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Bachelor thesis

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Public awareness about the usage possibilities of alternative and augmentative communication by people with autism, comparative study between the Czech Republic and Finland

Olomouc 2017 supervisor: Mgr. Zdeňka Kozáková, Ph.D.

Affidavit

I hereby confirm that my thesis is the result of my own work, all literary sources and information applied are listed in the list of references. Furthermore, I confirm that an electronic version of the thesis is identical to printed version.

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Introduction

The topic of the bachelor thesis is a public awareness about the usage possibilities of alternative and augmentative communication by people with autism. Awareness about topics such as a disability or more specifically autism and communication is very important, the more increased awareness, the easier life for every person with some disability. Autism awareness has increased a lot since the first Autism Awareness Day (2007) was established, but even though people may have an idea who the person with autism is or them can imagine some of their specific behaviours, but they do not know probably anything about how to use the specific systems of communication to communicate with a person with autism and speech difficulties.

This was the main reason why the author chose this topic; to find out if her presumptions were correct and to determine if her home country awareness (the Czech Republic) has the same or lower level of awareness than Finland. Why Finland? The author spent one year as an exchange student at the University of Jyväskylä and the approach of Finnish people to individuals with disabilities amazed her. Another reason why was this topic chosen was, that the author was quite a skeptic about the Czech people awareness and assumed that differences between the Czech Republic and Finland could be quite big and visible.

The main goal of the thesis is to determine if there exist differences between general public awareness in the Czech Republic and Finland, about the topic of alternative and augmentative usage possibilities in individuals with autism, and to compare the potential differences, and investigate which potential factors might influence a level of the awareness in each country. This main goal consists of partial goals which are to determine the overall views of the respondents awareness about autism; to investigate the overall view of the respondents' awareness about AAC and their willingness to use these systems; to investigate respondents' opinions about the awareness in their country and to determine preferred and possibly affecting factors for increasing personal awareness about the questionnaire topic; and to compare the collected data and state the differences between the countries' awareness.

The thesis is divided into a theoretical and empirical part. The theoretical part consists of chapters about autism, autism, and communication, alternative and augmentative communication and public awareness. Each chapter provides the theoretical insights into each specific topic and uses the latest literary sources. The most used literary sources are the books from the author Kateřina Thorová about the autism and Jana Šarounová about the alternative and augmentative communication. Together with these, are used other international sources as

professional and recent articles and books. The empirical part is divided into two chapters when the first includes as international perspectives about this topic as well as the Czech and Finnish perspectives and methodology; the second includes results interpretation, hypotheses verification, and empirical part conclusion. The questionnaire survey is chosen as a method of research and the main motivation for this choice is to see the real respondents' opinions and knowledge and to get some hints for a future awareness raising. These protentional hints are intended to be mediated to organisations which are helping people with autism and their families and to be used for a future author's research and efforts to increase the awareness among the general public.

1 People with autism

Recent statistics (2000-2006) stated that the median rate of prevalence of autism and other pervasive developmental disorders in Europe in the rate of 61.9/10 000 (Elsabbagh, Divan, Koh, et al, 2012). The estimates prevalence has increased and varied in different places in the world; the finding of increased number of individuals with autism are most likely represent by broadening the diagnostic concepts, service availability and higher awareness about this topic in professional and public (ibid). Even though the awareness getting higher we should continue with educating the laic public about the topic of autism and other important components included in this topic, as is for example communication in individuals with autism.

1.1 Definition of autism

The most commonly used terms for the autism problematic are nowadays Autism, Autism Spectrum Disorders or Pervasive Developmental Disorders. According to the International Statistic Classification of Diseases and Related Health Problems [1](ICD-10) are Pervasive Developmental Disorders (F84 code): "A group of disorders characterized by qualitative abnormalities in reciprocal social interactions and in patterns of communication, and by a restricted, stereotyped, repetitive repertoire of interests and activities. These qualitative abnormalities are a pervasive feature of the individual's functioning in all situations" (ICD-10, 2010).

Autism can be also defined by specifying the group of impaired areas: "The term autism spectrum disorders (ASD) refers to a group of neurodevelopmental conditions defined by impairment in three areas: social interaction, communication or use of verbal and non-verbal language, and a stereotyped, restricted or repetitive pattern of behaviour, interests and activities" (Fuentes, Bakare Munir, et al. in Rey, 2012, p. 2). Simmons (2006, p. 3) defines autism as well by the usage of the impaired areas: "Autism refers to neurologic disorders involving serious impairment of abilities to interact and communicate socially, and repetitive and restricted interests and activities".

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1 In the Czech Republic – Mezinárodní statistická klasifikace nemocí a přidružených zdravotních problémů (MKN-10).

1.2 Historical development of the approach to autism

To be able to understand to any topic in the world, we need to know its history. The same applies to the topic of autism and short historical review provides reader an introduction to the problematic of autism.

Swiss psychiatrist Paul Eugene Bleuler, in 1911, was the first one who used the term autism (from the Greek autos – meaning self) to name one of the observed symptoms of the schizophrenic patient (Thorová, 2006). Bleuler stated that the autistic thinking was not connected to a group of children with a tendency to be withdrawal from other people and the exterior world, but as for children as well for adults, it is a normal way of thinking (Feinstein, 2010).

Hans Asperger (1938, 1944) was together with Leo Kanner (1943) the founder of the modern autism description (Fitzgerald and Hawi, 2008) and was according to the Feinstein (2010) resources, the first to use the the term "autistic" in 1934.

Leo Kanner was observing a group of children with particular manifestations which are considered as one specific disorder entitled an Early Infantile Autism (EIA) (Thorová, 2006). The purpose of Kanner's study was to state that observed children were living in their own world and for the public abstruse world (Hrdlička, Komárek, 2004). The journal Nervous Child published in 1943 Kanner's article „Autistic Disturbances of Affective Contact", which describes the children group observation results. Kanner finally stated the difference between autistic signs and childhood schizophrenia by the statement: "In spite of the similarities, the condition differs in many respects from all other known instances of childhood schizophrenia" (Kanner, 1943, str. 248).

In 1944 was published the Hans Asperger's article in which he stated the case studies of four boys with the similar behavioral patterns. Asperger described children's problems concerning social behavior, communication differences, limited interests, high intellect together with motor clumsiness (Asperger, 1944). Kanner was mainly focused on the children with more severe forms of autism, on the contrary, Asperger on the children with milder autism forms (Thorová, 2006).

In the 40s Kanner still believed that the autism is a genetically caused congenital disorder, but later influenced by the psychoanalysis, started to examine parental characteristics. Kanner mentioned in his article a concept of refrigerator mothers (emotionally cold) which was used to support the psychogenic origin theory (Hrdlička, Komárek, 2004). In the recent article (2016), written by Kanner's student professor James Harris and professor

Joseph Piven, was the emphasis placed on the misunderstanding of the mentioned emotionally cold parents in Kanner's article (1943). They highlight that Kanner tried to find out if parents are somehow responsible for the child's condition but concluded by stating: "these children have come into the world with the innate inability to form the usual, biologically provided affective contact with people" (Harris and Piven, 2016).

The autism was still considered as connected to the schizophrenia until the 70s, but in 1980, the definition of autism was finally listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) (Richman, 2006). Autism was a visibly distinct diagnostic category, however, there was the only one listed form of autism, called "infantile autism" (American Psychiatric Association, 1985). In the revision of the manual (DSM-III-R), this was replaced with the term "autism disorder", along with a newly included checklist of diagnostic criteria (American Psychiatric Association, 1987).

1.3 Diagnostics criteria of autism

To precisely specify the discipline of autism and its subcategories, we need to focus on the two of the most used diagnostics criteria, which are ICD-10 (2010) used in Europe and DSM-5 (2013) used in the USA.

1.3.1 Pervasive developmental disorders

Pervasive developmental disorders diagnostic criteria can be found in the ICD-10 (2010) under the code F84. It consists of eight subsections.

Childhood autism (F84.0) is a type of pervasive developmental disorder, defined by the occurrence of atypical or impaired development, obvious before the age of three years, and the characteristic by impairment in all three areas of psychopathology: reciprocal social interaction, communication, and repetitive, stereotyped and restricted patterns of behavior. Together with nonspecific common problems, such as phobias, sleeping and eating problems, and (self-directed) aggression, are these diagnostic features typical for the childhood autism (ICD-10, 2010).

In addition to ICD-10 diagnostics criteria is possible to divide childhood autism in low-functioning autism and high-functioning autism (Thorová, 2006). Low-functioning autism is characterized by these difficulties: if the speech is developed then appears in the form of

echolalia[2]; low ability to socializes; stereotypical activities; common self-injury and aggression) (Thorová, 2006). High-functioning autism is characterized by the situation when child meets the diagnostic criteria of autism mentioned above but his or her cognitive ability is above the average range (Sansosti, Powell-Smith, Cowan, 2010).

Atypical autism (F84.1) belongs to pervasive developmental disorder differs from childhood autism by the age of onset (after the age of three years) or does not meet all three sets of diagnostic criteria. It appears most often together with the severely disabled individuals and in individuals with a severe specific developmental disorder or receptive language (ICD-10, 2010).

Rett syndrome (F84.2) arises only in girls, in which normal early development is disrupted by the partial or complete loss of speech and abilities in locomotion, hands usage, together with slowed growth of head. The onset is usually between 7 and 24 months of age. In contrast of social and play development, social interests tend to be maintained. The result of Rett syndrome is almost in all cases severe mental retardation (ICD-10, 2010).

Other childhood disintegrative disorder (F84.3) is a type of pervasive developmental disorder for which is typical a period of normal development before the appearance of disorder, followed by loss of previously developed skills in several areas within a few months. There are a characteristic appearance stereotypes, repetitive motor mannerisms, abnormalities in social interaction and communication, and decreased interest in the environment (ibid).

An overactive disorder associated with mental retardation and stereotyped movements (F84.4) is an ill-defined disorder and is designed to include children with severe mental retardation (IQ – intelligence quotient below 35) who demonstrate problems in attention, hyperactivity and stereotyped behaviors. In adolescence, people with this diagnose tend to change from overactive to underactive. This syndrome is often connected with a variety of specific or global developmental delays (ICD-10, 2010).

Asperger syndrome (F84.5) is characterized by the same type of reciprocal social interaction abnormalities that are typical for autism. Restricted, stereotyped, repetitive range of interests and activities are also typical for this syndrome. In contrast to autism, Asperger syndrome does not include any general delay or retardation in language or in cognitive development (ibid).

[2] Term echolalia specified in the Autism and communication chapter, Communication in individuals with autism subchapter.

The group of Pervasive developmental disorders includes also two undefined subsections: **Other pervasive developmental disorders (F84.8) and Pervasive developmental disorder, unspecified (ICD-10, 2010).**

1.3.2 Autism spectrum disorders

Diagnostic criteria for Autism spectrum disorders (299.00) are divided by the DSM-5 (2013) into five subsections:

1. Permanent deficits in social communication and interaction across, manifested by the following examples: Deficit in social-emotional interchange; Social interaction deficits in nonverbal communicative behaviors; Deficits in developing, maintaining and ability to understand relationships;

2. Repetitive, restricted behaviour patterns, activities or interests, manifested by two of these following examples: Stereotyped or repetitive motor movements (objects, speech); Emphasizes the unchanging routines, verbal or nonverbal behaviour ritualized patterns; Highly limited, abnormally fixated interests (in intensity or focus); Hyper- or hypoactivity to sensory perception or unusual interest into aspects, which affect the sensory input of the environment;

3. Symptoms must appear in the early developmental period;

4. Clinically significant impairment caused by symptoms and affecting social, occupational, or other important areas of current functioning;

5. These disturbances are not better explained by the category of Intellectual development disorders) or overall developmental delay. Autism spectrum disorder frequently appears hand in hand with intellectual disability and to make one diagnose included both of mentioned, social communication should be below the expectation for the general developmental level (DSM-5, 2013).

1.3.3 Differential diagnoses

Autism may be sometimes incorrectly diagnosed in a term of some another diagnosis, at this happens mainly for a reason of slightly common signs. The most represented differential diagnoses are: mental retardation, deprivation or depression and schizophrenia (Gillberg and Peeters, 2003). In addition, most of the people with a diagnosis of Childhood autism has at the same time mental retardation (ibid).

The most important to remember is that not every child under the same diagnosis has all the stated problems at the same degree (Stanley, Greenspan, and Wieder, 2006).

2 Autism and communication

Communication in autism is a wide-ranging topic. To be able to understand a bit of this discipline, it is needed to focus first on the general verbal and nonverbal communication, and communication process. Communication is about two or more people. When some difficulties in communication appear, and especially when the reason is disability, it is important to do not search only for difficulties, but mostly focus on the solution.

2.1 Verbal and nonverbal communication, and communication process

To be able to understand a topic as specific as communication in individuals with autism or even the alternative and augmentative communication, it is needed to an overview of the basics of the communication topic, as verbal and nonverbal communication, and the communication process.

2.1.1 Verbal communication

The verbal system represents mostly verbal signals transmitted airborne and received by hearing (DeVito, 2008). Verbal communication is communicating of one (e.g. inner speech), two or more persons by words (Vybíral, 2000). Verbal communication means selection, combining and language signs production (written expression, articulation, speech strategy, "diplomacy", style choice and speech preparation), the process of mutual communication, perception, and reception of verbal communication and their understanding (ibid).

Verbal communication can be divided into spoken and written form, when spoken form (acoustic) is older than the written (graphic) one (Mikuláštík, 2003). Bodashina (2004) defines speech as a language reflection, as an ability or art of speaking, and as a form of language existence. Speech can be divided into an internal (a cognitive function reflection) and external (a usage of language communicative function), which consists of spoken and written expression (ibid). Language is a social phenomenon, system of conventional characteristics and rules, and community is governed by these rules when communicating or announcing some information (Lechta in Škodová, Jedlička, et al. 2003).

Verbal communication is a tool for abstract contents mediation and conversely, nonverbal communication is a tool for the situation, emotion and endeavours mediation (Nakonečný, 1999). Another difference appears for the purpose of communication when

verbal one is deliberate whereas nonverbal is often unintentional (ibid). “There can be different means of communication (media for transmitting information) – linguistic and non-linguistic ones” (Bodashina, 2004, p. 21).

Linguistics can be defined as “the scientific study of language” (Crystal, 2008, p. 310). Linguistic disciplines important for this thesis are phonetics, prosodics, syntax, semantics, and pragmatics. **Phonetics** study features of human sound-making mainly sound used in the speech (ibid). The basic areas of research include a sound creation (production), perception and physical characteristics of sounds (Mareš, 2014). **Prosody** refers to differences in a pitch, loudness, tempo and rhythm of speech (Crystal, 2008). **The syntax** is a study of the rules focused on the right combination of the words with the purpose of a sentence creation (ibid). **Semantics** study meanings aspects of language units (Thorová, 2006). **Pragmatics** is focused on different aspects of the language usage and relationships between language and its users (Mareš, 2014).

