (Alyssa Hillary, 2012), “When I used to think (effectively) “I wish I didn’t have Asperger’s”, it wasn’t my wish to fundamentally change who I am – I love being autistic... My wish is that the rest of the world would treat us with the respect that we deserve” (E., 2012), “Even more amazing to learn that those traits that I consider to be my greatest strengths — honesty, creativity, an absence of pretense and my passion for animal welfare and zero-tolerance for bullying — could be attributable to autism too” (Cynthia Parkhill, 2012).

Self-advocacy among “autistic” bloggers is a strong and widely-spread tendency aimed at spreading information and social acceptance of autism. The history of “autistic” self-advocacy movement originated in the 90s and moved into high gear with the development of the Internet and technologies (Rosqvist et al., 2015). Due to these circumstances, advocacy moved far beyond parent and professional groups and now people with disabilities are able themselves to reach the wider public with their agenda. Besides the sense of belonging, encouragement and comfort that group identity brings, participation in “autistic” self-advocacy movements, also develops skills and competency in other life discourses. The improvement of leadership skills was shown in the study by Caldwell (2010) which included in-depth interviews of thirteen leaders in the self-advocacy movements defending the rights of people with developmental disabilities. Volunteer opportunities (i.e. library about autism started by Lei) and involvement in self-advocacy as well as participation in committees and boards provided pathways to building confidence in their abilities and leadership roles. “Leaders learned many skills from the movement, such as networking, developing bylaws, forming and organising a non-profit board, conducting meetings, and collaborating with other organisations. Involvement also helped leaders develop skills and comfort in public speaking” (p. 1009). Moreover, such communication skills as expressing opinion, announcing decisions and evaluating other people’s behavior were also shown to be in strong relation with self-determination: students with social difficulties also demonstrated “limited knowledge about self-determined behavior, ability to perform these behaviors, and confidence regarding the efficacy of their self-determination efforts” (Carter et al., 2009, p. 179). At the same time, those students with developmental disabilities who participate in self-advocacy and utilize successfully AAC for communication have better post school outcomes and a better quality of life (Kleinert, 2010).

Such self-advocates as Lydia, Ido, Lei, Daniel avow their disallowance of discrimination and ableism in school, employment and other social settings. For instance, Lydia emphasizes that disability is a part of social model being misinterpreted by the society: “I do believe that disability is entirely defined by society, but because of our society and our history, yes, being autistic means that I am disabled...we understand exactly why autism is disabling. It is disabling because of the society in which we live” (Lydia, 2012). E., who states that she and the aims of her blog do not coincide with self-advocacy and disability rights defense, explains how fear of unacceptance affects her life: “I’m going to be a professor, and that is one of the reasons I’m so terrified to be “out” about my autism in real life. People are unable to put aside their stereotypes and actually look at a person. If I say I am autistic, the assumption is that I will be a poor teacher” (E., 2013).

Among other campaigns raised in “autistic” community is Autistics Speaking Day on November 1 that was started in 2010 in response to the “communication shutdown” that a few “non-autistic” activists suggested. The “non-autistic” people were encouraged to abstain from all online communication for a day, so they could get an idea of what it is like to be “autistic” and thus promote awareness. In return, adult “autistic” bloggers Corina Becker and Kathryn Bjornstad sparked the first Autistics Speaking Day as a disagreement with this campaign. Hundreds of “autistic” people refused to be silent that day and to use the opportunity to show the world how wrong the comparison of autism and restraint from Internet is because being silent online has nothing to do with being “autistic”. As a result, an Autistics Speaking Day was announced as a chance to share the stories and show the world that autism is not about inability to communicate on Facebook. Every year the bloggers are encouraged to leave their messages aimed to battle negative stereotypes about Autism on Facebook, Tumblr, Twitter, YouTube, and blogging sites. Besides, there are also other events aimed at advancing principles of the disability rights movements with regard to autism such as World Autism Awareness Day on April, 2 started by Autism Speaks organization, Autism Acceptance Month as celebrated in April by Autistic Self-Advocacy Network (ASAN), Thinking Person’s Guide to Autism (TPGA) which are supported by most of the “autistic” Internet community (Alyssa Hillary, 2013). These organizations work on empowerment of “autistic” people to take control of their lives to ensure that their voices are heard in the conversation on administrative, political and social levels. For example, the motto of disability rights repeated many times in blogs of self-advocates is “Nothing About Us, Without Us!”. It suggests that disabled people should be involved with any advocacy, since “What is at stake is that the most important stakeholders -- the people for whom the advocacy is occurring -- are routinely excluded, marginalized, and treated with contempt” (Lydia, 2012). This problem is raised in all blogs, which take part in the study as well as a low engagement of “autistic” people in disability policy.

The self-advocacy movement aimed at asserting autists promotes the following key points to neutralize discrimination and to instate autists in their rights. Among those are:

1. Exchanging the “Autism Awareness” concept for “Acceptance” or “Inclusion”. “Autistic” people are not burdened by the fact that so few people know about our weaknesses or the trouble we are said to give to others, but by them not knowing our value to society and abilities” (Ben, 2014). The abilities of people with autism to contribute into society are underestimated and the endeavor is focused on informing the society rather than improving the level of life of autists.

2. Rejection of Applied Behavior Analysis (ABA) as it considers forced abandonment of common features such as stimming or flapping which help autistic people to self-regulate (Ben, 2014). “While the ethical, monitored use of it may be beneficial in the case of life-threatening behaviors, its uninhibited use and abuse is a great way to induce internalized ableism, self-hatred, and post-traumatic stress disorder” (Lydia, 2012). Besides, the therapy might not be appropriate for all people with ASD as well as not the only effective method. Some authors arrive at the conclusion that the effectiveness of ABA is unproven (Novak, 2007).
3. The use of identity-first language (“autistic person”) instead of person-first language (“person with autism”) implies that autism is a part of identity but not a disease self-advocates in autism would rather cure.
4. Rejection of use a puzzle piece as a symbol of autism, which implies that “autistic” people need to be put together rather than be accepted as a whole.

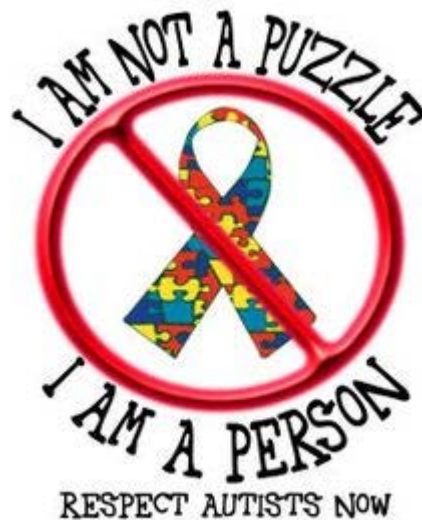


Figure 4. A crossed symbol of autism in Autistic Dharma blog (2014).

5. In Mass Media, autism is represented as a socially dangerous disease and autistic people as violent and aggressive abusers whilst parents killing their “autistic” children deserve empathy and compassion (Lydia, 2012, 2013, 2014; Ben, 2015; Cynthia Parkhill, 2013; Alyssa Hillary, 2014). However, a prevalence rate of violence is 2.7 percent in people with Asperger’ Syndrome that is below the prevalence rate of violence in general population (Ghaziuddin et al., 1991).
6. Autistic people should always be involved in creating the image and policy in rights and inclusion of “autistic” people. The participants of the study emphasize the importance of

participation of autists themselves in all organizations representing autism and disability rights (Ben, 2015; Alyssa Hillary, 2014; Daniel, 2014; Cynthia Parkhill, 2012).