2.1.2 Nonverbal communication

Patterson (in Carta, 2009, p. 132) defines nonverbal communication simply as “the sending and receiving of information and influence through one’s immediate environment, appearance cues, and behaviour”. The nonverbal communication’s channel is compared to the verbal communication able to receive and send information concurrently and if the sensory information appears, the nonverbal communication exists (Patterson in Carta, 2009).

The sources of nonverbal communication are an environment or context (e.g. wall colour, furniture), physical characteristics or appearance (static, explained in the paragraph below) and artifactual clues (e.g. jewellery, clothes) (Matsumoto, Hwang, and Frank, 2016).

Nonverbal messages can be static (“person’s physique or body shape, general attractiveness, height, weight, hair, skin colour or tone” and facial features) or dynamic (adornment cues, which help people to enhance or even change their original features) (Knapp, Hall and Horgan, 2014, p. 11; Burgoon, Guerrero and Floyd, 2016).

Functions of nonverbal communication are: to support speech, to substitute speech, to express emotion, to express interpersonal state and to realize self-expression (Čadilová, 2010). In contrast, Matsumoto, Hwang, and Frank (2016, p. xxi) divide functions into four parts: “**can define communication** (by providing communication background and by clarifying or describing the context or setting), **can comment on verbal communication** (complete the information absent in the words), **can regulate interaction episodes** (e.g. smiling, looking concerned – signal that the person is listening and tracking the conversation;

e.g. tone voice and dynamics – dropped down in the end of speech, to show the listener they have been given a floor) and **can be the message**".

People can nonverbally communicate by gestures and head movements, body posture, facial expressions, eye contact, distance, physical contact, nonverbal aspects, but also by clothing and other aspects of a person's appearance (Vybíral, 2000). Body language, facial expressions, gestures and pictures/symbols are the non-linguistic means of communication (Bodashina, 2004).

Facial expressions

Facial expressions appear in all possible communication situations and are considered as the only one cue which can express the degree of pleasure, consent, and sympathy (DeVito, 2008). Functions of facial expressions of emotion are divided into intrapersonal effects (e.g. raising the eyebrows and upper eyelid helps visual field to become wider and to see more objects in the situation), interpersonal effects (elicit responses from others, indicate the interpersonal relationships' nature and provide inducement for anticipated social behaviour) and sociocultural effects (norms for regulation of emotion facial expression are different in all cultures) (Matsumoto, Hwang and Frank, 2016; Keltner, 2003).

Gesture

The gesture is usually defined as a movement of the hands and arms together with possible usage of other parts of the body (Matsumoto, Hwang and Frank, 2016). The gesture can be used in a variety of meanings but the gesture meanings depend on the surrounding contexts of language, and on social and physical contexts (ibid).

The well-known fact that gesture precedes spoken language leads to link creation between gesture and language acquisition (Colonnesi, et al. 2010). Gesture plays two roles in infant's pre-linguistic period; it helps to create shared attention between caregiver and child and to express information due to symbolic communication (Reynolds and Reeve, 2001c).

Postures

"Postures are defined as a position of the body or of body parts" (Matsumoto, Hwang, and Frank, 2016, p. 387). Postures can show states as liking or disliking, opened or closed orientation, and direct or indirect attention (ibid). For example, short people can compensate their height by holding their bodies in erect position, instead of tall people, who may stoop (Eunson, 2013).

Proxemics (intrapersonal space)

In 1963 Edward Hall, coined the term proxemics and three years later specified four types of distances: intimate (distance smaller than 45cm), personal (in the range from 45 to 120 cm), social (in the range from 120 to 170 cm) and public (distance bigger than 370 cm) (Hall, 1966; DeVito, 2008; Černý 2007).

Haptics (touch)

Touch is defined as a close physical contact and is related to the interpersonal space usage (Hall and Knapp, 2013). Haptics is the earliest developed sense, and as a type of communication is the most important in the early infant-mother relationship (DeVito, 2008; Matsumoto, Hwang and Frank, 2016). Jones and Yarbrough (2009, p. 19) stated 12 types of touch meanings: "support, appreciation, inclusion[3], sexual interest or intent, affection (group of positive affect touches), playful affection, playful aggression (group of playful touches), compliance, attention-getting, announcing and response (group of control touches), greetings and departure (group of ritualistic touches)".

Gaze and eye contact

There are two types of gaze and eye contact. The first type occurs in individuals, when gaze, looking, glance and staring are aimed at other person's face (possibly eyes) (Kleinke, 1986). The second type is mutual; it means simultaneous looking of two people at each other's face (ibid). Kleinke (1986, p. 80) divides gazing behaviours into the classic categorization of nonverbal behaviours: "providing information, regulating interaction, expressing intimacy, exercising social control and facilitation service or task goals".

Kinesics

The discipline of kinesics deals with head, torso and limb movements (Matsumoto, Hwang and Frank, 2016). The term kinesics means body movements and can be divided into actions (containing head nods and hand movements, e.g. waving, pointing and signs expression "OK") and positions (include overall posture, e.g. standing, sitting; arm and foot position, etc.) (Harrigan, 2005; Hall and Knapp, 2013).

[3]Inclusion is endless process, in which people with disability can fully participate in all activities of a society at the same level as people without disability (Slowík, 2007).

The group of nonverbal cues includes also other subsections as a voice tone, volume and speed of speech, another nonverbal aspect of speech, physical aspects of a person, clothing and colour selection, even dealing with time (DeVito, 2008; Matsumoto, Hwang and Frank, 2016).

2.1.3 Communication process

"Communication is a transmission and reception of information" (Bodashina, 2004, p. 21). The term "communication" is originally deduced from Latin word "communis" (together), so when we communicate with someone, it means we meet the person and experience mutual sharing (Rosengren, 2000). Keyton (2011) defines communication as a process of transmitting information and mutual understanding from one individual to another. Sovák (1984) defines communication as an exchange or sending and receiving of information. Information is any change in activities, expressions, or in information processing on the side of the receiver (ibid). As you can see above, there are many definitions of the communication but almost all of them include at least one of basic elements/stages of communication.

Bohdashina (2004) considers as the main components of the communication the "elements of communication". This term includes in her point of view: "a sender, a receiver, something to transmit or communicate about, communication intent and medium of transmission" (Bodashina, 2004, p. 21). In contrast, MTD Training (2010) identifies the main communication components as the "stages of communication". This umbrella term consists of: "source, message, encoding, channel, decoding, receiver, feedback and context" (MTD Training, 2010, p. 11, 12). Despite the diversity of both terms, authors agree on the meanings of each of the stage/element. The sender is a source of the transmitted information (message), the receiver is someone who receives the message, the message is the information you want to communicate about, the channel is the method through which you send the message or "the medium of transmission" (Bodashina, 2004, p. 21; MTD Training, 2010). The encoding (or simply coding) is a process of transferring thoughts into the proper format shared with the communication partner (DeVito, 2008; MTD Training, 2010). On the contrary, the decoding is a process of receiving message or transformation of the information into the thoughts (ibid). According to DeVito (2008) is every participant of communication simultaneously receiver and sender, which means an ability to send and receive information at the same time. Many authors state that decoding is more complicated than coding of information and the role of the speaker is easier than the role of the listener (Vybíral, 2000). Feedback and context are the

last of the stages of communication; the feedback helps you to realise how successful your communication was on context is the situation in which you are using the communication. All the elements/stages mentioned above are forming the communication process.

Each communication process fulfills one of communication functions (less or more apparent) and by the realisation of the function, the communication gets a sense and acquirse significance for humans (Vybíral, 2000). The functions of communication are: to inform, to give instructions, to convince, to negotiate/to agree on something, to present itself and to entertain (Vybíral, 2000). In contrast, Saville-Troike (2003, p. 13) defines communication functions as "expressive (to convey emotions or feelings), directive (requesting or demanding), referential (true or false propositional content), poetic (aesthetic), phatic (empathy and solidarity) and metalinguistic (reference to language itself)".

2.2 Communication in individuals with autism

The research in language and communication of people with autism plays the main role almost at every point in the autism development understanding (Tager-Flusberg, Paul, and Lord in Volkmar, Paul, Klin, et al., 2005). In fact, the early delays or regressions in the speech development are often the first to be concerned by parents as "something not being right" in their child's development (Short and Schopler, 1988). Delays in or lack of language, and characteristics of spoken language are often concerned by parents as the initial sign of the ASD (Fuentes, Bakare Munir, et al. in Rey, 2012). "The exact nature of language impairments in the autism spectrum is still unclear, especially due to the variations of symptoms" (Fernandes, Amato, Molini-Avejonas in Mohammadi, 2011, p. 3).

Up to 80% of cases is the autism are combined with a mental disability, which makes the situation even more complicated and the disability is then multiplied (Slowík, 2010). The communication impairment in the individuals with autism is typical by echolalia (literal repetition of the words or phrases, which have been already spoken by someone else), incorrect use of pronuncation, disproportionately restricted gesture and facial expression, the eye contact is missing, or the speech does not develop at all (Tager-Flusberg, Paul, and Lord in Volkmar, Paul, Klin, et al., 2005; Slowík, 2010). Deficits in the communication in individuals with autism and their combinations are diverse; they vary in the diversity of expression together with an overall level of the communication handicap (Thorová, 2006).

2.2.1 Difficulties in verbal communication in individuals with autism

The speech remains undeveloped especially in cases of low-functioning autism, in whom the intellectual disability appears at the same time (Slowík, 2010). The communication particularities appear mainly in individuals with high-functioning autism (ibid).

All the linguistics disciplines mentioned below are defined above in the nonverbal communication subchapter. The difficulties in verbal communication may be divided into the linguistic disciplines:

Phonetics: expressive language disorder, receptive language disorder, simultaneous expressive and receptive language disorder (the most severe form), and articulation difficulties (Thorová, 2006).

Prosody: usage of prosodic elements in the expressive speech is disturbed (e.g. monotonous expression without emphasis on keywords, without the emotional colouring such as deep feelings, anger); and inability to understand prosodic signals, which means to understand social context and be able to decode the prosodic signals used by other person; both of these areas in children with autism are impaired (ibid).

Syntax: issues with grammar, difficulties in pronounce usage (e.g. instead of the first person "I" usage of the third person he/she); echolalia with a communication meaning; tendency to use the only infinitive as a sentence; lack of vocabulary is the reason for "I do not know" answers; very slow learning of the mother tongue grammar (Bartolucci et al., 1980; Thorová, 2006).

Semantics: difficulties in understanding of the communication importance and its wide range, in more severe type of autism difficulties in understand of "what are the words used for" and in the existence of the general meanings of words (e.g. shoes are not just this pair, but there are different kinds of shoes); echolalia (postponed or immediate); typical sign in a less severe types of autism is a literal understanding of heard information (Thorová, 2006).

Pragmatics: spontaneity and reciprocity in a conversation is inadequate, low or none; not able to understand the importance of the social importance of conversation; inappropriate social questions or vulgarity; difficulties in the conversation process (to start conversation, be fluent in conversation and to end conversation) (Thorová, 2006; Slowík, 2010).

2.2.2 Difficulties in nonverbal communication in individuals with autism

Children with ASD do not use the nonverbal behaviours such as gestures, eye contact, facial expressions and body postures as often as children with typical development (Fuentes,

Bakare Munir, et al. in Rey, 2012). Klin, Lin, Gorrindo et al. (2009) stated that two-year-olds with autism fail in turning towards other's person body motion, and consider this finding one of the most important in recent years. Jones, Carr, and Klin (2008) add that children with autism do not necessarily look in approaching adults' eyes.

Nonverbal communication difficulties can be categorised as follows: gestures, facial expressions, postures, eye contact, kinesics. Together with those mentioned above, there is an additional subsection of problematic behaviour as a way of communication (Thorová, 2006).

Gestures: a declarative pointing [4]is missing in children with autistic spectrum disorders, may occur later; imperative pointing [5] impairment is not that usual in children with autism, may be absent in children with significantly impaired development of communication; lack of "yes/no" head movements, especially lack of "yes" movement; common gestures (e.g. "come here") are not used or less spontaneous (ibid).

Facial expressions: facial expression do not inform about child's emotions, prevail neutral facial expressions or child can have only a few basic facial expressions as an anger, regret or joy; facial expressions may seem functioning but do not reflect the situation; facial expressions may reflect personal emotions but are not used to communicate (Thorová, 2006).

Postures: whilst communicating the body is in an abnormal position, e.g. the child is too close to the communication partner or abnormally close to the partner's face; or in contrast does not even turn body or head to the communication partner (ibid).

Eye contact: may appear too clinging gaze, gaze "through the person" or avoiding the eye contact; we must pay attention to (in)ability of a coordination of the eye contact with pointing, in(ability) to track direction of another person's gaze out of own visual field (Thorová, 2006).

Kinesics: many children with autism express their wishes by other person's hand manipulation, they usually use it as a tool to get something (ibid).

Problematic behaviour: destructive behaviour, aggression or self-injury are used by children with autism because of an inability to communicate, express their basic needs, to get attention, express their feelings, etc. (Straussová and Knotková, 2011; Thorová, 2006). Many researchers noted that the problematic behaviours occurred in individuals with autism are communication-related (Matson, 2009).

[4] The function of the declarative pointing is to make the receiver to pay attention to the specified object (Brinck, 2004).

[5] The function of the imperative pointing is to make the receiver to show some action for the sender (Brinck, 2004).

2.2.3 Person with autism and society barriers

Communication is meeting and sharing between people and we cannot blame only one side/person (in this case with disability/autism) fom unsuccessful communication (Slowík, 2010). In general, people with disabilities are often perceived as less capable and more dependent on others (ibid). These people are then unnecessarily stigmatized by labelling (attached label of a disabled/autistic) (Schulz von Thun, 2005); being labelled can strongly affect relationships of the individual (Watson, 2006). People with disability/autism are often ridiculed, humiliated and viewed with contempt (Slowík, 2010). In many people a direct communication with an individual labelled with a disability/autism, does not lead to adequate and partnership attitudes towards the person with disability; which creates more barriers instead of removing them (ibid).

It is important to provide the person with disability/autism time to response; if the time is not provided, conversation turns into monologue (Slowík, 2010). The attitude of the communication partner should be that he/she wants to create communication with the person with disability/autism, and is willing to do everything to achieve the goal of reciprocated communication (Venglářová and Mahrová, 2006).

In addition to the topic of attitudes towards people with special needs, studies in alternative and augmentative communication reported that males are less positive towards people with disabilities than females (McCarthy and Light, 2005).

To make the communication process between individuals with handicap/autism and society easier, the supportive methods of communication are often used.

2.2.4 Supportive methods of communication for individuals with autism

In this subchapter, you can find an introduction to the basic divisions of the communication supportive methods. In literature, these supportive methods may be found also under the term of interventions or even didactic approaches.

Paul (2008) includes into the didactic approaches: “Applied behaviour analysis, developmentally based and social pragmatic strategies (e.g. TEACCH), Floor time, Relationship development intervention, More than words, Augmentative and alternative communication strategies, and sign language”.

Intervention, also called treatments, for ASD are in Fuentes, Bakare, Munir, et al. (in Rey, 2012) divided into groups based on effectiveness and recommendation. Interventions

grouped as being recommended include: Social skills program, Augmentative and alternative communication systems, TEACCH (Treatment and Education of Autistic and Related Communication Children) program, Cognitive behaviour therapy, Behavioural interventions, etc.

In both of mentioned resources we can see the common method (intervention) and it is the Alternative and augmentative communication which plays a big role in the lives of many people with autism.

3 Alternative and augmentative communication

It may be complicated or even impossible to use speech in communication with individuals with a disability (Slowík, 2010). As mentioned above, people with autism have difficulties in both expressive and receptive components of speech (Thorová, 2006). Alternative and augmentative communication may be used to support receptive as well as to promote expressive communication (Coyne, 2014). To be able to communicate with an individual with autism it is important to find a suitable and reasonable way or method of communication (Slowík, 2010).

Alternative and augmentative communication allows to people with disabilities full-fledged existence in society, including respect for their right to decide, expressing their own ideas, educational needs, etc. (Ludíková, et al., 2005). Iacono, Lyon, West and Johnson (2013) add that when alternative and augmentative communication is used effectively, the improvement in quality of life and feelings of wellbeing will appear.

3.1 Definition of alternative and augmentative communication

"Augmentative or Alternative Communication (AAC) is any device, system, or method that improves the ability of a child with a communication impairment to communicate effectively" (Visvader, 2013, p. 3).

Augmentative communication systems (in Latin "augmentare", i.e. to grow or to expand) are intended to support existing communication capabilities and abilities to enhance quality of speech understanding and to facilitate expression; in contrast, the alternative communication systems are these which are used as substitution of the speech (Janovcová, 2010).

AAC is defined as any "device, either electronic or non-electronic, that is used to transmit or receive messages" (Beukelman, and Mirenda, 2005, p. 4, 5).

AAC systems are used mainly in non-speaking children or as a supportive system in children whose speech development is not sufficient (Thorová, 2006).

"AAC is defined as an area of clinical practice that attempts to compensate (either temporarily or permanently) for the impairment and disability patterns of individuals with severe expressive communication disorders (that is the severely speech-language and writing impaired)" (Lal, 2010, p. 120).

There are many methods under the umbrella term of AAC, but is not true that one method which worked in one specific situation or case, needs to work in another (Visvader, 2013).

3.2 Classification of alternative and augmentative communication

The most used classifications of the AAC is into unaided and aided methods/interventions (Laudová in Škodová, Jedlička, et al., 2003; Visvader, 2013; Coyne, 2014). Janovcová (2010) states that together with unaided and aided interventions, we have a group of methods called "others"; these include e.g. accessories to facilitate computer control.

Some authors might divide AAC into the subgroups by the technology contribution. Visvader (2013) divides AAC into no-tech (i.e. unaided), low-tech, light-tech and high-tech. Description of these terms will be provided in the "Aided methods of AAC (3.4)" subchapter.

3.3 Unaided methods of alternative and augmentative communication

Unaided methods are defined as "systems an individual uses with no additional tools or technology such as motor behaviours, gestures, vocalizations, verbalizations (or verbal approximations), proxemics (approach, avoidance), eye gaze, and facial expressions" (Visvader, 2013, p. 8). They can be used by children who have sufficient motor skills to shape their hands into precise positions (Romski and Sevcik, 2005). Into the unaided methods mostly belong also natural ways of communication, which usually do not need to be learned; especially eye gaze, facial expressions, gestures, YES/NO answers, and communication by action (Šarounová, 2014). Together with these nonverbal mean of natural communication, AAC includes manual signs (Light and Drager, 2009). Unaided methods of the AAC include the usage of nonverbal communication (eye gaze, facial expressions, gestures, visual-motor signs) (Janovcová, 2010).

Romski and Sevcik (2005) include American sign language as a part of unaided methods of AAC and Laudová (in Škodová, Jedlička, 2003) mentions Czech sign language as a part of unaided methods. However, Šarounová (2014) clarifies that supporting methods of communication for people with hearing impairment is considered as an independent discipline, which is not included into the AAC.

3.3.1 Systems based on manual signs usage

This group usually includes systems which use a limited number of symbols (usually 400-600) as a speech support (Šarounová, 2014). Manual sign systems advantages are found mainly in a speed and immediacy of possible usage, but also in the fact that there is no need to use any tools (ibid). The disadvantage of the systems based on manual sigs is that caregivers/staff need constant training in signs; not many people around can sign or understand this type of communication and in addition, many people who need AAC have some degree of physical and/or neurological impairment, which can make difficulties in recognition of signed information (Millar and Scott in Wilson, 1988).

Some children with autism are able to learn a few manual signs; however, only a few children can produce these signs fluently (Thorová, 2006). Symbolism (hidden meaning) of the signs prevents understanding and usage of these interventions (ibid).

Makaton, Signed speech and Anita Portmans's signs are the most used in the Czech Republic (Šarounová, 2014). Laudová (in Škodová, Jedlička, et al., 2003) adds fingerspelling alphabet, Cued speech, Tadoma method and Lorm's alphabet. Last two mentioned methods are used in people with visual impairment (ibid), which means they do not necessarily need to be explained in detail.

Makaton uses signs, symbols and speech, when signs are used together with speech in ordinary spoken order and only keywords in sentence are transmitted into the signs (The Makaton Charity, c2012; Šarounová, 2014). Signs should be accompanied by the appropriate facial expression (Šarounová, 2014).

Signed speech is not natural sign language as it is the one used by people with hearing impairments, it is only support of the speech (Janovcová, 2010). However, the signs are originally coming from the natural sign language, but signing uses the spoken language syntax instead of sign language grammar (Šarounová, 2014; Endelson). This method is not as common in children with autism nowadays as was in past, one possible reason might be an increase of technical communication systems (Endelson).

Anita Portman's signs is system based on similar principles as Makaton and Signed speech; based on usage of signs together with speech (Šarounová, 2010). In individuals with autism it is not often used, generally people with autism have difficulties to understand to manual sings (ibid).

Fingerspelling alphabet represents individual letters by different position of fingers on one or both hands. (Laudová in Škodová, Jedlička, et al. 2003). Usage of two-handed or one-

handed alphabet in other countries depends on preference of usage in each of the native sign language (British-sign.co.uk, c2016).

Cued Speech "is a visual communication system which uses the mouth movements of speech in combination with "cues[6]" to make all the sounds (phonemes) of spoken language look different" (Fleetwood & Metzger, 1995). Cued speech was created to help access the basic properties of spoken languages by using vision, targeted on users who are deaf, hard of hearing or who have language/communication disorders (National Cued Speech Association, c2017).

Some of the authors above have mentioned that manual signs are not the best choice for people with autism, however the research focused on manual signs usage in individuals with autism also state different opinions or clarify the reasons of unsuitability.

Mirenda (2003) consider manual signs as one of the main options, which can be used with individuals with ASD and severe communication impairments. As mentioned above (Thorová, 2006) that the ability to use manual signs vary in individuals, one of the reasons might be that some people with autism experience the motor coordination problems (National Research Council, 2001). "Children with autism who have both good fine motor skills and good verbal imitation skills may be appropriate candidates for total communication approach (manual sign interventions), especially when speech development is a primary goal of intervention" (Mirenda, 2003, p. 209).

3.4 Aided methods of alternative and augmentative communication

Aided methods of AAC are based on the use of extra materials or equipment to make progress in functional communication of an individual (Mirenda, 2003). Aided AAC systems can be simple, e.g. producing a message on paper or selecting a picture from a communication board (Ganz, et al. 2011). The AAC aided methods can be divided into a low-tech and high-tech (Šarounová, 2014; Laudová in Škodová, Jedlička, et al, 2003). Together with low-tech and high-tech methods, Visvader (2013) also describes a group of light-tech AAC. However, the light-tech group of AAC is often no listed and the classification is simplified into low-tech and high-tech methods of the AAC (Cannella-Malone, DeBar and Sigafoos, 2009; van der Meer, Sigafoos, et al., 2011).

[6] Consonant phonemes are distinguished by 8 handshapes, and vowel phonemes by 4 locations near the mouth; a handshape and location used at the same time cue a syllable (for English language) (National Cued Speech Association, c2017).

3.4.1 Low-tech alternative and augmentative communication systems

Low-tech AAC systems typically do not require an electric or battery resource and their usage does not require control training, regular charging, or special reparation; these reasons make the low-tech aids easily affordable (Šarounová, 2014). Low-tech AAC interventions include the use of tools that do not need a power source to be operated (Coyne, 2014). They may be used as a backup to an individual's high-tech AAC method (ibid). "Low-tech systems are nonelectronic but involve materials outside the child's body" (Hanline, Nunes and Worthy, 2007, p. 78).

A frequently used low-tech AAC methods in individuals with autism are Picture Exchange Communication System (PECS), photographs, symbols, written words and communication books (Šarounová, 2014). In the beginning of the communication training, we start with objects or pictograms; otherwise low-tech AAC involves symbols, reading and writing of words, and comprehensive methodology – PECS (Thorová, 2006).

3.4.1.1 Communication boards

The symbols (described below) can be assembled into the communication boards which can have carious forms (e.g. board, book, communication "wallet") and be possibly combined with photos (Šarounová, 2014). They can be used also as an adventure diary or divided into groups (e.g. animals, food) (ibid).

3.4.1.2 Objects

Objects are usually the first choice for an intervention, especially in small children, in individuals with visual impairment and individuals with intellectual disability (Šarounová, 2014). As mentioned above, the objects are used in the beginning of the communication training of children with autism (Thorová, 2006).

We can use objects in these forms: real objects (e.g. toy, which does not symbolise anything else than the precise object), real objects as symbols (e.g. laminated cardboard with picture of food, is used to teach child to exchange for the real object; used in the PECS), parts of the objects (e.g. piece of the puzzle may reference to the whole puzzle), reference objects (e.g. soap as a symbol for bath) and miniatures (miniature for the precise activity or object, e.g. toy in a shape of TV, means watching TV) (Šarounová, 2014).

3.4.1.3 Photos and communication boards with photos

Photos are used especially in young children, but we use this method also in older children or adults, mainly to represent people or places (Šarounová, 2014). The advantage of photos usage is that it is easier to take them with you than to take real objects; in contrast, a disadvantage might be that it takes longer time to make them ready for the communication process (take a photo, print it out) (Bondy and Frost, 2007). However, fast technology development helps caregivers to make picture by their personal mobile phones and print them right after, which reduces the time the process takes.

There are rules for what the photo should look like: white or contrast background, not many distracting additional details, photos describing an activity must be easy to understand (Šarounová, 2014).

Photos can be used independently or placed on the communication boards (ibid). Photos may be used also for creating a daily schedule boards, which helps people with autism to easily orientate their day.

3.4.1.4 Graphic symbols – systems

Symbols are images which are used as a text support; the meaning of the text is with the symbols usage clearer and easier to understand (Widgit software, c2002-2016a). There exist many graphic symbols systems in the world, this list provides a few of the most well-known and the most used by individuals with autism (Šarounová, 2014).

Picture Communication Symbols is considered as a picture symbols system created in the USA and used worldwide; especially for a reason of approachable computer program Boardmaker, which allows user to create his/her own materials with symbols (Šarounová, 2006). Symbols are colourful but there is also a possibility to use them in black and white version (Laudová in Škodová, Jedlička, et al. 2003). "Visual supports, specifically picture communication symbols, are effective in promoting the generalization and maintenance of acquired skills for following verbal directions for young children with autism" (Preis, 2006, p. 206). However, they do not considerably affect gaining of verbal abilities in either quantity or efficacy of learning of person with autism (ibid).

Widgit Symbols are colourful, simply-drawn symbols; each of them illustrates a single idea in a clear and brief way, and cover a range of topics suitable for people of all abilities and ages (Widgit software, c2002-2016b). Some symbols are easily recognisable, others' meanings need to be taught (Šarounová, 2014). They have less pictorial form than previously mentioned Picture Communication Symbols (ibid).

Pictogram Ideogram Communication Symbols; the pictogram is simply a white picture on a black background; especially for pictogram's simplicity (they might be considered by a child as boring), they are not chosen as a first option during the search for an appropriate intervention (Šarounová, 2014). Pictograms are used especially in Scandinavian countries (ibid), e.g. project "Accessibility symbols", placed in Helsinki (Finland) which provides databank of the pictograms. (City of Helsinki, 2016). In addition, pictograms display concrete terms and ideograms abstract (Šarounová, 2014).

Blissymbolics (Bliss system) is a communication system currently composed of over five thousand graphic symbols; each symbol (Bliss-word) consists of one or more Bliss-characters which can be combined and recombined in infinite ways to invent new symbol (Blissymbolics Communication International, c1975-1982-2010). Symbols have simple shapes, mainly so they can be drawn quickly (ibid). Huckvale and Riper (2016) mention Blissymbols as an example of aided AAC used in individuals with autism.

3.4.1.5 Picture Exchange Communication System (Bondy and Frost, 1994)

The Picture Exchange Communication System (PECS) is based on getting a desired item for a given picture (an exchange). By doing so, the child with autism initiates a communicative act for a specific outcome within a social context. This was designed especially for children with autism and other developmental disorders. PECS training consists of 6 stages:

1. Teaching the physically assisted exchange

This stage is simply about searching for motivational object, which will be used in the first part of PECS training of the exchange (picture for the real object). The most important part is that the trainer verbally avoids to mention to release or exchange the picture for the wanted object.

2. Expanding spontaneity

Stage 2 is mainly focused on practicing the gained ability to exchange the picture for the desired item, but all is happening in gradually increasing distance. Desired items are placed in child's surroundings, they are available, but not easily accessible. It is important, that the trainer observes and interacts carefully, so the child's desires will be fulfilled.