We no longer need parents or professional to speak on our behalf as a community. Some individuals will still want such assistance and that's fine for those individuals but — just as in other communities of adults — the majority of us can and should communicate for ourselves. (Cynthia Parkhill, 2014).

As mentioned above, language is another important component of self-advocacy as well as another major concern in “autistic” community (Wehmeyer, 2000). In comparison to scientific academia where the person-first language is more appropriate, “autistic” Internet community insists on the use of person-first language, which is significant for self-definition and acceptance.

In the autism community, many self-advocates and their allies prefer terminology such as “autistic”, “autistic person”, or “autistic individual” because we understand autism as an inherent part of an individual's identity -- the same way one refers to "Muslims," "African-Americans," "Lesbian/Gay/Bisexual/Transgender/Queer," "Chinese," "gifted," "athletic," or "Jewish." (Lydia, 2011).

The semantic difference between these notions is that the person-first language puts disability or condition separately from a person in spite of recognizing a person and a condition as a whole. The person cannot be separated from autism as it is considered as part of neurology and thus cannot be depreciated or ignored.

Ultimately, what we are saying when we say "person with autism" is that the person would be better off if not autistic, and that it would have been better if he or she had been born typical. We suppress the individual's identity as an autistic person because we are saying that autism is something inherently bad like a disease. (Lydia, 2011).

Since language plays an important role in shaping societal attitudes, the question of person-first language use is a sensitive issue in “autistic” Internet community. The blind and deaf communities arrived at the same conclusions choosing to use an adjective or noun in place of person-first language. Other arising alternatives for autists to announce themselves is “Asperger's”, “Asperger autistic”, “Aspies”, “Auties”, “Aspergians” or “Aspergerians”. The same importance of an appropriate language use is emphasized in terms of “low-functioning” and “high-functioning” definitions of autism.

There is no such thing as mild or severe autism. All autistic people are 100% autistic... With this understanding, we are not talking about a spectrum in the sense that the visible

light spectrum is a spectrum. We should really be calling it the autism continuum.
(Daniel, 2014).

SLIDING SCALE

(Common misconception)



Figure 5. The use of “low-functioning” and “high-functioning” misconceptions in ActingNT blog (2014).

Separation between high- and low-functioning autism restricts opportunities and gives functioning labels: “High functioning means your needs get ignored. Low functioning means your abilities get ignored” (Alyssa Hillary, 2012). What autism advocates suggest is that low- and high-functioning persons have different needs and require different approach but that is what any other “non-autistic” person will seek for too. An ability to communicate verbally or to type only should not put limitations for what this specific person can offer to society or underestimate his/her talents and achievements.

The assumption that autistic people who do things like blog or use speech must therefore automatically be “high-functioning” is fallacious at best and actually harmful at worst. I know firsthand of not a few “autistic” people who cannot consistently perform activities of daily living such as cooking, cleaning, keeping a schedule, traveling, or maintaining hygiene without assistance from a family member, friend, or aide. Yet some of those same people often face ridiculous assertions that because they must be *so* high-functioning or “just Asperger's,” their advocacy clearly is illegitimate and unfounded. (Lydia, 2011).

Since all of the bloggers taking part in this study were bullied or ostracized because of their “autistic” behavior, mental retardation was alleged to them due stereotypes based on the most negative of traits or lack of diagnostic tools. The “mentally ill” or “retarded” terms are evoked by images of flapping, stimming or self-stimulatory behavior such as head banging which can sometimes describe behavior of a “non-autistic” person experiencing depression. These reactions stem from the tendency to view people who differ from the socially accepted

norm as deficient or pitiful (Smagorinsky, 2012). The “R-word”, together with other stigmatizing and ableist words such as “imbecile”, “moron” etc., are unaccepted in “autistic” community since many of its members have come through abuse and insults related to the use of these words. “Many of my teachers threw around the "R" word, or just called me lazy, spoiled and selfish” (Lei, 2013); “I’ve never been called “Aspergery,” but I’ve had the r-word thrown at me” (Cynthia Parkhill, 2014).

Nevertheless, the word "retarded" is often very hurtful for autistic people, as it is frequently used as an insult to dehumanize people with developmental and intellectual disabilities. The r-word is often used to express hatred for people with disabilities. Please don't use it. (Lydia, 2012).

6.2.5 Use and impact of ICT tools

In the core of “autistic” self-advocacy and communication spheres lies an ability to convey and share a message with other bloggers and “non-autistic” community. For Ido, who is a non-verbal autistic, an ability to use tablets not only opened up new opportunities for learning but also allowed him to free himself from all preconceptions about his intellectual disability. Not all of the teachers accepted the use of ICT in class but those who did made it possible for Ido to feel independent. “This enabled me to leave my special education environment and enter a general education one. My old classmates still remain in the same special education class. None have been taught to communicate yet... What I believe that severely autistic people, like me, need is instruction in communication early” (Ido, 2012). The importance of early intervention as well as the importance of educating “autistic” people to use typing as a means of communication was emphasized by other bloggers too (Lei, 2014). AAC and the use of gadgets in communication is considered as a significant component of a full and engaging life: “Communication and the supports to access alternative forms of communication are key to providing all autistic people, especially non-speaking autistic people, the opportunity to self-advocate” Lydia, 2012). Blogging as another dimension of communication gives an opportunity to not only share the emotions and experiences but also receive a feedback at a comfortable for every author pace. Blogs allow feeling the sense of belonging to a group not only for neurotypical bloggers (Thomas et al., 2013) but also “autistic” authors for whom acceptance of their uniqueness is an important step of development.

I started reading blogs by autistic individuals...and it has been amazing to connect with people who have a very similar way of experiencing the world. Through their writings, I have learned countless ways of better functioning. But far more than that, I have learned that there are others like me out there. That I am NOT broken. That my quirks and stims

are NOT inherently dangerous bad things that must be stopped at all costs. I learned that I CAN interact with people and have meaningful friendships that are valued by both me AND my friend. And I've learned how to advocate for myself. Learning that I am «autistic» has saved my life, and I mean that wholeheartedly. (E., 2012).

In addition, another author, Lei, who was diagnosed later in life and thus could not express herself in typing at earlier stages, mentions the feeling of acceptance in her son's case:

Through the internet and technology, my son has been luckier than I, to find his tribe at such a young age. He has autistic friends and mentors that give him a sense of connection and meaning when the rest of the world is not so kind. I am forever grateful to my autistic community for being a part of our "village". (Lei, 2014).

Blog as a source of communication, information and emotions exchange at the same time gives the necessary feeling of security to “autistic” bloggers for various reasons. Multiple conversations in offline settings make it difficult to concentrate unlike blogging where the information flows gradually; eye contact is avoided; a user can restrict communication with dissociative groups with the help of Internet confidentiality tools; and the information Internet can provide about other users includes photo and a name which simplifies a recognition process for an “autistic” person (Cynthia Parkhill, 2012).

Other advantages and difficulties “autistic” users can face online and what blogging brings personally to each of them are discussed in the following part of findings.

6.3 Findings: survey results

For confidentiality reasons the answers to the questions in the survey will remain anonymous and hereafter summary data will be provided with supporting quotations which do not contain the respondent's personal identification.

While the first block of questions provides general information about the participants and their online activity, the second block of questions describes the participants' blogging experience and consists of nine questions. Question №7 raises the topic of the emotional response the writers receive from blogging.

“What does blogging bring to you?”

Not all the respondents assume that blogging brings only good to them although for most of them it is a useful tool for self-promotion and interaction with the world. Among other positive effects blogging brings is tranquility, which stems from the sense of belonging to the

autistic community and self-awareness, better understanding of other people's responses and even feeling of self-worth deriving from advocacy. However, one participants claimed that blogging mostly brings little satisfaction and annoyance, although this blogger has been keeping a blog for a few years and it has a strong self-advocacy focus which might explain frustration. Another respondent gets nothing from blogging because only a person himself/herself can create and give value to things.