3. Simultaneous discrimination of pictures

During this phase, the child is learning to choose between two or more pictures on the communication board. The key point is that one picture includes the wanted object and on the other is nonpreferred or neutral item. This process is repeated as many times as it is necessary

to achieve 80% of correct responses. When the individual can reliably choose from two or three pictures on the board, we start with "opposite approach" practicing.

4. Building sentence structure

At this stage, the person's communication consists of 12 to 20 pictures, which are reduced into a smaller size and organized into communication books or on the board. Pictures are divided into broader categories, e.g. food, toys, activities, personal care needs and the others. During this phase, the person is taught to use the phrase "I want _____". Teaching of this request may help to begin an actual speaking process at some point.

5. Responding to "What do you want?"

In previous stages child was communicating spontaneously (whenever she/he wanted), but now it is going to change into the child responding to selected verbal prompts. During this stage the strip "I want ____" is used, which is placed on the board. The wanted item is nearby, the trainer points on the sentence strip "I want _____" and asks "What do you want?". The goal of this stage is that the child will be able to answer the question mentioned above at the same time as the wanted object is not present in his/her surrounding environment.

6. Commenting in response to a question

At this stage, the child can use the requesting function in many situations with a variety of people. The child is learning to give labels or names to the objects in this stage. The training starts with objects which are not the child's most favourite, but at the same time the child knows how to make a request for them. Importantly, that the child will not get the mentioned object as a reward, due to the possibility to make him confused and not learn the right request. Training continues from the child's least to most preferred object. This is used to prevent possible affect for not getting the seen item.

The speed of obtaining functional and spontaneous communication skills is due to PECS intervention fast. After a few months of PECS training, many young children with autism were able to initiate communication without any official speech training.

There are a few improvements appearing during the PECS training – verbal communication and social communicative behaviour and problem behaviour improvement (Charlop-Christie, et al. 2002).

3.4.2 High-tech alternative and augmentative communication systems

High-tech AAC systems includes speech-generating devices (dedicated aids – single-purpose communication devices), computers and tablets (Šarounová, 2014). High-tech

systems consist of electronic communication boards, and/or computerised speech synthesizers (Hanline, Nunes and Worthy, 2007). The basic features for the high-tech aids are that they have voice output, display of individual elements of communication, display of the final version of message, possibility to play the message by pressing button or external switch (devices used to make a computer program active) (Šarounová, 2014; Frailey, 2005). Electronic communication boards display messages which may consist of photos, line drawings, words, phrases or letters (Hinaline, Nunes and Worthy, 2007). High-tech AAC systems are usually divided into two groups, Speech-generating devices (SGD), and Computers and tablets (Šarounová, 2014), and are further divided into subsections.

Speech-generating devices (= voice output communication aid) "is a portable electronic device, when activated by the individual intending to communicate, will produce a previously recorded or digitised spoken message" (van der Meer and Rispoli, 2010, p. 277). Based on the photos, symbols or written words placed on the aid; message can be recorded and then played by the button or external switch press (Šarounová, 2014). These aids may be divided into aid with static (the number of frames is determined and if needed the symbols must be changed manually) and dynamic display (possibility to programme numbers of frames, access to the next levels and a change of symbols) (Mirenda, 2003; Šarounová, 2014). Another classification is based on usage of the voice output in a form of digitalised voice (recorded by microphone) or synthetic voice (aid reads the message by synthetic voice) (Laudová in Škodová, Jedlička, et al. 2003).

The functions of SGD are "requesting attention, food or objects, social or having conversation, naming items, receptive (e.g. answering questions)" (van der Meer and Rispoli, 2010).

The effectiveness of speech-generating devices, together with added communication interventions might be an explanation for the ongoing dominance of the SGD over the modern high-tech devices as e.g. tablets (van der Meer and Rispoli, 2010; Still, et al. 2014).

Although there are numbers of speech-generating devices, there is not enough space to describe all of them, nevertheless a few of them are described below.

One button, Single message device is the easiest version of SGD in which one message can be recorded (Šarounová, 2014). Even though the communication is not developed too much, it may be used in the beginnings of AAC training for young children or children with intellectual disability or visual impairment (Šarounová, 2014; School health).

Picture communicators are devices with more than one button. The most common are devices called GoTalk, which is available with four, nine, twenty or thirty-two frames/buttons

and each button has capacity for 4-5 records (Šarounová, 2014). Aid has static display which means there is a need for symbol cards changing (ibid).

Devices with dynamic display are often offered in a form of briefcase, are portable and have the dynamic display, are resistant to dirt and almost unbreakable; some of them have a camera, Bluetooth connection and even may control the environment (e.g. open the door) (Šarounová, 2014). In some of these devices, there is a possibility for USB connection, consists of media player and port for computer access (Gates, 2012).

Computers and tablets play big role in lives of many people around the world nowadays. Computers have been used in AAC for many years, first the theory suggest using laptop as a portable aid for generation of speech (as it has battery and is portable), but the laptop's readiness is a bit problematic and not fast (Šarounová, 2014). These devices are used mainly at home or at school or other institutions. Based on this argument, it might be stated that the usage of tablets may offer users to move and use high-tech communication aid at the same time.

Computers usage may be supported by alternative control systems as is for example touch screen, large keyboard, special computer mouse, adapters and switches and head computer control (Šarounová, 2014). Individuals with autism may find some of them very useful, e.g. touchscreen (difficulties in mouse manipulations), trackballs (rolling ball is used to move the cursor on the screen and can provide greater control and more accuracy), large keyboards (good for individuals with limited motor skills), etc. (Even Grounds, 2010).

Software used in AAC may be divided into communication software (e.g. Boardmaker, Symwriter, Altík, Grid 2), software facilitating physical access (e.g. Dwell Clicker) and educational software (child programmes made by Petit, Discrete Trial Trainer) (Šarounová, 2014; Acceleration Educational Software, 2011). Programmes Boradmaker, Smywriter and Altík are used mainly for creating and printing of communication boards and symbols and programme Grid 2 provides communication through the computer/laptop (Šarounová, 2014).

In contrast to the software, which is needed to be downloaded; there is a website which provides reciprocal communication training through an online game, called Autism Unlocked (Autism Unlocked, c2017; Moroney, 2013)

Tablets may be divided into tablets with iOS operation system (iPad), Android operation system and Windows operation system (Šarounová, 2014). In a study reviewing 15 studies was proved that communication skills of people with autism and developmental disorders can be effectively increased by a usage of tablet-based devices, especially the iOS devices (Kagohara, et al. 2013).

iOS is well known for providing the best background for the people with special needs. “iPads are more effective than other tablet-based computers” (Alzrayer, Banda and Koul, 2014, p. 190). In addition, systematic instructions of the iOS tablet-based devices are effective in AAK interventions teaching (ibid).

There are various apps for individuals with autism to use; among apps which provides full AAC belong Prolonguo2go, MyTalk, MyChoiceBoard, PicCalendar, etc. (Shane, 2011). The most important

Android operation system is placed in various brands of tablets/phones, and compared to the iOS devices, tablets with Android operation system are in generally more affordable for parent of children with autism or person with autism himself/herself (Šarounová, 2014). Unfortunately, Android has not reached the same level as iOS yet; however, the numbers of AAC apps in Android are increasing (Šarounová, 2014). In Android’s Google Play store, may be found apps as AAC speech communicator, AAC Autism myVoiceCommunicator, TalkTablet – Autism Speech AAC, Řečový asistent AAC (in Czech), etc.

Windows tablets have a big advantage because of the possibility to use all alternative supportive systems, which are used in computers with Windows operating system, and the same applies to the software (Šarounová, 2014).

3.5 Unaided methods vs. Aided methods of alternative and augmentative communication

Functional communication in people with autism may be supported with any of the mentioned AAC systems, based on their ability to learn to use a variety of ACC systems (van der Meer, Sigafoos, et al., 2011).

PECS requires more effort to place or exchange the communication cards than touch iPad display, however PECS may provide more opportunity to gain the communication partner’s attention and usage of eye contact (Flores, et al. 2012).

Researches comparing speech-generating devices and manual signing are rare; however, van der Meer, et al. (2012) stated that there is a preference for usage of SGDs over PECS or manual signs systems in individuals with developmental disorders, and suggest that there may not be one singe method of AAC which is considered the best over the others (for children with developmental disorders). Choice of the AAC method is based on individual features of each person (abilities, needs and preferences) (Sigafoos and Drasgow, 2001).

Another research is focused on a comparison of attitudes of typical development children (9-12 years) towards children who are using AAC, precisely comparison between iPad with Prologuo2go app and low-tech communication boards usage (Dada, Horn, Samuels, and Schlosser, 2016). Children felt more positive towards the iPad than towards the communication board (ibid).

3.6 Alternative and augmentative communication effects on person with autism

The AAC has a positive effect on an individual with autism in areas of the development of language and communication, and social behaviour (Lal, 2010). Development of communication in individuals who have difficulties in expressive and receptive language, plays an important role in social and educational development, and in future life quality (ibid).

ACC usage has a positive impact on a production of speech, and this is supported by many studies in recent years (Šarounová, 2014). Usage of symbolic gestures does not prevent the speech development and has positive rather than negative effect on the speech (Goodwyn, Acredolo and Brown, 2000). Another Schlosser's and Wendt's (2008) study provides results about a light improvement in speech production whilst using the AAC interactions.

In conclusion, it is important to remember that we should put more importance into people and recognising their communication needs than into the AAC as a field and its technology (Light and McNaughton, 2013).

4 Public awareness

Public awareness can be defined as a level of public's understanding about some issue's importance and implications (UN WOMEN, c2012). Dictionary defines awareness as a "the state or condition of being aware; having knowledge; consciousness" (Dictionary.com, c2017).

Public awareness raising means explaining of the issues and dissemination of knowledge to the general public, a based on these people are making their own conclusions (UN WOMEN, c2012). High awareness is when people put a great importance on an issue and low awareness occurs when big part of population do not care or know about the issue (ibid).

There may be different ways how to raise an awareness about a specific issue. In the case of autism, there is the Autism Awareness day (more in the chapter 5.1). Another mostly used ways how to raise the autism awareness are for example, online (sharing of stories and pictures, watching videos or reading articles), TV and newspapers, and then personal experience which is probably the most intensive and effective way how to raise people awareness about autism.

5 Public awareness about the usage possibilities of alternative and augmentative communication by people with autism, comparative study between the Czech Republic and Finland

This thesis compares results of a questionnaire created especially for this purpose, focused on the public awareness about the topic of usage possibilities of AAC by people with autism between the Czech Republic and Finland. First, there is described the current state of problematic from the international point of view, then current state in the Czech Republic and Finland. Furthermore, the main goal and partial goals are stated, followed by the subchapter about thesis methodology (includes hypotheses, method, and questions). The thesis' results are described in the next chapter, followed by discussion. In the end, there is a conclusion on the research stated.

5.1 Current state of the topic of autism and AAC in the Czech Republic, Finland, and other countries

Public awareness about autism all around the world is every year increased by the World Autism Awareness Day which belongs to the April 2nd and is its tenth anniversary this year (2017) (Autism Speaks, [2017]). Organisation all around the world celebrate this day by running an awareness-raising events and unique fundraising (ibid).

International month for the AAC awareness is celebrated each October around the world (International Society for Augmentative and Alternative Communication [2016]). This month celebration was established in October 2007 by International Society for Augmentative and Alternative Communication and the main purpose is to raise awareness about this topic and to inform the public about variety of systems which may be used by people with communication difficulties (ibid).

Despite autism awareness has been rising, there are big differences between each countries' awareness and the main reason might be that some of them, e.g. Russia accepted the autism diagnose less than a decade ago (Jevtic, 2015).

5.1.1 Awareness in the Czech Republic

The awareness about the topic of autism in the Czech Republic is in comparison with other types of disabilities a relative newcomer, especially in contrast with Western countries (Autismus bez cenzury, 2016). People should realise that gnorance brings prejudices,

rejection, painful humiliation and even exclusion of a person with autism; families experience reluctance of the authorities, inadequate health and social care, and social isolation (ibid).

NAUTIS (earlier APLA) is an organisation which provides complex services for people with ASD and their families. One of the main points of their "mission" is a help to increase awareness and enlightenment of professionals and the general public (APLA, c2011). A government office of the Czech Republic (Úřad Vlády ČR) provides regular support to NAUTIS to raise awareness about the topic of ASD among the general public by the financial contribution for a publication of the organisation's newsletters.

In the Czech Republic exist many organisations which are helping people with autism, e.g. Jdeme Autistům Naproti (established by parents of a girl with autism) and Mikasa, z.s. (organize campaigns, workshops, and conferences). Many of the organisations cooperate with each other, e.g. above mentioned Mikasa, z.s. runs this year (2017) awareness campaign together with Autismus bez cenzury and Alfi (Autismus bez cenzury, [2017]).

Fortunately, the awareness about the topic of ASD has increased since the 90s, however, the AAC is not propagated as much as the topic of autism and at the same time there is only one organisation which is fully focused only on the topic of AAC in the Czech Republic, and it is called Sdružení pro alternativní a augumentativní komunikaci. Other organisations which might provide more information about the AAC are early care services (služby rané péče). Their main activity is to give a support to children with disabilities and their families.

In the Czech Republic, there is not even a statistically monitored incidence of autism (Autismus bez cenzury, 2016). Based on this fact, there were not found any collected statistic data about the awareness of autism and AAC.

5.1.2 Awareness in Finland

In comparison to the Czech Republic has Finland long tradition in the field of special education, integration, and inclusion (Kivirauma, Klemelä, Rinne, 2006). And as in education, as well as in the whole society, equality is considered as a core value in Finland (the University of Jyväskylä, last modified 2017-04-02). Compared to the Czech Republic, there are researches which provide the statistics of the autism incidence, e.g. Hinkka-Yli-Salomäki (2013).

Based on the facts mentioned above, personal experiences and historical fact about the beginnings of awareness in the Czech Republic mentioned in the subchapter above, the author assumes that awareness about the topic of autism is probably higher than in the Czech

Republic. One big evidence might be also an entering of the Finnish punk band – Pertti Kurikan Nimipäivät into Eurovision Finals (2015), which was according to a personal resource with a few exceptions (as always) supported by the whole society (Autism Speaks, 2015).

The main organisation for ASD functioning in Finland is The Finnish Association for Autism and Asperger's Syndrome (Autismi- ja Aspergerliitto ry). The organisation organises many invents all around the Finland to raise the awareness about this topic, e.g. Winter days or Autistic Pride Day (June 18th), etc. (Autismi- ja Aspergerliitto ry, 2016b). In addition, "The Finnish Association for Autism and Asperger's Syndrome publishes the Autismi magazine, issued four times per year, and the online magazine; the Association produces bulletins, guides, leaflets, and reports for the field of autism" (ibid). Recently, they published a brochure "One in a Hundred is on the Autism Spectrum" which describes the ASD in generally, together with all areas of difficulties and communication possibilities (Autismi- ja Aspergerliitto ry, 2016a). The mentioning of the area of supports for communication together with the way how to communicate with a person with autism might be considered as a big help for the awareness increasing about the topic of ASD and AAC.

There were not found any statistic data about public awareness for autism and AAC topic, however, this conclusion might be incorrect for a reason of language barrier during the information search.

5.2 Methodology

As a first step for an empirical part of the thesis were goals creation, followed by stating of hypotheses and based on these mentioned, a questionnaire was created.

5.2.1 Goals and hypotheses

The main goal of the thesis is to determine, if there exist differences between general public awareness in the Czech Republic and Finland, about the topic of AAC usage possibilities in individuals with autism, and to compare the potential differences and investigate which potential factors might influence a level of the awareness in each country.

The partial goals of the thesis are:

1. To determine the overall view of the respondents' awareness about autism.
2. To investigate the overall view of the respondents' awareness about AAC and their willingness to use these systems.

3. To investigate respondents' opinions about the awareness in their country and to determine preferred and possibly affecting factors for increasing personal awareness about the questionnaire topic.
4. To compare the collected data and state the differences between the countries' awareness

The hypotheses were created based on the main and partial goals. These four hypotheses (shortly H1-H4) were stated:

H1: If there will be any difference between self-evaluated awareness about autism and self-evaluated awareness about how to communicate with a person with autism who does not use speech, then the collected data about TV and newspaper media will state similar differences.

H2: If there will be more Finnish than Czech respondents who had a person with autism as a classmate or visited the same school, then the general public self-evaluated awareness will be higher than in the Czech Republic.

H3: If there will be any preferred resources for personal awareness raising, then they will be the ones who do not feel like time-consuming and do not require any additional efforts.

H4: If there will be any difference between experienced nonverbal communication with a stranger and protentional verbal communication with a person with autism, then the amount of willingness to communicate to a person with speech difficulties and autism will be visible and can be compared between the Czech Republic and Finland.

5.2.2 Questionnaire survey and its battery of questions

Questionnaire survey can measure sociological phenomena, and provide their analysis (Giddens, 2013). A large amount of data may be collected and results applied to a wider range of people (ibid).

The method of questionnaire survey is a system of pre-prepared and carefully formulated questions that are thoughtfully sorted into a written structure (Chráska, 2007). A good questionnaire is characteristics by its validity, determines exactly the thing what should be determined and the research purpose (ibid).

The questionnaire as a method of the empirical part of the thesis was firstly used in a little pre-survey of ten people who made some comments and suggestions and based on them, the questionnaire was edited and real survey started. The questionnaire survey was placed online on the website www.survio.com, which is a convenient base for the online questionnaire and is also a fast way how to get enough responses to run a thesis' research.

The newly created questionnaire was used and a subsequent by data collection for getting actual and new information about the public awareness of the AAC usage by people with autism. As the main goal is to compare collected data, a questionnaire was creating in the Czech and English language. In this survey were use three open questions (respondent write own sentence), five half-open questions (with option "other" which gives a space for respondent's own expression) of which two were at the same time multiple choice questions (more than one option may be chosen), twelve closed questions (respondent choose one question from limited number of them), and two scale questions (respondent choose one option on the scale base on own feeling). All together were created twenty-one questions based on the goals of the thesis and hypotheses.

A short introduction was placed at the beginning of the questionnaire consists of author's name, studying place and university, and with a statement which guaranteeing an anonymity and own use.

The first question was used to determine the correct sample of the respondents who have lived in Finland and the Czech Republic long enough, to provide data which can be considered as a data of the whole society.

Questions number 2, 3 and 4 were created to find out public's basic knowledge about autism and if they experienced a personal meeting with someone who has autism.

Group of questions number 5, 6, 7, 8 and 9 were focused on basic knowledge about communication systems used by people with autism; if they already have got experiences in communication with person with autism; and if they would be willing to use selected systems of communication in protentional meeting with a person who uses these systems.

Questions number 10, 11 and 12 were asking about potential author's idea for QR code communication aid which might improve the accessibility of information about the precise individual's communication system. These questions were created mainly for future research and possible development of mentioned aid.

A group of questions number 13, 14, 15, 16, 17 and 18 were focused on obtaining information about the public and individuals' awareness, public awareness consequence for the inclusion and potential factors of awareness.

Last three questions were created to determine age, education and a place of residence.

5.2.3 Characteristics of examined sample

The questionnaire survey was conducted from December 2016 until the end of March 2017. The distribution itself lasted one month and took a place during the March 2017. As mentioned above, the questionnaires were provided online and both surveys lasted the same time. Together were collected 617 filled in questionnaires, 305 in the Czech Republic and 310 in Finland. As the numbers of responses were in the both countries almost equal the survey had a good base for a comparison.

There were 8 responses eliminated in the Czech Republic due to respondents' length of stay or living in another country, which means a final sample of **297** respondents. In Finland, there was eliminated the same number of responses due to the same reason as in a case of the Czech Republic, and the final number of respondents was **302**.

Unfortunately, the online surveys might have a lower rate of response than personal questionnaire surveys, and this fact appeared also in this one. The rate of response was altogether 73% out of the original sample. Mareš (2007) stated that the response rate for a sample bigger than 100 respondents must be the lowest 50%, but the recommended rate of responses is 75% and more to make the collected data reliable.

6 Results analysis and interpretation

Collected survey data were analysed and interpreted in overview tables and graphs and placed together with the corresponding questions (questionnaire may be found as an annex). Each table and graph are named and created precisely for each individual question.

6.1 Personal information type of question

This subchapter includes questions which were formed to get a personal information needed for better interpretation of the results, as gender, age, place of residence and length of stay.

The first question was asking about the length of stay in the Czech Republic/Finland, to eliminate people who were not born in the Czech Republic or Finland or people who were living in these countries for less than 10 years. This question was mainly created for the English version of the questionnaire in Finland to determine the needed sample of respondents. The same question was placed in the Czech version mainly to remain the commonality of the questionnaire. This elimination question placed in the beginning of questionnaire might be one of the factors which negatively affected the rate of response and should have been placed together with the other personal information questions in the end of the survey.

Length of the stay	Absolute frequency	Relative frequency
I was born here	287	94,0%
More than 10 years	10	3,3%
Less than 10 years	6	2,0%
I do not live in the Czech Republic	2	0,7%
Total	**305**	**100%**

Table 1 *- Length of the stay in the Czech Republic*

This question was used to eliminate respondents living in the Czech Republic less than 10 years or not living there at all, in total there were 8 (2,7%) respondents eliminated from this survey and the tables and graphs show the statistics only for this sample of 297 (97,3%) people.

Answers options	Absolute frequency	Relative frequency
I was born here.	291	93,9%
More than 10 years.	11	3,5%
Less than 10 years	4	1,3%
I do not live in the Finland	4	1,3%
Total	**310**	**100%**

Table 2 *- Length of the stay in Finland*

As in the Czech questionnaire, this question was used for the elimination of respondents living less than 10 years in there or not living there at all. After elimination of 8 (2,6%). respondents were the final number of participants 302 (97,4%), and this sample is used in the other all tables and graphs.

The equal number of respondents made the comparison between both countries easier and more graphically visible which is considered as a positive and important fact for the empirical part of the thesis.

The nineteenth question was created to determine information about the gender of respondents. Unusually, the author chose a personally suitable option of three responses: female, male and other to prevent a discrimination of individuals who do not feel to be included in either of the common options (female and male). This option was chosen mainly for the questionnaire in Finland, based on the author's belief that there may appear this specific group of people. Commonality was maintained in both questionnaire and this question was placed also into the Czech version.

Gender	Absolute frequency	Relative frequency
Female	252	84,8%
Male	45	15,2%
Other	0	0%
Total	**297**	**100%**

Table 3 *– Gender representation, The Czech Republic*

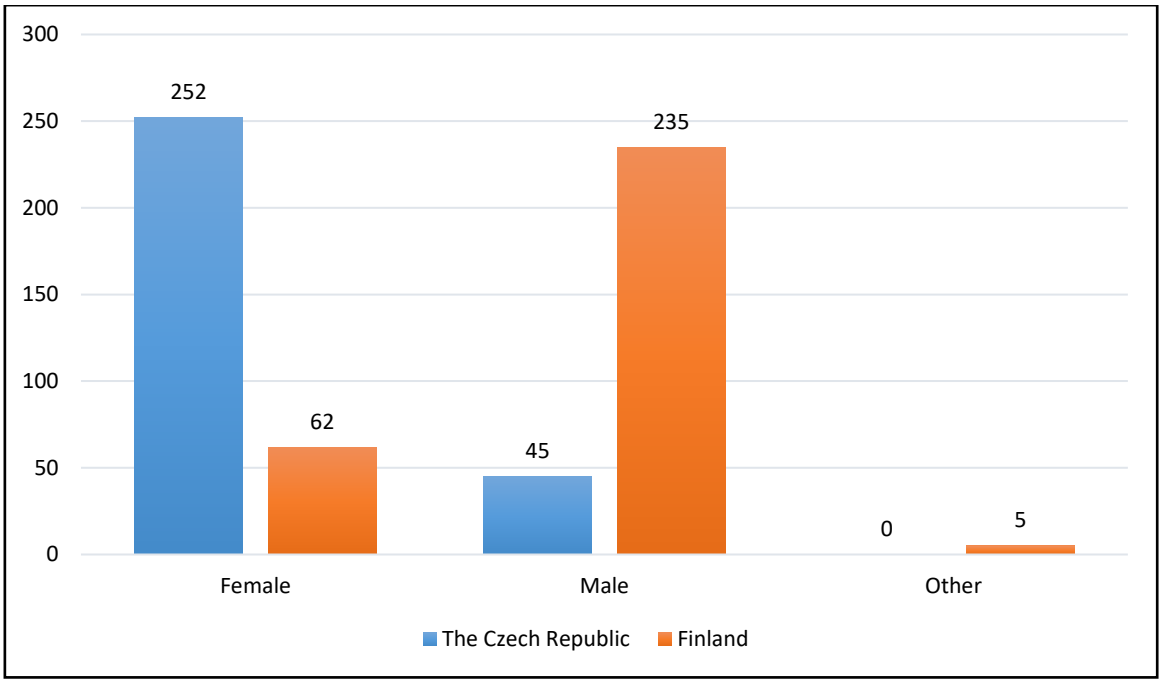
The gender in the Czech Republic was represented by 252 females (84,8%) and 45 males (15,2%). There was no person who would feel to be included in the "other" group. There might be a few factors which might have affected the females' dominance (84,8%) dominance. First, most of the personally asked respondents were females. Second, females might be in generally more interested in the topic of disabilities or specifically autism. And third, females tend to be more sensitive to the topics of disability and that might have affected their interest into the questionnaire. The author asked personally a few males and in generally their attitude about filling in the questionnaire about the topic of autism and communication was not that positive and there were afraid of their possible lack of knowledge, even though the questionnaire survey was anonymous. In addition, a request for filling in the questionnaire was made personally and through sharing on a social network Facebook.

Gender	Absolute frequency	Relative frequency
Female	62	20,5%
Male	235	77,8%
Other	5	1,7%
Total	**302**	**100%**

Table 4 *– Gender representation - Finland*

The gender in Finland was represented by 62 females (20,5%), 235 males (77,8%) and 5 people (1,7%) who did not feel to fit into the usually used options "female" and "male". The biggest part of the sample was represented by males (77,8%), which was considered as quite surprising. The male dominance might be caused by the questionnaire placement on a social network www.reddit.com. The highest increase of the filled in questionnaires appeared after a sharing on this page, we may state that a high number of users during the March 2017 in Finland was represented by the males. Together with the social network a personal request were used to increase the number of respondents.

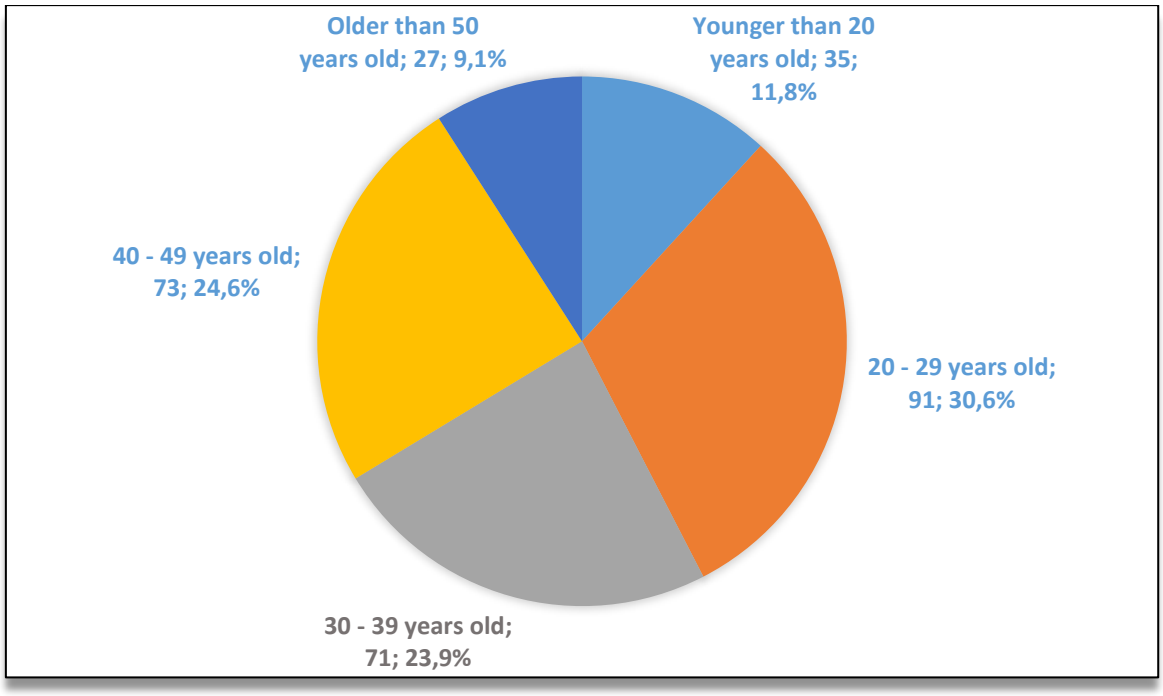
A graph including a comparison between genders appeared in both countries, is placed below.