“How much time do you spend online/on blogging?”

Questions № 4 and № 8 are aimed at discovering how much time per day participants stay online and spend specifically on blogs including posting and responding to comments. From the responses received, it is hard to conclude that the participants are obsessed with blogging or staying online. The average time most of them spend online for entertainment or communication is one hour per day whilst activity in the blog might take from half an hour to a few hours or even days if it is necessary to write a new post. However, some of the participants use devices with Internet access, which notify them about new messages on Facebook, Tumblr etc. Some respondents have jobs where an Internet access is important as well as for online education courses. Moreover, most of them spend less time online nowadays than a few years ago, which is confirmed by the gradual decrease of quantity of blog posts per year. As one of the participants noted “it's been less lately because of having so much going on offline” (personal communication, 2014).

“What effects does blogging have in your “real life”?”, “Does blogging affect your offline communication? Did it get easier or not to meet new people?”

These questions are closely related to the research questions raised in this study. According to the literature review, Internet communication and the use of ICT tools is beneficial for persons with language impairments and the way it contributes in their social development from participants' point of view is at the heart of this study. Speaking of the impact blogging has on the participants it can be stated that their opinions divided. Six of them mentioned that having a blog made them more popular and they receive invitations for conferences and speeches, which also became easier for them since blogging allows processing complex topics in written forms before using similar language in oral form and thus the speakers experience more confidence. Two bloggers observed improvement in their interactions since it was easier to speak to someone after they made acquaintance through a blog. The rest of the bloggers did not notice any changes in their status or even received negative experience because of the ideas they were promoting in a blog.

The effect blogging has on offline communication in general was evaluated as neutral. Most of the participants never meet the people they get familiar with via blogging and only one participant admitted he was recognized on the streets by the readers and it was not welcomed by him. Thus, it can be concluded that blogging only does not provide improvement in social interaction in “real life” setting but can be a valuable experience in terms of self-development.

“Can you say that blogging fulfills your need for communication?”

Four of the participants stated that typing is their preferred way of communication and blogging as a platform for sharing is ideal for it. The rest of the authors find blogging as a good way to express feelings in a non-threatening place where they can tell their stories, but it cannot fulfill the communication needs completely. For these bloggers, other ways of communication including social networks and real life meetings contribute into their communication needs.

“Have you ever thought about changing/deleting/extending your blog?”

One participant thought about deleting the blog because of the threats directed against what the author was writing in a blogpost. Another participant felt exhausted at some point of life and abandoned writing for a short time but returned to blogging as soon as they felt better. A third blogger also experienced fatigue and a need for a break from writing but the responsibility to the readers stimulated further activity. Seven participants never thought of deleting their blog since it would disconnect them from friends and deprive them of self-expression opportunity. All the participants noticed the changes in the character and topics of their writings due to natural reasons: “I have more than one interest, and my blog is a reflection of me” (personal communication, 2015).

“Have you ever experienced strong emotions during online communication?”

This question opens the section that describes the role of Internet communication for participants. As any other type of communication Internet interactions can have positive or negative effects on the actors. All the participants mentioned the negative experiences they faced while blogging or communication in social networks. These experiences were related to recollecting their childhood memories (one case), bullying (two cases), stories of violence and abuse towards autistic people (six cases), social interaction difficulties (two cases). The emotions described were anger, sadness, worry: “I’ve cried while writing posts before (I may have even said I was crying in the post)” (personal communication, 2015). Only three participants remembered of strong positive emotions they experience online and they are related to providing help and support to other “autists” or parents of “autistic” children.

“Do you consider Internet as a safe place for communication?”

Although Internet provides tremendous opportunities for communication, work and development, it is also an environment full of risks and security holes. Most of the participants are aware of the risks Internet can bring to them in terms of anonymity (“it is important to be careful about how critical or personal information you give”), cyberbullying and trolling (“I’ve gotten anonymous hatemail/hate comments, I know people who’ve gotten death threats”), accessibility-related issues (“when sites are not user-friendly for people with disabilities”) (personal communication,2015). Still, two participants consider Internet to be a safe place for them and it is worth mentioning what none of them became victims of Internet bullying or threats.

“Have you ever been involved in the conflict while communication online?”

Eight participants gave a positive answer to this question and the frequency of their involvement in online conflict varied from “rarely” (1-2 times per year) to “very often” especially in communities related to autism advocacy. “Every time the topic of autism comes up, there is at least one person who wants to tell me I should kill myself. Since I am autistic 100% of the time, this happens quite often” (personal communication, 2015). Among offenders there are not only Internet bullies and trolls but parents of “autistic” children who do not believe the author has autism or get insulted by the use of identity-first language. Some of the bloggers maintain their position and get involved into an argument because they assume that this is a part of self-advocacy. Others try to avoid the discussion and just ignore provocative comments.

“How often do you make friends in social networks/blogs? Have you ever met them in real life?”

Nine of ten participants often make friends via blogging and social networks and might meet them later in real life especially if they live in a common area. Some of them emphasize the value of this experience as well as positive emotions they received from meeting an Internet friend in real life. One participant who does not meet people very often restricts his communication to seeing “autistic” children and their families which he finds mutually beneficial for him and a family. Few participants met their close friends online first and then transferred their friendships beyond the Internet.

“Is communication on the Internet different from the one in real life?”

Most of the participants define Internet communication as different from real life interaction. However, these criteria of distinction vary for each participant. The participants

emphasized such features of online communication: an opportunity to follow and form communities around a shared interest in spite of geographic limitations; reluctance to share some personal things in a blog; less energy required to maintain contacts; less sensory difficulties allowing more time to formulate thoughts; bullying under the guise of anonymity. Two participants define Internet as an integral part of real life: “The reflexive property makes internet communication the same as real life communication” (personal communication, 2015). One participant believes that face-to-face communication can never be replaced.

“What do you benefit from the Internet communication?”

Among the advantages of Internet communication, the participants list the following key elements:

1. An opportunity to speak with people. Some participants have restricted abilities or conditions for communication and Internet saves them from loneliness and expands social circles.
2. Sense of belonging and connection with a larger community, meeting new people with similar interests and problems.
3. An ability to spread information and ideas, influence other people’s view on life.
4. Misinterpreting of autistic nonverbal behavior (flapping, rocking etc.) and following misunderstandings in interaction can be avoided in online communication. “It frees me to communicate in ways that my brain does not allow in the real world” (personal communication, 2015).
5. Moral support and encouragement from online friends and communities.
6. Comfortable conditions for interaction such as extra time for response, an ability to correct/delete messages, avoidance of importance to understand body language and hidden social cues.

“What disadvantages do you face during the Internet communication?”

It is controversial that in spite of the benefits of body language absence in online communication, one participant mentioned that this fact leads to a risk of complete misreading other person’s intentions. Besides, a slower pace, which is considered as an asset of online communication, can play a negative role since one cannot receive a fast response. The participants mentioned it as an annoying factor, which might cause distress sometimes. Two bloggers also find it tiring to blog regularly and keep the level of posts high. Internet trolls and strangers asking questions out of curiosity is another negative factor bloggers are faced with

online. One participant showed regret about the image the readers create without knowing who the author really is.

“What pros and cons does blogging have from the perspective of autism?”

One participant found this question irrelevant since he can give only one perspective and it is always “autistic”. However, other bloggers managed to provide general picture of what blogging can give specifically for “autists”. For most persons in the study, blogging is a great way to communicate “without the ambiguity of short-form conversations” (personal communication, 2015). Self-advocates also mentioned that blogs are a good way to make people listen and change someone’s opinion on disability rights and discrimination since “in real life, nobody listens” (personal communication, 2015). Another participant admitted that his Internet popularity made him take better care of his appearance since people might recognize him. Few participants noted that keeping a blog might be exhausting and frustrating sometimes because it takes much time and effort. However, as one participant emphasized, no matter if you are an “autistic” blogger or not it is important to write due diligence and determine credibility.

7. Discussion

Narrative analysis of texts is an approach in qualitative research that emphasizes the stories in which people demonstrate underlying values and expectations. This method of collecting data has been combined with an online survey, which was attached to the email and sent to the participants. The participants’ answers contributed to understanding of their view on communication and other agents of interaction. According to TAPoR analysis, the most frequently used words are those related to their condition such as “autistic people”, “autistic person”, “autism”. In spite of the success the participants have reached in studies, work or relationships, self-advocacy and disability rights defense is the central topic for most of them. Their experiences and intentions are described from the position of an “autistic” self-advocate who appeals not for awareness but acceptance. The narratives demonstrate what autistics say and do while embracing their identity within a cultural setting and how society values their self-definition and its role in the community. As a result, the authors insist on the social model of disability, which presents autism as a neutral attribute but not a medical problem requiring a cure. Thus, the problem shifts from medical condition to the social barriers, which manifests itself as bullying, prejudice, ableism and discrimination (Dunn & Andrews, 2015). Group identity, belonging and involvement in a common activity such as the Neurodiversity Movement

is shown as a significant part of bloggers' social life. It encompasses not only Internet activity but covers offline settings where "autistic" advocates are able to assert their rights. Involvement into a group activity especially self-advocacy engagement "provided pathways for resistance, connections with a disability community and space to form a positive disability identity" (Caldwell, 2010, p. 1007). Participation in a self-advocacy movement allows developing a positive self-concept and disability identity:

It's about "I'm Autistic and awesome!" and "My autism helps my awesome this way!" and "I don't pass and that's fine" and "Ha ha ha stim ALL the stims because stimming is awesome and you should be jealous because I can experience the win of a good stim buahahahahaha!" It's not about pretending not to be autistic, it's about celebrating who we are, blatantly and proudly and obviously autistic. (Alyssa, 2013).

Identification with disability groups like other cultural experiences is an expression of pride based not only on common experience of disability oppression (Dunn & Andrews, 2015). There are other values shared by its members such as acceptance of neurodiversity, leadership skills, promotion of ICT tools in education and communication, festivals and language. The role of the identity-first is emphasized in self-advocacy communities. Claiming disability (an "autistic person") highlight valuing disability and permitting others to name it. It promotes autonomy and responsibility over one's disability destiny.

Those who advocate for an identity-first approach argue that the person-first approach subtly implies that there is something inherently negative about disability and that use of constructions such as "with a disability" or "with diabetes" unnecessarily dissociates the disability from the person. (Dunn & Andrews, 2015, p. 257).

All participants find most important for the educational system to be adapted for people with special needs. They accept their difficulties as a "neurodiversity" and their disability – as a consequence of social unacceptance. In an effort to eliminate the symptoms the people with autism receive therapies which might have a converse effect, causing suppression and mental implications up to suicidal behavior. "What people are missing is a third choice, the choice of providing supports (some of which might be therapy-related) to autistic people in order to help them navigate the world as autistic people and to set the boundaries they need to set" (Alyssa, personal communication, May 18, 2014). They benefit from online learning and an opportunity to work and study with the help of ICT and insist on AAC to be provided for anyone who needs it. Verbal communication requires an enormous amount of information to be analyzed including people's intonation, body language, and facial expressions. The overload of multi-sensory

information causes overload and meltdown with the following temporary incapacity. Computers and particularly typing help delay the communication giving more time for processing and responding. Researchers suggest several reasons why computers can be perfect tools for education among people with autism. First, computers create an emotional and social distance by acting as a mediator between the actors. Second, ICT helps them to achieve the feeling of “sameness” (opposite to “queer” they are used to). Third, ICT functions can easily be adjusted for individual needs (volume, brightness, which is crucial for sensitivity difficulties) and allow each person to work at his/her best speed (Rajendran, 2000, p.190).

In their blogs and answers the participants emphasized the role of a teacher in obtaining and using typing skills in a classroom with “non-autistic” peers. The most alarming fact across the life stories of all the participants is the shared experience of bullying and labeling proceeding both from peers and teachers. Lack of training and investment, following psychological resistance against ICT in learning create barriers for a wider use of letter boards, iPads and other tools necessary for non-verbal individuals education (Beggs, 2000; Bingimlas, 2009; Becta, 2004). Among other school-related topics raised in blogs, homeschooling was a crucial issue. Ostracized by peers, ignored by teachers and even bored of the segregated classroom learning program, some bloggers claim the efficiency and positive effect of home education when these conditions cannot be reached in a school setting. Instructions appropriate for specific needs of a student, flexible scheduling, adapted environment and less time wasted on non-academic tasks as well as less exposure to bullying and aggression are defined as advantages of home education by the bloggers and researchers (Hurlbutt, 2010).

With regard to the Internet, the results of the survey demonstrated that online communication cannot completely replace offline social interaction for all “autistic” participants. Following someone’s blog, meeting people in thematic communities, online gaming simplifies and prepares actors for further communication in real life setting if one occurs. It might serve as a preparation step or a groundwork for future lifetime friendships and connections and make transition between online and offline communication smoother for people with social impairments. Nevertheless, it is difficult to overestimate the significance of Internet tools for the bloggers:

Still not using “real life” to describe offline, though I will call it “meatspace” when I’m feeling snarky...I will not say “real life” because the internet is part of reality. It’s a subset, not a separate set, and the idea that things happening on the internet aren’t real is

extremely harmful for people whose social lives are primarily online. (Alyssa, personal communication, 2014).

Thus, acceptance of various communication styles is fundamental for building successful dialogue with those who lack skills for “traditional” communication. Utilizing typing instead of oral speech is a supplementary and sometimes the only possible method of learning and socializing.

As well as offline communication, life on the Internet is fraught with danger of which most of the participants are aware. Internet, on the one hand, provides equal opportunities for everyone and, on the other, uninformed users can become victims of the perceived hazards and intrusions. In addition to cyberbullying and trolling which all our participants have experienced to a greater or lesser extent, other computer technology hazards can often trigger anxiety, too. Such risk factors as skimming or phishing (stealing credit card details), terrorist and hate group materials, exposure to online pornography or computer and SNS addiction should be considered by educators while implementing Internet in learning and everyday activities.

Analyzing the possible benefits and risks Internet might be an essential tool for students and a learning technology which goal is to provide students with AD spectrum impairments with a positive experience of effective cooperation and confidence development in social interaction. Unlimited opportunities for self-expression provided by Internet allow the subjects presenting their both positive and negative social life experiences for various audiences depending on the blog idea. Social networking and blogging in a less degree help building connections and friendships with its further transition beyond the Internet space. Moreover, online communication together with proactive attitude towards social implications of autism improves leadership and social skills both in online and offline settings. As a result, such mental concepts as sense of belonging, self-expression, self-esteem and self-awareness are cultivated during blogging and Internet communication.

Internet tools are a new paradigm for teaching effective group work skills in offline space, such as active listening, negotiation, and turn taking. The use of AAC and typing might be a first step to obtaining the oral speech as a preparatory stage and training field. The technology itself does not guarantee successful dialogues between individuals, within groups and organizations. However, with regard to meaningful use of ICT in communication, cultural preconditions and mutual understanding of what constitutes a process of creating a dialogue is significant for starting this process which includes active participation of all actors involved (Bostad, 2004). Computer and smartphone technologies are proved in current study to be a

promising tool for facilitating learning and interacting geared for the special needs population as well as the general public.