Graph 1 *- Comparison of the Czech and Finnish gender representation*

In conclusion, the gender representation was nearly opposite in the Czech Republic than in Finland. Most of the respondents in the Czech Republic were females (252; 84,8%) and in contrast, most of the respondents in Finland were males (235; 77,8%). This fact may be used in the interpretations of the other, specific questions and may play a big role in the results' differences. Males (45; 20,5%) were least represented gender in the Czech Republic, in contrast, the second least represented gender in Finland were females (62; 15,2%), followed by a few people (5; 1,7%) in a no specified gender option "other".

The question number twenty was created to discriminate the age of respondents. There were five options to choose from: younger than 20 years old, 20 - 29 years old, 30 - 39 years old, 40 - 49 years old, and older than 50 years old. The options were created to determine specific data about each of the age group.

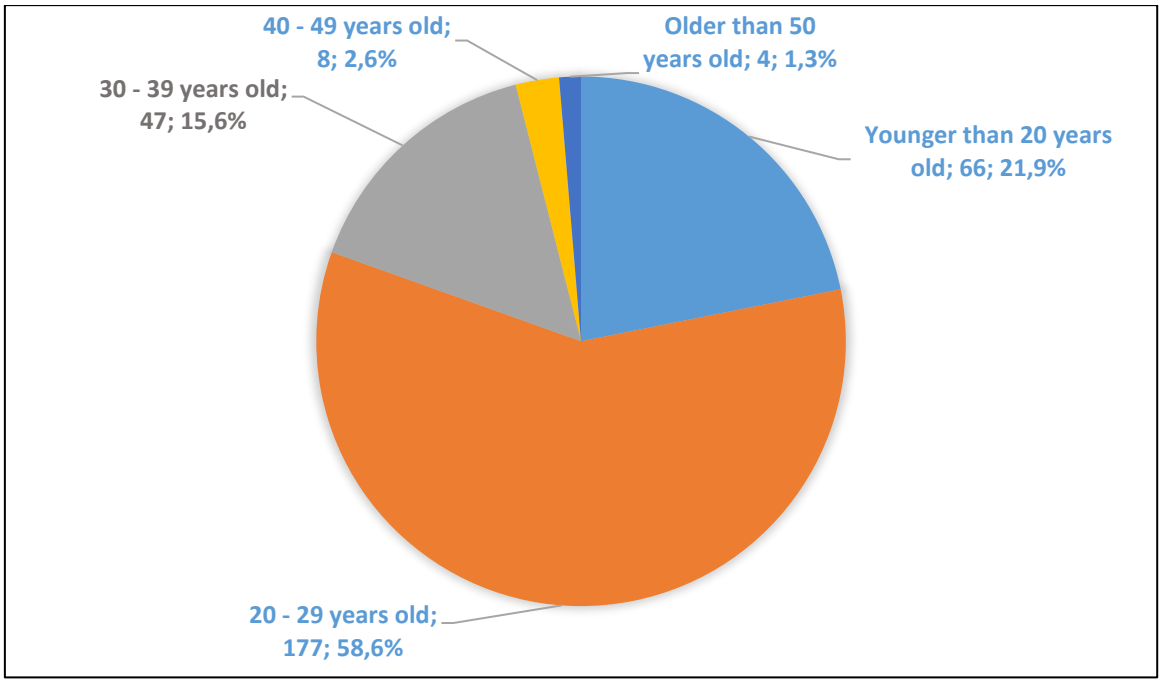


Graph 2 *- Age representation, the Czech Republic*

Age categories were quite equally distributed in the Czech Republic. The most represented age category was "20-29 years old" (91; 31%), followed by group "40-49 years old" (73; 24%). There was a difference of one person between the previous age group and the next category "30-39 years old (71; 24%). The two least represented groups were people "younger than 20 years old" (35; 12%) and people "older than 50 years old" (27; 9%).

The highest representation of the "20-29 years old" (91; 31%) may be caused by the closeness to the author's age and at the same time, this group may use the social networks the most. In addition, the three most represented categories (20-29 years old, 40-49 years old and 30-39 years old people) were the most often personally requested to fill in the questionnaire.

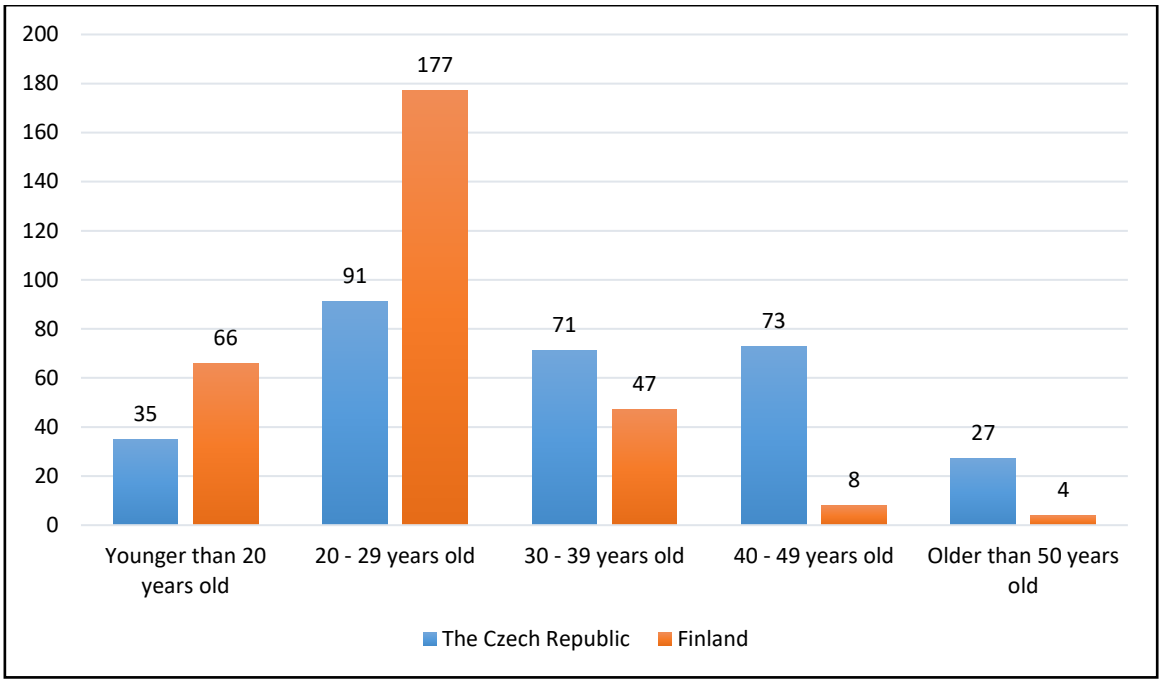
The lower number of people at the category "younger than 20 years old" (35, 12%) might be caused by non-manifested interest in such a topic as the autism and communication are. In contrast to, the lowest number of the group of people "older than 50 years old" (27; 9%) is probably not caused by non-manifested interest, but by a fact that there are not that many people older than 50 who would use social networks or many of them do not need to have even computer or another device on which the questionnaire might be viewed.



Graph 3 *– Age representation, Finland*

The age representation in Finland was not that equally distributed as in the Czech Republic. The most represented category was "20-29 years old" (177; 59%) and this fact was probably caused by the high representation of people of that age at the social network Reddit (mentioned above in the interpretation of the question nineteen). Second most represented was a group of "younger than 20 years old" (66; 22%) which might affect the most open questions results, especially that there might be found some immature expressions. The third most represented category was "30-39 years old" (47; 15%) and last two less represented groups were "40-49 years old" (8; 3%) and "older than 50 years old" (4; 1%). These low numbers of the last two categories are probably affect by the fact that people that age was not as active as younger people on the social networks and the same fact as in the Czech Republic that people older than 50 years might not use social networks at all or even do not need to have a computer access.

Both graphs included age representation and to be able to visually compare the age representations between both countries a graph which compares these data was created and is available below.



Graph 4 – *Comparison of the age representation between the Czech Republic and Finland*

The comparison between the age representation determines that altogether the most represented category in both countries was the category of people "20-29 years old", 91 (31%) respondents in the Czech Republic and 177 (59%) in Finland. Previously mentioned activity on the social networks is probably the main explanation for this fact.

The group of people "younger than 20 years old" included 35 respondents (12%) in the Czech Republic and 66 (22%) in Finland. This might be caused by a lower interest, in a topic such autism and communication is, of people that age in the Czech Republic than in Finland. Another reason might be that young people in Finland are more interested in filling in the surveys than people that age in the Czech Republic.

The category "30-39 years old" did not determine as large differences in the number of people as the other groups did.

The comparison of the age groups of "40-49 years old people" provide a big difference in the number of people represented in each of the countries. This was the second most represented age category (71; 24%) in the Czech Republic and in contrast, in Finland, it was the second less represented age category. This big difference between both countries might be affected by a few factors. First, many people included in this group were asked personally in the Czech Republic and this fact could not happen in the Finland for a reason of less number of author's acquaintances. And second, people in the Czech Republic were more active on the social networks than people that age in Finland.

The last category of people "older than 50 years old" stated another big difference between the number of people represented in the Czech Republic (27;9%) and in Finland (4; 1%). This fact might be, as previously mentioned, caused by almost no activity of people this age on the social networks or no computer access.

In generally, age categories were more equally disturbed in the Czech Republic. In contrast, in Finland was showed a predominance of people of the age 20-29. This fact will be considered in the interpretations of the collected data for individual questions.

The twenty-first question was asking about a highest completed education. The options varied based on the structure of the education system in each country. There will be provided tables for the responses collected in the Czech Republic and Finland and afterward similar education degrees will be compared.

Highest completed education	Absolute frequency	Relative frequency
Základní vzdělání (basic education)	34	11,4%
Středoškolské vzdělání s výučním listem (vocational education)	32	10,8%
Středoškolské vzdělání s maturitou (high school education)	123	41,4%
Vyšší odborné vzdělání (higher professional school education)	21	7,1%
Vysokoškolské vzdělání (university degree)	77	25,9%
Speciálně pedagogické vzdělání (special education degree)	10	3,4%
Total	**297**	**100%**

Table 5 *– Highest completed education, the Czech Republic*

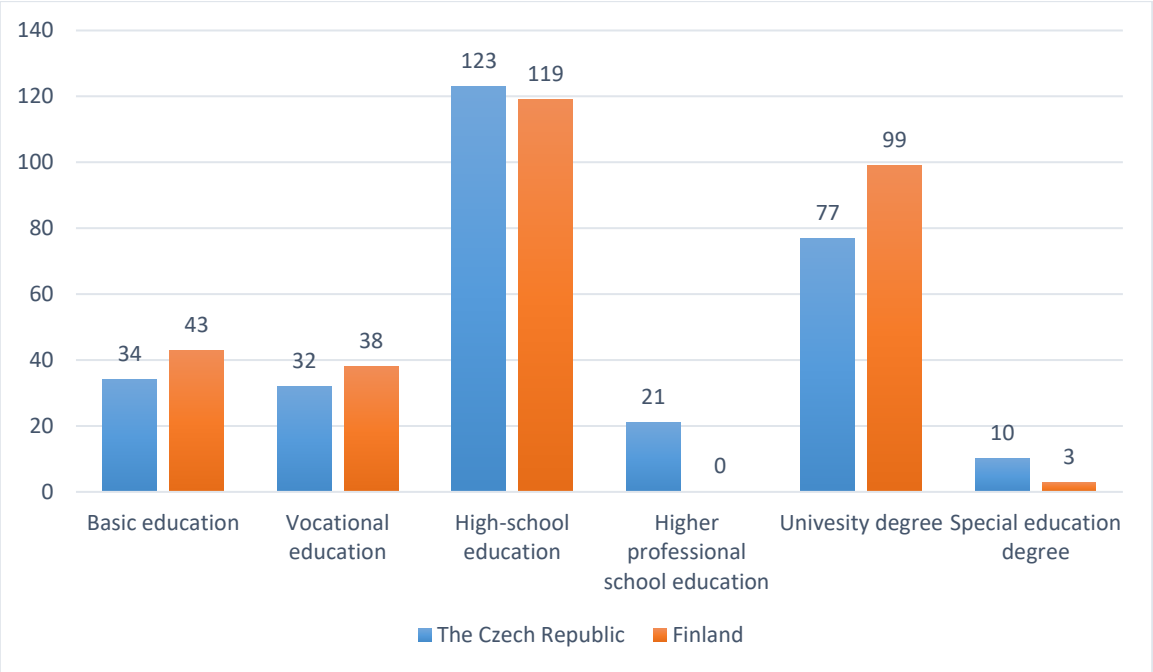
In the table above (Table 5) were listed the possible educational degree in the Czech Republic together with the absolute and relative frequency of responses. The most represented category was Středoškolské vzdělání s maturitou (high school education) (123; 41,4%) which could be considered as an average education in the sample of Czech people. The second highest number of people (77; 25,9%) had a university degree (Vysokoškolské vzdělání).

These two groups confirm that the whole sample is in generally well educated. Základní vzdělání (basic education) was represented by 34 people (11,4%) followed by 32 people (10,8%) who have achieved a vocational education level. Vyšší odborné vzdělání (higher professional degree), this degree is not as preferred as an actual university degree, so this might be a reason for a quite low representation of respondents (21; 7,1%) in this category. The last, least represented was a special-education degree (10; 3,4%). As there were many people who absolved a school practice where they met a person with autism, we might conclude that people who chose this option whether studied something similar to high school but did not get an actual degree, they have a university degree but not in this field or are still studying.

Highest completed education	**Absolute frequency**	**Relative frequency**
Perusopetus (basic education)	43	14,2%
Lukiokoulus (high school education)	119	39,4%
Ammatillinen koulutus (vocational education)	38	12,6%
Ammattikorkeakoulu/Yliopisto (university degree)	99	32,8%
Erityisopetuksen tutkinto (special education degree)	3	1,0%
Total	297	100%

Table 6 *– Highest completed education, Finland*

The most represented educational level in Finland was Lukiokoulutus (high school education) (199; 39,4%), followed by Ammattikorkeakoulu/Yliopisto (university degree) (99; 32,8%). The high number of respondents was represented in a category Perusopetus (basic education) (43; 14,2%). However, this was almost foretold by the "age representation question" when people under the age 20 were highly represented (66; 21,9%). There were 38 people (12,6%) who completed Ammatillinen koulutus (vocational education) as their highest education. At last, the lowest number of respondents (3; 1,0%) was represented in a category Erityisopetuksen tutkinto (special education degree).



Graph 5 – *Highest completed education, comparison between the Czech Republic and Finland*

The graph above (Graph 5) is showing the data collected from the Czech Republic and Finland about the highest completed education of respondents.

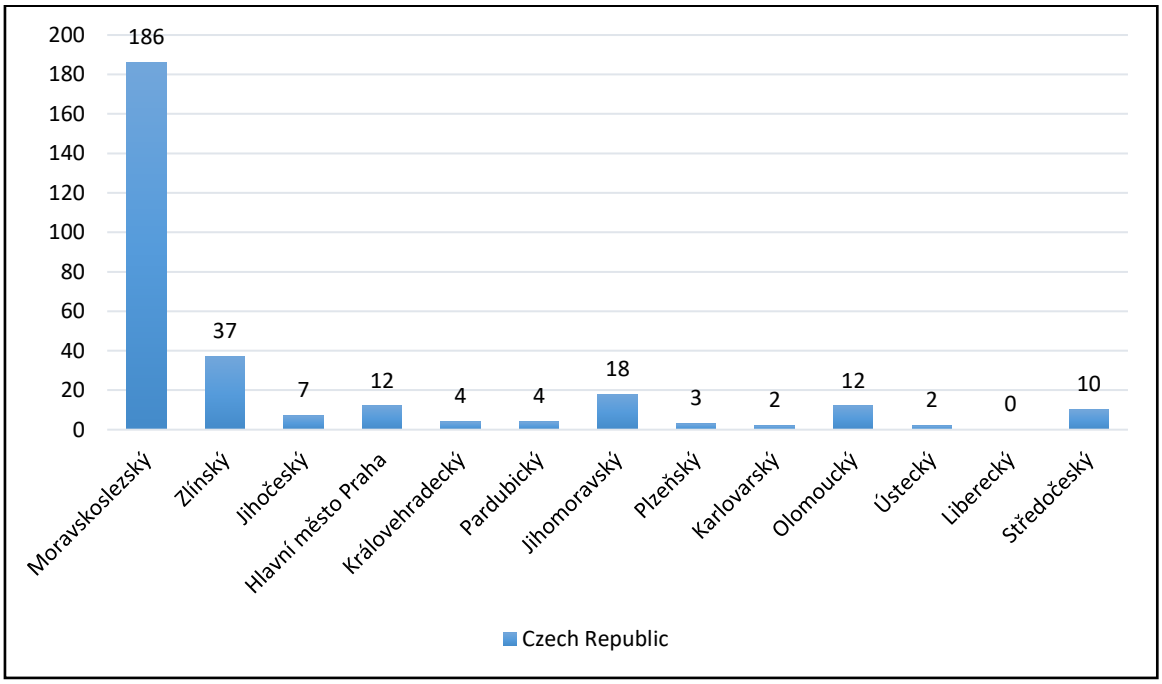
The most represented, in the both countries, was a category “High-school education", represented in the Czech Republic by 123 people (41,4%) and in Finland by 119 people (39,4%).

The biggest difference is included in the number of respondents who completed a university degree. In the Czech Republic, 77 people (25,9%) completed a university degree and in Finland 99 people (32,8%). However, the higher professional school education exists only in the Czech Republic. Even that this educational level cannot be considered as an equal to the university degree, may be stated that if there would be this kind of degree in Finland, some percentage of the people might have completed this type of education rather than the university degree. So theoretically, the difference between these two samples does not need to be as different as it seems so.

In contrast, the basic education was quite highly represented in both countries, in the Czech Republic by 34 respondents (11,4%) and in Finland by 43 respondents (14,2%). This category was followed by a group or respondents who completed a vocational education, in the Czech Republic represented by 32 people (10,8%) and in Finland by 38 people (12,6%). The least represented group was a special education degree, represented in the Czech Republic by 10 respondents (3,4%) and in Finland by 3 respondents (1,0%).

Considered that the most represented categories were in both countries "High-school education" and "University degree" may be stated that both samples provide in the average high level of education and this fact should positively affect the reliability of the responses.

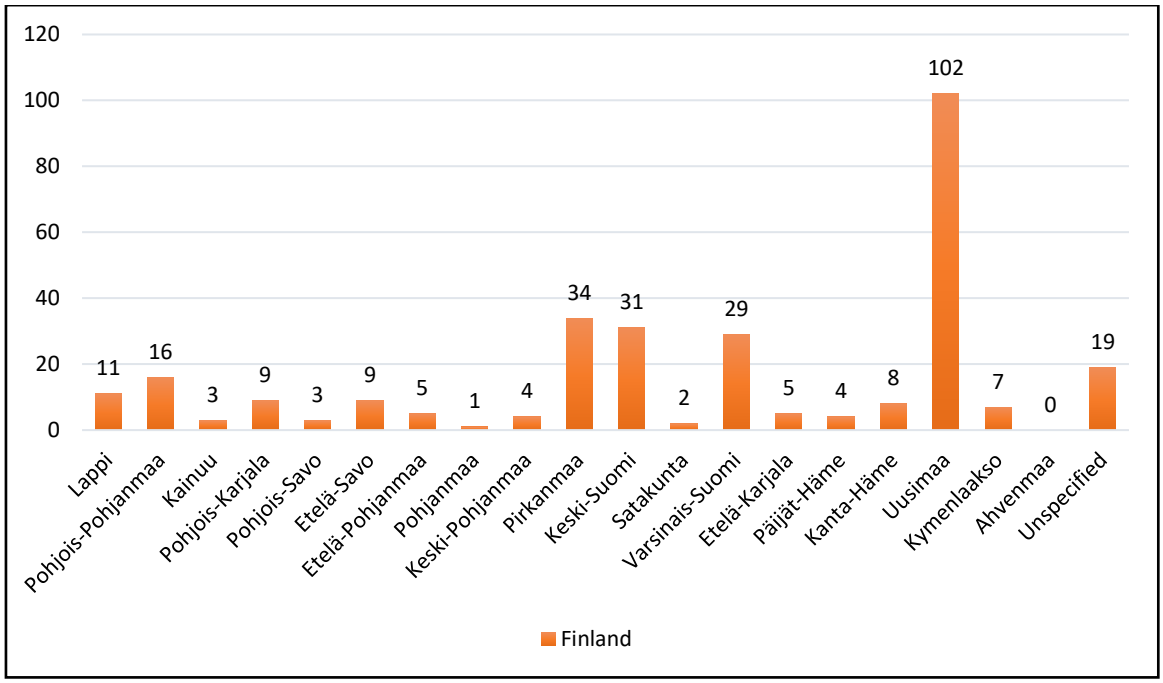
Question number twenty-two was asking to place the region of a place of residence to conclude if the data were collected from the whole country or were represented only in a few regions.



Graph 6 *– Place of residence distribution, regions in the Czech Republic*

Collected data showed that the highest distribution was in a region "Moravskoslezský kraj" (186; 62,6%). This was caused by the highest requesting for filling in in this district. Another most represented region was "Zlínský kraj" (37; 12,2%). "Jihomoravský kraj" (18; 5,9%), "Hlavní město Praha" (12; 4,0%), "Olomoucký kraj" (12; 4,0%) and "Středočeský kraj" (10; 3,3%) were represented by 10 or more respondents. Other regions were slightly represented by a few people. In addition, "Liberecký kraj" was the only one without any respondent included.

We may conclude that the questionnaire took a main place in the "Moravskoslezský kraj", included 186 respondents (62,6%). All together was Moravia and Silesia the most represented part of the Czech Republic. Czech part was represented only slightly.



Graph 7 – *Place of residence distribution, regions in Finland*

The region “Uusimaa” is the most represented (102; 33,7%) one in the whole Finland and it is mainly because of the highest occupancy status and capital city - Helsinki. The another most represented regions “Pirkanmaa” (34; 11.2%), “Keski-Suomi” (31; 10,2%), “Varsinais-Suomi” (29; 9,6%) and “Pohjois-Pohjanmaa” (5,2%) involves second highest numbers for a reason that in each of region is placed one big city. This graph almost copies a list of largest cities (by a population) in Finland: Helsinki, Tampere, Turku, Oulu and Jyväskylä. These cities are based on the collected data sorted as follows: Helsinki, Tampere, Jyväskylä, Turku and Oulu.

In addition, there were 19 people (6,2%) who wrote only “Finland” as a response or did not specify their place of residence for some reason.

In conclusion, Finnish distribution of respondents was varied more than in the Czech Republic.

6.2 Autism awareness question types

This subchapter is focused on the graphical display and the results interpretation obtained from the questions about autism. There were created three questions about the general topic of autism, two of them asking about the respondent’s knowledge, based on the

previous question, one is asking where did they meet a person with autism (questionnaire survey available as an annex).

The second question was created to find out if people have ever heard of autism and at the same time if they have a personal experience with a person with autism.

Gender	Absolute frequency	Relative frequency
Yes, I know, knew a person with autism	161	52,4%
Yes, but I have never met anyone with autism	128	43,1%
Yes, but I cannot imagine anything specific under this term	7	2,4%
No, I have never heard of autism	1	0,3%
Total	**297**	**100%**

Table 7 *– Autism term awareness, Czech Republic*

This table (Table 5) determines the absolute frequency of and relative frequency of respondents from the Czech Republic. We may see that the respondents, who answered "yes" (289; 95,5%) to this questions, have an idea what the autism is or they can imagine someone behind this term, which is really positive and even surprising. In addition, there were only 7 people (2,4%) who answered that they heard about autism but cannot imagine anything specific under this term, and one person (0,3%) who answered that has never heard of autism.

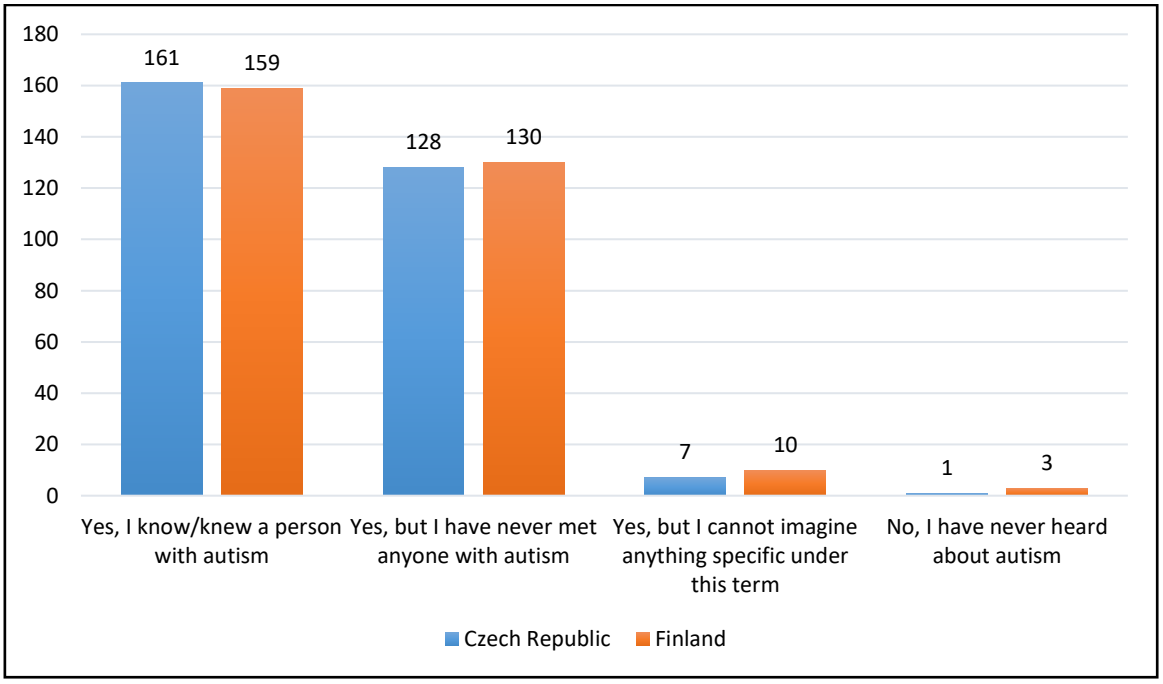
Gender	Absolute frequency	Relative frequency
Yes, I know, knew a person with autism	159	52,6%
Yes, but I have never met anyone with autism	130	43,0%
Yes, but I cannot imagine anything specific under this term	10	3,3%
No, I have never heard of autism	3	1,0%
Total	**297**	**100%**

Table 8 *– Autism term awareness, Finland*

Table 6 determines the data collected by the second question. Respondents self-evaluations demonstrate that most of the people in Finland have heard about the autism and

can imagine something specific under this term (289; 95,6%). This high number these respondents is not that surprising as it was in the case of Czech Republic, because Finnish society presents themselves as an inclusive society, and as a key sign of their society may be considered an equality. In contrast, was surprising that even Finnish people should theoretically know more about this topic, there were 10 respondents (3,3%) who were not able to imagine anything specific under this term. And the last option was representing 3 people (1,0%) who have never heard of autism. This was a surprising fact because the author did not expect that the number of people included in the responses to these two questions would be higher than one or two persons.

To compare the results about the autism term awareness and make the differences visible, there was a graph created and it can be seen below.



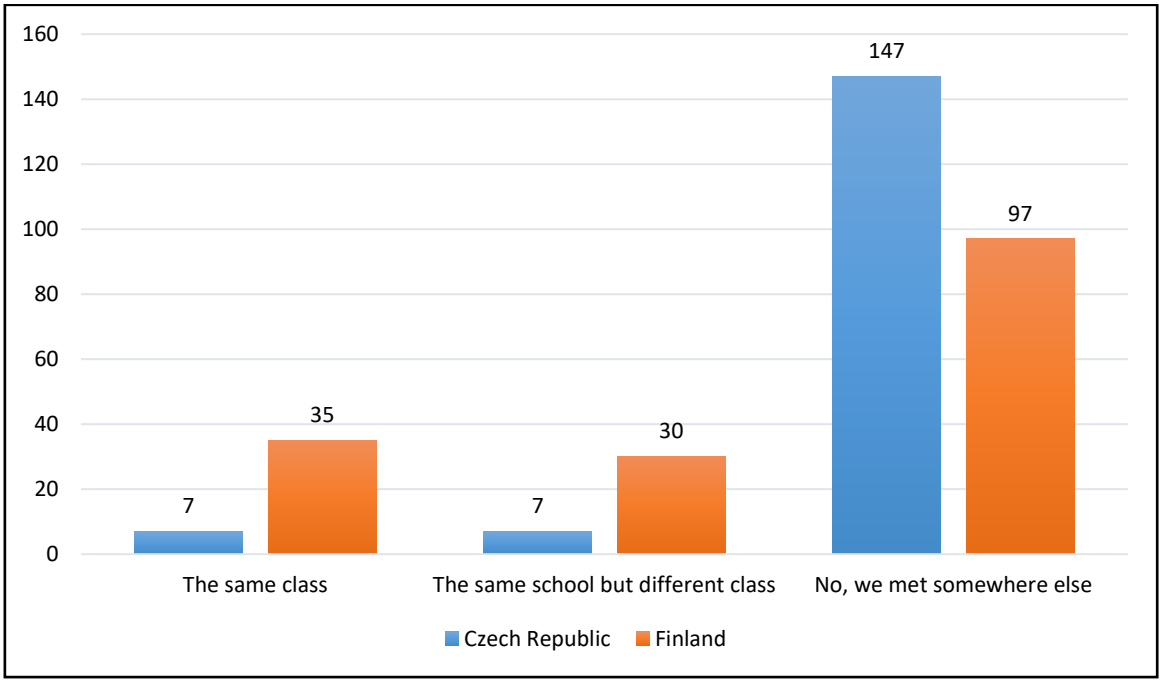
Graph 8 *–Awareness about the term of autism, a comparison between the Czech Republic and Finland*

The results of respondents' self-evaluation in the Czech Republic and in Finland were surprisingly almost the same. The little dissimilarities may appear due to a higher number of respondents in Finland (5 respondents more than in the Czech Republic). It is really positive to see that people at least somehow know what the autism could be and can picture it in their minds. The general high knowledge of being able to image "how the person looks like" may be a positive and successful start for a raising of awareness in both countries.