8. Limitations and Directions for Future Research

The study included significant limitations. As far as Internet is a new trend in education and little research has been reported on its acceptance and use among people with autism, we cannot say that the issue of generalizability is addressed in this study. Although the qualitative method provides an insight into minds of autistic bloggers, the results received in this study cannot be generalized. The participants in the study can read and type independently, not everyone with ASD obtain these skills.

Another limitation proposed by M. Jorgensen (2002, p. 132) is that the survey method is not suited for discourse analysis since it contains isolated questions with fixed statements. The questionnaires thus presuppose people's attitudes as stable mental dispositions. Consequently, the questions are taken within a specific discourse, assigned by the researcher. Speaking of the survey in this particular study the use of this method is justified by the nature of the research itself as far as it is based on communication with people with autism. Besides, the questions were produced in an effort to avoid any biased attitudes. A quantitative study should be conducted where the participants with autism could verify how much they agree with the reasons for writing blogs, using Internet and evaluate its role in communication.

As most of the data was received from blogs analyses and interpreted so some aspects were taken into consideration. Narrative analyses refers to the methods of interpretation which have a storied form, so conflicts and disagreements may occur among researchers with different perspectives (Bryman, 2012, p. 585). Besides, surveys and interviews guarantee reliable results in case of close connection with a researcher which was unobtainable in the frame of the study.

The researcher suggested that an online interface of the blog and the networking it creates might be an effective tool for developing social interactions in persons with autism, although it does not replace real life communication. The study encourages educators and parents to enrich a range of communication tools and transfer online means of communication into offline setting.

Since in this study blogging was proved as a communication facilitator, blogs and SNS might be a promising tool when used in tandem with face-to-face interaction for people with autism. The opportunity of teacher's use of blogging in the group of learners with ASD together with mindful approach to information representation, which Internet provides can be explored in future studies. The blog or private Facebook group can be used to discuss studies and engage

more with readings and assignments. They contain some capabilities for exchanging documents, organizing and managing events, as well as a shared space for collective discussion. Therefore, groups and blogs can be a kind of limited collaboration application but kept somewhat distinct through the capacity to keep group and other activity separate. The learners with social impairments can follow the online discussion initiated by the teacher, thus share and exchange ideas via typing with subsequent conversation in a classroom setting. It would be interesting to see if online presetting improves further social interaction. The skills taught in a classroom can be then practiced in online setting such as blog and the less-demanding nature of online communication might demonstrate unexpected social skills, which are not practiced while in-person meetings. The problem of the extent to which blog can facilitate and make social interventions effective remains open as well as the conditions and the role of a teacher needed for social skills development in e-learning. Thus, further examination and a larger sample is required to reveal correlations and effects of Internet blogging on offline interactions in terms of autism.

References

- Ahlström, B.H., Wentz, E. (2015). Performance and social life perceived by young persons with ADHD and Autism: A chat-log analysis. *Psychology research*, 5(2), 114-124.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Armstrong, A.C., Armstrong, D., Spandagou, I. (2009). *Inclusive education: International policy and practice*. London: Sage.
- Åsberg, J., Zander, U., Zander, E., Sandberg, A.D. (2011). Social and individual aspects of classroom learning in students with Autism Spectrum Disorder: An action research pilot study on assessment. *European Journal of Special Needs Education*, 27(1), 115-127.
- Aspies for Freedom. (2007). *From the front page of AFF*. Retrieved from <https://aspiesforfreedom.wordpress.com/tag/from-the-front-page-of-aff/>
- Autism Speaks (2010). *How is autism treated?* Retrieved from <https://www.autismspeaks.org/family-services/tool-kits/100-day-kit/treatments-therapies>
- Baird, G., Simonoff, E., Pickles, A., Chandler, S., Loucas, T., Meldrum, D., Charman, T. (2006). Prevalence of disorders of the autism spectrum in a population cohort of children in South Thames: The Special Needs and Autism Project (SNAP). *Lancet*, 368 (9531), 210–215.
- Bakhtin, M. (1981). *The Dialogical Imagination*. Austin: University of Texas Press.
- Baran, B. (2010). Facebook as a formal instructional environment. *British Journal of Educational Technology*, 41, E146–E149.
- Barkhuus, L., & Polichar, V. E. (2010). Empowerment through seamfulness: smart phones in everyday life. *Personal and Ubiquitous Computing*, 15(6), 629–639. <http://dx.doi.org/10.1007/s00779-010-0342-4>.
- Baron-Cohen, S. (1989). Social and pragmatic deficits in autism: Cognitive or affective? *Journal of Autism and Developmental Disorders*, 18(3), 379-402.
- Baron-Cohen, S. (1995). *Mindblindness: An essay on autism and theory of mind*. Cambridge, MA: MIT Press.
- Baron-Cohen, S., Leslie, A.M., & Frith, U. (1985). Does the autistic child have a “theory of mind”? *Cognition*, 21, 37-46.

- Beggs, T. A. (2000). *Influences and barriers to the adoption of instructional technology*. Paper presented at the Proceedings of the Mid-South Instructional Technology Conference, Murfreesboro, TN.
- Bennerstedt, U. (2013). *Knowledge at play: Studies of games as members' matters* (Doctoral dissertation). Retrieved from University of Gothenburg Dissertations and Theses database.
- Bingimlas, K.A. (2009). Barriers to the successful integration of ICT in teaching and learning environments: A review of the literature. *Eurasia Journal of Mathematics, Science & Technology Education*, 5(3), 235-245.
- Blume, H. (2007). *Autism and the Internet or it's the wiring, stupid*. Retrieved from <http://web.mit.edu/comm-forum/papers/blume.html>
- Bolte, S. (2014). Is autism curable? *Developmental Medicine & Child Neurology*, 56(10), 927-931.
- Bosch, T. (2009). Using online social networking for teaching and learning: Facebook use at the University of Cape Town. *Communication: South African Journal for Communication Theory and Research*, 35(2), 185-200.
- Brown, L. (2011). Autistic Choya [blog]. Retrieved from <http://www.autistichoya.com/>
- British Educational Communications and Technology Agency (Becta) (2004). *A review of the research literature on barriers to the uptake of ICT by teachers* Retrieved August 13, 2008, from <http://www.becta.org.uk>
- Bryman, A. (2012). *Social research methods*. London: Oxford University Press.
- Caldwell, J. (2010). Leadership development of individuals with developmental disabilities in the self-advocacy movement. *Journal of Intellectual Disability Research*, 54(2), 1004-1014.
- Campigotto, R., McEwen R., Epp, C. (2013). Especially social: Exploring the use of an iOS application in special needs classrooms. *Computers & Education*, 60 (1), 74–86.
- Carter, E., Owens, L., Trainor, A., Sun, Y., Swedeen, B. (2009). Self-determination skills and opportunities of adolescents with severe intellectual and developmental disabilities. *American Journal of Intellectual and Developmental Disabilities*, 114, 179–192.
- Centers for Disease Control and Prevention (CDC). (2014). Prevalence of Autism Spectrum Disorder among Children Aged 8 years—Autism and Developmental Disabilities Monitoring Network, 11 sites, United States. *Morbidity and Mortality Weekly Report*, 63(2), 1–21.
- Chenail, R.J. (2008). Qualitative researchers in the blogosphere: Using blogs as diaries and data. *The Weekly Qualitative Report*, 1 (11), 72-77.

- Cobb, S., Beardon, L., Eastgate, R., Glover, T., Kerr, S., Neale, H., et al. (2002). Applied virtual environments to support learning of social interaction skills in users with Asperger's Syndrome. *Digital Creativity*, 13(1), 11–22.
- Cochrane, T. and Bateman, R. (2010). Smartphones give you wings: Pedagogical affordances of mobile Web 2.0. *Australasian Journal of Educational Technology*, 26 (1), 1-14.
- Cohen, L., Manion, L., Morrison, K. (2011). *Research methods in education*. New York: Routledge.
- Colby, K. (1973). The rationale for computer based treatment of language difficulties in non-speaking autistic children. *Journal of Autism and Childhood Schizophrenia*, 3, 254–260.
- Cook, L.S., Smagorinsky, P. (2014). Constructing positive social updrafts for extranormative personalities. *Learning, Culture and Social Interaction*, 3, 296-308.
- Cox, M. (2012). Formal to informal learning with IT: Research challenges and issues for e-learning. *Journal of Computer Assisted Learning*, 1-21.
- Cox, M., Marshall, G. (2007). Effects of ICT: Do we know what we should know? *Education and Information Technologies*, 12, 59-70.
- Cox, M., Preston, C., Cox, K. (1999) What Factors Support or Prevent Teachers from Using ICT in their Classrooms? Retrieved from <http://www.leeds.ac.uk/educol/documents/00001304.htm>.
- Dant, T. (2015). In two minds: Theory of Mind, intersubjectivity, and autism. *Theory & Psychology*, 25(1), 45-62.
- Dawson, M., Soulieres, I., Gernsbacher, M.A., Mottron, L. (2007). The level and nature of autistic intelligence. *Psychological Science*, 18(8), 657-662.
- DeSchryver, M., Mishra, P., Koehler, M. and Francis, A. (2009). Moodle vs. Facebook: Does using Facebook for discussions in an online course enhance perceived social presence and student interaction? In I. Gibson et al. (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2009* (pp. 329-336). Chesapeake, VA: AACE. Retrieved from: <http://www.editlib.org/f/30612>
- Dinkins, C. (2005). Shared Inquiry. In P. M. Ironside. (Ed.), *Beyond Method: Philosophical Conversations in Healthcare Research and Scholarship* (pp.111-147). Wisconsin: The University of Wisconsin Press.
- Dunn, D.S., Andrews, E.E. (2015). Person-first and identity-first language. Developing psychologists' cultural competence using disability language. *American Psychologist*, 70(3), 255-264.
- E. (2011). The Third Glance [blog]. Retrieved from <https://thethirdglance.wordpress.com/>
- Edwards, B. (2012). Autist Dharma [blog]. Retrieved from <http://autistdharma.blogspot.se/>

- Edwards, D., Potter, J. (1992). *Discursive Psychology*. London: Sage.
- Edwards, D. (1997). *Discourse and Cognition*. London: Sage.
- Ehlers, S., Gellberg, C. (1993). The epidemiology of Asperger syndrome. A total population study. *Journal of Child Psychology and Psychiatry*, 34(8), 1327-50.
- Elsabbagh, M., Divan, G., Koh, Y-J., Kim, Y.S., Kauchali, S., Marcín, C., Montiel-Nava, C., Patel, V., Paula, C.S., Wang, C., Taghi Yasamy, M., Fombonne. E. (2012). Global prevalence of autism and other pervasive developmental disorders. *Autism Research*, 5, 160-179.
- Estus, E. (2010). Using Facebook within a geriatric pharmacotherapy course. *American Journal of Pharmacy Education*, 74(8), 145.
- Farkas, M. (2012). Participatory technologies, pedagogy 2.0 and information literacy. *Library Hi Tech*, 30 (1), 82 – 94.
- Fayyad, J., De Graaf, R. , Kessler, R. , Alonso, J., Angermeyer, Demyttenaere, K., De Girolamo, G. , Haro, J. M. , Karam, E. G. , Lara, C. , Lepine, Le J.-P. , Ormel, J. , Posada-Villa, J. , Zaslavsky, A. M. , Jin, R. (2007). Cross-national prevalence and correlates of adult attention-deficit hyperactivity disorder. *British Journal of Hyperactivity*, 190, 402-209. Retrieved from: <http://bjprcpsych.org/content/bjprcpsych/190/5/402.full.pdf>
- Fombonne, E. (2005). Epidemiology of autistic disorder and other pervasive developmental disorders. *The Journal of Clinical Psychiatry*, 66(10), 3-8.
- Friesen, N. (2009). *Re-thinking E-learning research: Foundations, methods, and practices*. New York: Peter Lang Publishing.
- Frith, U. (1989). *Autism: Explaining the Enigma*. Oxford: Blackwell.
- Frith, U., & Happé, F. (1994). Autism beyond theory of mind. *Cognition*, 50, 115–132.
- Geneva Centre for Autism. (2006). Retrieved from www.autism.net/index.php
- Ghaziuddin, M., Tsai, L., Ghaziuddin, N. (1991). Brief report: Violence in Asperger Syndrome, a critique. *Journal of Autism and Developmental Disorders*, 21(3), 349-354.
- Green, J. (2004, January 12). Affordable ways to integrate technology into speech therapy. *Advance for Speech-Language Pathologists & Audiologists*, 14(2), 14-15.
- Greenfield, P.M. (1994). Video games as cultural artifacts. *Journal of Applied Developmental Psychology*, 15, 3-12.
- Golan, O., Ashwin, E., Granader, Y., McClintock, S., Day, K., Leggett, V., et al. (2010). Enhancing emotion recognition in children with autism spectrum conditions: An intervention using animated vehicles with real emotional faces. *Journal of Autism and Developmental Disorders*, 40, 269–279.
- Goldstein, A.M. (2009). Blogging evolution. *Evolution: Education and Outreach*, 2, 548-559.

- Greuling, K., Kilian, T. (2014). Motives for active participation in political blogs: A qualitative and quantitative analysis of eight German blogs. *Social Science Computer Review*, 31 (2), 221-237.
- Gurak, L.J., Antonijevic, S. (2008). The psychology of blogging: You, me, and everyone in between. *American Behavioral Scientist*, 52 (1), 60-68.
- Hailpern, J. (2008). *The spoken impact project: Utilizing audio and visual feedback to impact vocalization in non-verbal children with autistic spectrum disorder*. Urbana, IL: University of Illinois at Urbana-Champaign. Retrieved from <http://social.cs.uiuc.edu/papers/pdfs/thesis/hailpern-ms-thesis.pdf>
- Happe, F. (1994). *Autism: an introduction to psychological theory*. London: UCL Press.
- Hardy, C., Ogden, J., Newman, J., Cooper, S. (2002). *Autism and ICT: a guide for teachers and parents*. London: David Fulton Publishers.
- Hartas D. (2010). *Educational research and inquiry*. London: Bloomsbury.
- Hasselbring T.S., Glaser C.H.W. (2000). Use of computer technology to help students with special needs. *Children and Computer Technology*, 10(2), 102-122.
- Hebron, J., Humphrey, N. (2014). Exposure to bullying among students with autism spectrum conditions: A multi-informant analysis of risk and protective factors. *Autism*, 18(6), 618-630.
- Herring, S.C., Scheidt, L.A., Wright, E., Bonus, S. (2005). Weblogs as a bridging genre. *Information Technology & People*, 18(2), 142-171.
- Hillary, A. (2011). Yes that too [Blog]. Retrieved from <http://yesthattoo.blogspot.se/>
- Hurlbutt, K. (2010). Considering homeschooling your child on the autism spectrum? Some helpful hints and suggestions for parents. *EP Magazine*. Retrieved from www.eparent.com
- Idring, S., Lundberg, M., Sturm, H., Dalman, C., Gumpert, C., Raj, D., Lee, B.K., Magnusson, C. (2014). Changes in prevalence of autism spectrum disorders in 2001-2011: Findings from the Stockholm Youth Cohort. *Journal of Autism and Developmental Disorders*. doi 10.1007/s10803-014-2336-y
- Jimoyiannis, A., Tsiotakis, P., Roussinos, D., Siorenta, A. (2013). Preparing teachers to integrate Web 2.0 in school practice: Toward a framework for Pedagogy 2.0. *Australasian Journal of Educational Technology*, 29(2), 248-267.
- Jorgensen, M., Phillips, L.J. (2002). *Discourse analysis as theory and method*. London: Sage.
- Kallinikos, J. (2002). Reopening the black box of technology artifacts and human agency. In *International Conference on Information Systems*, (pp. 287-294). Retrieved from <http://eprints.lse.ac.uk/190/>
- Kedar, I. (2011). Ido in Autismland [blog]. Retrieved from <http://idoinautismland.com/>

- Kennett, J. (2002). Autism, empathy and moral agency. *The Philosophical Quarterly*, 52 (208), 340-357.
- Kenway, M. (2009). Blessing or curse? Autism and the rise of the Internet. *Journal of Religion, Disability & Health*, 13(2), 94-103.
- Kerr, Neale and Cobb. (2002). Virtual Environments for Social Skills Training: The importance of scaffolding in practice. ACM SIGACCESS Conference on Assistive Technologies.
- Kielinen, M., Rantala, H., Timonen, E., Linna, S-L., Moilanen, I. (2004). Associated medical disorders and disabilities in children with autistic disorder: A population based study. *Autism*, 8(1), 49-60.
- Kim, Y. S., Leventhal, B. L., Koh, Y. J., Fombonne, E., Laska, E., Lim, E. C., Cheon, K.A., Kim, S.J., Kim, Y.K., Lee, H., Song, D.H., Grinker, R.R. (2011). Prevalence of autism spectrum disorders in a total population sample. *American Journal of Psychiatry*, 168(9), 904–912.
- Kleinert O'Regan, J., Harrison, E.M., Fisher, T.L., Kleinert, H.L. (2010). "I can" and "I did" – self-advocacy for young students with developmental disabilities. *Teaching Exceptional Children*, 43(2), 16-26.
- Korte, W. B., & Hüsing, T. (2007). Benchmarking access and use of ICT in European schools 2006: Results from Head Teacher and A Classroom Teacher Surveys in 27 European countries. *eLearning Papers*, 2(1), 1-6.
- Kozulin, A., Lebeer, J., Madella-Noja, A., Gonzalez F., Jeffrey, I., Rosenthal N., Koslowsky M. (2010). Cognitive modifiability of children with developmental disabilities: A multicentre study using Feuerstein's Instrumental Enrichment—Basic program. *Research in Developmental Disabilities*, 31, 551-559.
- Kozulin, A. (1993). Literature as a psychological tool. *Educational Psychologist*, 28 (3), 253-264.
- Kozulin, A. (1999). Socio-cultural contexts of cognitive theory. *Human Development*, 42, 78-82.
- Kozulin, A. (2002). Sociocultural theory and the mediated learning experience. *School Psychology International*, 23(1), 7-35.
- Lee, D. (2001). Genres, Registers, Text Types, Domains, and Styles: Clarifying the Concepts and Navigating a Path Through the BNC Jungle. *Language Learning & Technology*, 5 (3), 37-72.
- Leung, L. (2009). User-generated content on the Internet: An examination of gratifications, civic engagement and psychological empowerment. *New Media & Society*, 11, 1327–1347.

- Lounds, J., Seltzer, M.M., Greenberg, J.S., Shattuck, P.T. (2007). Transition and change in adolescents and young adults with autism: Longitudinal effects on maternal well-being. *American Journal on Mental retardation*, 112(6), 401-417.
- Lynch, M., & Bogen, D. (2005). "My memory has been shredded:" A non-cognitivist investigation of "mental" phenomena. In H. te Molder & J. Potter (Eds.), *Conversation and cognition: Discourse, mind and social interaction* (pp. 226–240). Cambridge, UK: Cambridge University Press.
- Mauritzson, U., Säljö, R. (2001). Adult questions and children's responses: Coordination of perspectives in studies of children's theories of other minds. *Scandinavian Journal of Educational Research*, 45(3), 213-231.
- Mazer, J., Murphy, R. and Simonds, C. (2007). I'll see you on "Facebook": The effects of computer-mediated teacher self-disclosure on student motivation, affective learning, and classroom climate. *Communication Education*, 56(1), 1-17.
- McLoughlin, C. & Lee, M. J. W. (2008). Future learning landscapes: Transforming pedagogy through social software. *Innovate: Journal of Online Education*, 4(5). Retrieved from: http://innovateonline.info/pdf/vol4_issue5/Future_Learning_Landscapes_Transforming_Pedagogy_through_Social_Software.pdf
- Mertens, D. (2010). *Research and evaluation in education and psychology*. Los Angeles: Sage.
- Meskill, C., Quah, J. (2013). Researching language learning in the age of social media. In Thomas, M., Reinders, H., Warschauer, M., *Contemporary computer-assisted language learning* (pp. 39-54). London: Bloomsbury.
- Molder, H., Potter, J. (2005). *Conversation and Cognition*. Cambridge, UK: Cambridge University Press.
- Moore, D. J. (1998). Computers and people with autism/Asperger Syndrome. *Communication*, Autumn, 20–21.
- Moore, D., Cheng, Y., McGrath, P., Powell, N.-J. (2005). Collaborative virtual environment technology for people with autism. *Focus On Autism and Other Developmental Disabilities*, 231-243.
- Mueller, F. (1992). Telecommunications: A tool for developing writing and communication skills. *Teaching Exceptional Children*, 25, 8–11.
- Mumtaz, S. (2000). Factors affecting teachers' use of information and communications technology: A review of literature. *Journal of Information Technology for Teacher Education*, 9(3), 319-342.
- Munhall, P. (1989). Philosophical ponderings on qualitative research methods in nursing. *Nursing Science Quarterly*, 2(1), 20-28.

- Murray, T.G., Parker, V. (2004). Integration of computer-based technology into speech language therapy. *Educational Technology*, 31, 53-59.
- Novak, D. (2007). Review and evaluation of assembly bill A999 an act concerning health benefits coverage for certain therapies and applied behavioral analysis for the treatment of certain autism disorders. Retrieved from http://www.nj.gov/dobi/division_insurance/mhbac/070314_A999rpt_MHBAC.pdf
- Obejas, D. (2014). ActingNT [blog]. Retrieved from <http://actingnt.blogspot.se/>
- Ochs, E., Kremer-Sadlik, T., Sirota, K.G., Solomon, O. (2004). Autism and the social world: An antropological perspective. *Discourse studies*, 6(2), 147-183.
- Ontario Ministry of Education. (2007). *Effective Educational Practices for Students with Autism Spectrum Disorders*. Retrieved from www.edu.gov.on.ca
- O'Reilly, T. (2005). *What is Web 2.0: Design patterns and business models for the next generation of software*. Retrieved from <http://oreilly.com/pub/a/web2/archive/what-is-web-20.html?page=1>
- Orsmond, G., I., Krauss, M. W., & Seltzer, M. M. (2004). Peer relationships and social and recreational activities among adolescents and adults with autism. *Journal of Autism and Developmental Disabilities*, 34(3), 245-256.
- Parkhill, C. (2000). CynthiaParkhill [blog]. Retrieved from <http://cynthiaparkhill.blogspot.se/>
- Parsons, S., Beardon, L., Neale, H., Reynard, G., Eastgate, R., Wilson, J. R., et al. (2000). Development of social skills amongst adults with Asperger's syndrome using virtual environments: The "AS Interactive Project." In P. Sharkey, A. Cesarani, L. Pugnetti, & A. Rizzo (Eds.), *Proceedings of the 3rd International Conference on Disability, Virtual Reality and Associated Technologies* (pp. 163–170). Reading, UK: University of Reading.
- Parsons, S., & Mitchell, P. (2002). The potential of virtual reality in social skills training for people with autistic spectrum disorders. *Journal of Intellectual Disability Research*, 46, 430–443.
- Piper, A.-M., O'Brien, E., Ringel Morris, M., Winograd, T. (2006). SIDES: A cooperative tabletop computer Game for social skills development. *Computer Supported Cooperative Work*, 4(8), 1-10.
- Ploog, B.O., Scharf, A., Nelson, D., Brooks, P.J. (2012). Use of computer-assisted technologies (CAT) to enhance social, communicative, and language development in children with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, 43 (2), 301-322.

- Potter, J., Stringer, P. and Wetherell, M. (1984) *Social Texts and Context: Literature and Social Psychology*. London: Routledge and Kegan Paul.
- Potter, J. and Wetherell, M. (1987) *Discourse and Social Psychology*. London: Sage.
- Rajendran, G., Mitchell, P. (2000). Computer mediated interaction in Asperger's syndrome: the Bubble Dialogue program. *Computers and Education*, 35(3).
- Rogers, K., Dziobek, I., Hassenstab, J., Wolf, O. T., Convit, A. (2007). Who cares? Revisiting empathy in Asperger Syndrome. *Journal of Autism and Developmental Disorders*, 37, 709-715.
- Rosqvist, H.B., Brownlow, C., O'Dell, L. (2015). "An association for all": Notions of the meaning of autistic self-advocacy politics within a parent-dominated autistic movement. *Journal of Community & Applied Social Psychology*, 25, 219-231.
- Selwyn, N. (2007). Screw blackboard... do it on Facebook!: An investigation of students' educational use of Facebook. *Paper presented to the Poke 1.0 – Facebook social research symposium*, November 15, at University of London. Retrieved from: <http://www.scribd.com/doc/513958/>
- Shakespeare, T. (2006). *Disability rights and wrongs*. Oxford: Routledge.
- Silver, M., & Oakes, P. (2001). Evaluation of a new computer intervention to teach people with autism or Asperger Syndrome to recognize and predict emotions in others. *Autism*, 5, 299–316.
- Skolverket (2005). *Handikapp i skolan. Det offentliga skolväsendets möte med funktionshinder frånof folkskolan till nutid*. [Disability in schools. The public education's handling of handicap from Folk school to the present time] *Rapport 270*. Stockholm: Fritzes. (www.skolverket.se).
- Smagorinsky, P. (2012). "Every individual has his own insanity": Applying Vygotsky's work on defectology to the question of mental health as an issue of inclusion. *Learning, Culture and Social Interaction*, 1, 67-77.
- Solomon, O., Ochs, E. (2004). Introduction: Discourse and autism. *Discourse studies*, 6(2), 139-146.
- SFARI (2014). *Autism: What we know. What is next?* Retrieved from <http://simonsfoundation.s3.amazonaws.com/share/sfari-specials/2014/whatweknow/20140501whatWeKnow.pdf>

- Thibault, R. (2014). Can autistics redefine autism? The cultural politics of autistic activism. *Trans-Scripts: An Interdisciplinary Journal in the Humanities and Social Sciences*, 4, 57-88.
- UNESCO, Consultative Expert Meeting Report. (2011). *Accessible ICTs and Personalized Learning for Students with Disabilities: A Dialogue among Educators, Industry, Government and Civil Society*. Retrieved from <http://www.unesco.org/new/en/communication-and-information/access-toknowledge/access-for-people-with-disabilities/>
- Vygotsky, L.S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Harvard University Press, Cambridge, MA.
- Vygotsky, L.S. (1986) *Thought and Language* (ed. Kozulin), Cambridge MA, MIT Press.
- Vygotsky, L. S. (1993). *The collected works of L. S. Vygotsky. Volume 2: The fundamentals of defectology (abnormal psychology and learning disabilities)* (R. W. Rieber & A. S. Carton, Eds.; J. E. Knox & C. B. Stevens, Trans.). New York: Plenum.
- Wehmeyer, M., Bersani Jr., H., Gagne, R. (2000). Riding the third wave: Self-determination and self-advocacy in the 21st century. *Focus on Autism and Other developmental Disabilities*, 15(2), 106-115.
- Wlaker, N. (2013, July 26). Re: Neuro-what? [Web log message]. Retrieved from <http://neurocosmopolitanism.com/neuro-what/>
- Watson, D.M. (Ed.) (1993). *IMPACT - An evaluation of the IMPACT of the Information Technology on Children's Achievements in Primary and Secondary Schools*. King's College London
- Wiley-Midske, L. (2013). Autistic Times Two [blog]. Retrieved from <http://autistictimestwo.blogspot.se/>
- Woodcock, B., Middleton, A. and Nortcliffe, A. (2012) Considering the Smartphone Learner: an investigation into student interest in the use of personal technology to enhance their learning. *Student Engagement and Experience Journal*, 1(1).
- World Summit on the Information Society, <http://www.itu.int/wsis/index.html> UN/ITU WSIS, Geneva Declaration of Principles, available at http://www.itu.int/wsis/documents/doc_multi.asp?lang=en&id=1161|0
- Zablotsky, B., Bradshaw, C. P., Anderson, C. M., Law, P. (2014). Risk factors for bullying among children with autism spectrum disorders. *Autism*, 18(4), 419-427.

- Zagal, J.P., Bruckman, A. S. (2011). Blogging for facilitating understanding: A study of video game education. *International Journal of Learning and Media*, 3(1), 7-27.
- Zander, E. (2004). *An introduction to autism*. Autismforum. Retrieved from http://www.autismforum.se/gn/export/download/af_oversattningar/Introduktion_om_autism_engelska.pdf
- Zanette, M.C., Brito, E.P.Z., Coutinho, M. (2013). New influentials: An exploratory study on blogs. *Journal of Direct, Data and Digital Marketing Practice*, 15(1), 36-46.

Appendix

Thank you for participating in the survey! Your detailed answers will help me in the processing and analysis of the data. The information received from you will be treated with respect and with protecting your anonymity. You can also refuse to participate in the survey any time you want to.

Give me some information about yourself:

1. Tell me about yourself, please! (Your age, the city you live in, study experience, interests)
2. How do you spend your free time?
3. How long have you been using the Internet, and particularly blogs?
4. How many hours a day do you spend online?
5. Which other Internet resources, besides blogs, seem interesting to you? What topics are they related to?

Tell me about your experience as a blogger:

6. What is the purpose of your blog?
7. What does blogging bring to you?
8. How much time do you spend on blogging (posting, responses to comments)?
9. What effects does the blogging have in your "real life"?
10. In your opinion, which of your posts are of most interest to the readers?
11. Who is your blog audience?
12. Can you say that blogging fulfills your need for communication?
13. Does blogging affect your offline communication? Did it get easier or not to meet new people?
14. Have you ever thought about changing your blog (extending, advertising, engaging new audiences, deleting)? If yes, why?

The role of Internet communication for you:

15. Have you ever experienced strong emotions (positive or negative) while communicating in social networks/blogs? Give an example.
16. Do you consider Internet as a safe place for communication?
17. Have you ever been involved in the conflict/quarrel while communicating online? If yes, how often does it occur?

18. How often do you make friends in social networks/blogs? Have you ever met them in real life?
19. From your point of view, is communication on the Internet different from the one in real life? Explain.
20. What do you benefit from the Internet communication?
21. What disadvantages do you face during the Internet communication?
22. What pros and cons, in your opinion, does blogging have from the perspective of autism?