Another surprising fact was, that there were more people in Finland (13; 4,3%) who have never heard or could not imagine anything under the term of autism. Whilst questionnaire creating, the author assumed that in generally, Finnish people will be or should be more informed about a topic of disability than the people in the Czech Republic. This fact was based on above-mentioned Finnish society main signs of equality and inclusion. This might be caused by a Finnish ability to provide better self-critics on themselves, or also by the fact that the number of all Finnish respondents was a bit higher (302, 100%) than the number of the Czech respondents (297; 100%).

People who replied "Yes, I know/knew a person with autism" should indicate whether they met the person at school or somewhere else and these data are shown in the next graph (Graph 2).

The third question was constructed for the respondents who stated that they know or knew someone with autism. This question was mainly created to point out the differences between the education systems in the Czech Republic and Finland. At the same time, the question was made to find out where else the respondents met the person they know/knew.



Graph 9 *– Ways of meeting a person with autism, a comparison between the Czech Republic and Finland*

There are visible differences between the number of people who whether met the person with autism at school or somewhere else. All together in the Czech Republic were only 14

people (4,2%) out of 161 (100%), who were visiting the same school with a person with autism. In contrast, in Finland, there were 65 respondents (40,8%) out of 159 (100%) who met the person with autism at school. These statistics are pointing out what was thought by the author, that the number of people who went to the same school with a person with autism will be higher in Finland (65; 40,8%) than in the Czech Republic (14; 4,2%). The theoretical knowledge about Finnish integrative/inclusive education is visible in this graph (Graph 6) and has proved that the Finnish education is much ahead and has a longer tradition that the Czech education. However, there is still one unclear fact included in this graph, and it is whether the pupils (at the same school but in different classes) were placed in the special class at the general school or not.

The most common ways how the respondents met the person with autism (147; 91,3%), which were found in the open answers of the third option, were in the Czech Republic: at work, at the school practice or due to volunteering, a family member with autism (most common answer cousin) and via friends or acquaintances. In contrast, in Finland (97; 61,0%) the most common ways were: at work, via friends or acquaintances, it is a member of their family. In the Finnish answers also appeared some additional and surprising comments as "We met online" (8 people) via online game and on chats; 2 people mentioned that they met them at parties, and furthermore 7 people defined themselves as a person with autism.

The fourth question was created to see if the sample has a knowledge about what autism means or what is it. This question was an open question and gave the respondents a space for free answers. Was expected that the answers will vary a lot, so the author will provide a short comparison between respondents' self-evaluation and their real knowledge and point out some interesting answers and overall view on the data collected from this question.

Was concluded that most of the answers in the Czech Republic matched to or were somehow close to the specifics of the individual with autism. One keyword combination occurred in more than half responses and it was "own world" labelling or "they are closed into themselves". This view of a person with autism might be one of the factors, which does not help to a better social environment creation and an environment for integration/inclusion. It is necessary to show the general public, that usually it is the opposite, and people with autism can perceive more information around them than a person without the autism can.

In Finland, the responses were more accurate and descriptive compared to the Czech answers, where appeared mainly simple answers as "psychical illness", etc. However, Finnish

people left more blank answers (14) than Czech people (4). Unfortunately, in the Finnish sample appeared people who necessarily needed to express their hatefulness with responses as “disgusting sickness”, etc. In contrast, one beautiful metaphor appeared in the set of Finnish answers, and the person who wrote it deserves to be quoted: “A person with autism is like a train. The society and the persons around needs to place a track where the person with autism can travel on”. In conclusion, most of the answers stated by Finns were really accurate and descriptive, might be caused by having more theoretical knowledge basis about the autism than people in the Czech Republic.

6.3 Communication with a person with autism question types

The fifth question was asking about the fact if the respondents have ever communicated with a person with autism. These collected data were analysed and visually displayed in a graph below.

Experienced communication with person with autism	Absolute frequency	Relative frequency
Yes	148	49,8%
Not that I am aware of	149	50,2%
Total	297	100%

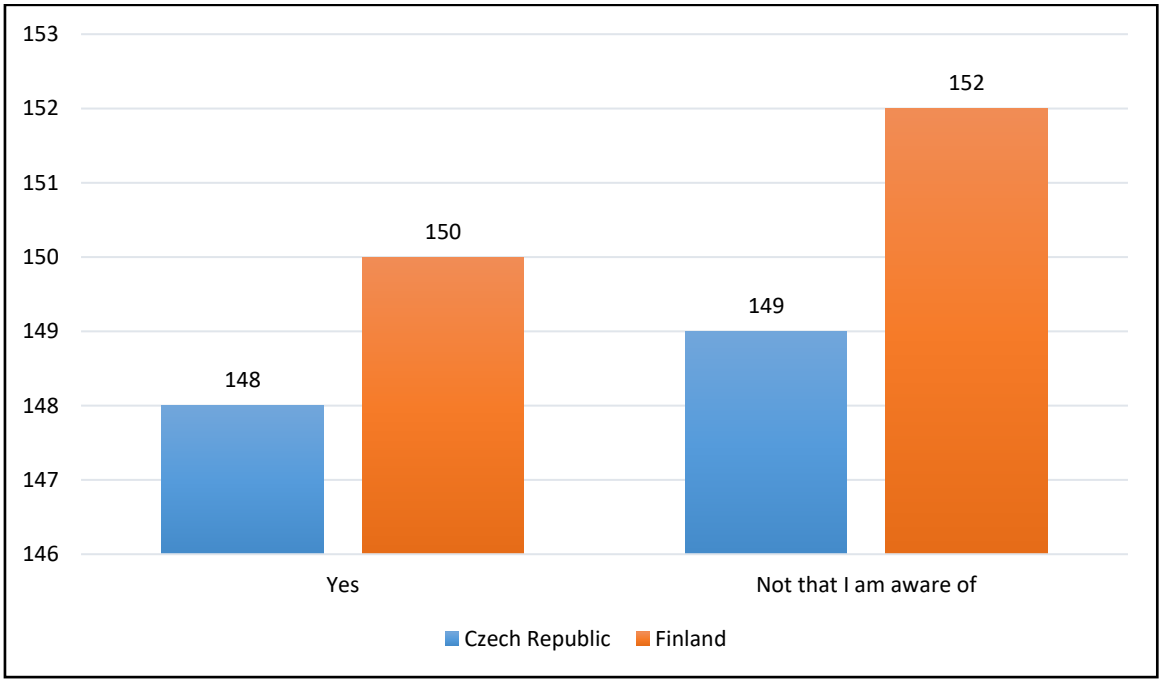
Table 9 *– Experienced communication with a person with autism, the Czech Republic*

In the table, above is determined that the respondents were according to their answers divided into almost equal halves. This little difference was caused by an odd number of respondents in total (297; 100%). These results are positive and if this fact would be able to be applied to the Czech inhabitants, it would mean almost half of people (148; 49%) would have experiences with a communication with a person with autism and probably would share their obtained awareness to the group of people who have never experienced it. However, this awareness might be affected by a high number of people who works with people with autism or had a school practice in such an institution where they got a chance to communicate with a person with autism (based on the data from the question three).

Experienced communication with a person with autism	Absolute frequency	Relative frequency
Yes	150	49,7%
Not that I am aware of	152	50,3%
Total	**302**	**100%**

Table 10 *– Experienced communication with a person with autism, Finland*

The table above (Table 8) represents the data collected in Finland. The question was asking respondents if they have ever experienced a communication with a person with autism. We may see that almost half (150; 49,7%) of the Finnish respondents have experienced the communication with the person with autism. However, the number of respondents who do not have any experiences was a bit higher (152; 50,3%). This fact may be caused by the fact that most of the respondents were people around the age 20-29 (177;59%) who may be still studying and especially studying something which does not include a topic about people with disabilities. In addition to this thought, there was statistically a higher number of males (235; 77,8%) in the Finnish survey sample who do not in generally tend as much as females to study programmes orientated on a topic of disability, e.g. education, speech therapy, etc.



Graph 10 *- Experienced communication with a person with autism, a comparison*

This question provided almost corresponding data between the Czech Republic and Finland. In both countries have around half of the respondents ever communicated with a person with autism. For the Czech Republic, it may be a high number, but it is probably caused by a large participation of the people who worked/has worked or had a practice in institutions where they got a chance to communicate with a person with autism. In contrast, in Finland, there were only a few people who experienced the practice at some school or other institution. This fact may be concluded as a key fact and provides the information that people in Finland might have experienced more the communication with the person with autism in generally than people in the Czech Republic. However, there might have been some people who chose to put preference on some other place of meeting than a school practice.

The sixth question was chosen to be open, for a reason to let people express their ideas and explore a real awareness about the topic of AAC. The biggest and only one countable difference between the Czech Republic and Finland was the amount of empty or "I do not know" answers. In the Czech Republic, there were 17 answers (4,7%) of this kind, and in Finland 38 (12,6%). This fact cannot be considered as a factor of awareness, but one possible reason for the difference in these numbers might be a higher tendency of the Czech people to really think about the question. Most of the responses in the Czech Republic included non-verbal communication systems (e.g. gestures or facial expressions) and pictograms or pictures.

In contrast in Finland, most of the responses mentioned signing, pictures and open-minded answers as "everything is possible to use" or "the same as everyone else". In addition, some technical aids were mentioned in Finnish survey together with an online chatting. In the Czech Republic, there was no answer which would include some hatefulness, but unfortunately, in the case of Finland, there were some of these responses (probably the same respondents who stated the hateful answers in the open question for defining autism).

This **seventh question** was made to realise how many people do not care at all about the topic of "how to communicate to a person with autism who cannot use speech", how many people do not know but would like to learn more, and how many people know about this topic.

Awareness self-evaluation about how to communicate to a person with autism and speech difficulties	Absolute frequency	Relative frequency
Yes, I know and I do not need to know more	6	2,0%
Yes, I do but it is always good to learn more	61	20,5%
No, but I would like to learn more	200	67,3%
No, I am not interested in learning more	30	10,1%
Total	**297**	**100%**

***Table 11**- How to communicate to a person with autism and speech difficulties, self-evaluation, the Czech Republic*

The most represented category in the Czech Republic was "I do not know much about this topic but would like to know more" (200; 67,3%). Important is that whether there were many people who chose this option, there is still included the positive thought that they would possibly like to learn more about this topic. This category was followed by a group altogether included 66 people (22,5%) who considered themselves as persons who know about this topic. The least number of respondents (30; 10,1%) may be found in the option "No, I am not interested in learning more". This is probably affected by a fact that there were some people who do not put much important into these kinds of knowledge.

Self-evaluation in awareness about a communication with a person with autism	Absolute frequency	Relative frequency
Yes, I know and I do not need to know more	9	3,0%
Yes, I do but it is always good to learn more	47	15,6%
No, but I would like to learn more	171	56,6%
No, I am not interested in learning more	75	24,8%
Total	**302**	**100%**

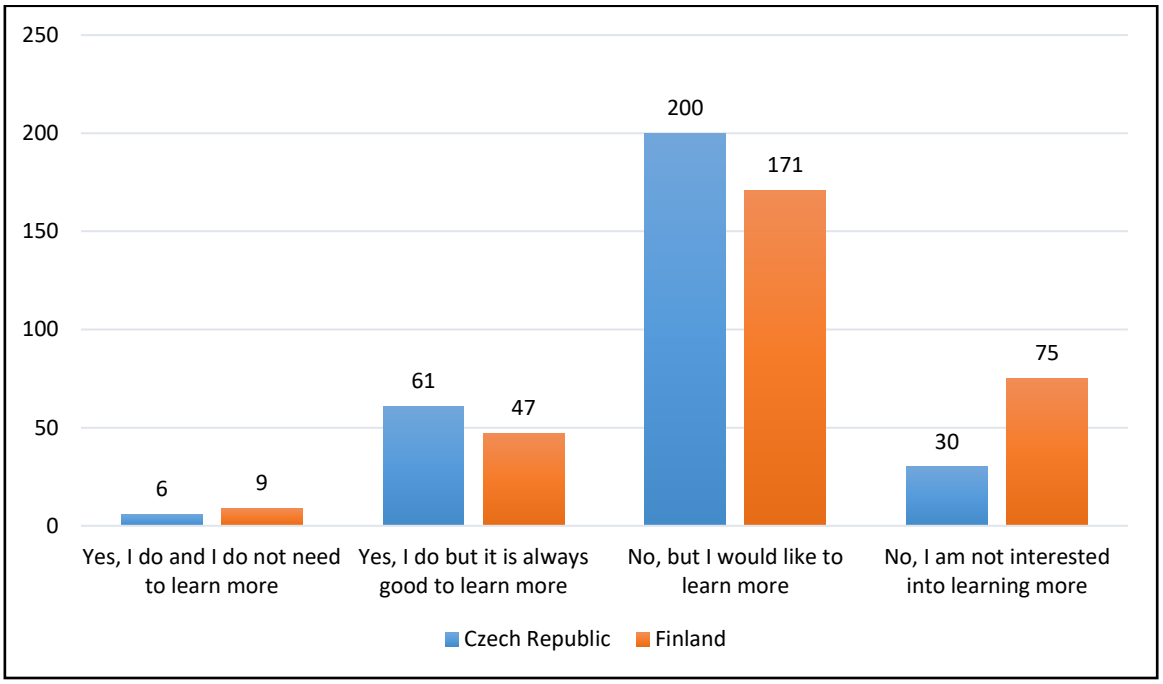
***Table 12** How to communicate to a person with autism and speech difficulties, self-evaluation, Finland*

The highest number of respondents (171; 53,6%) in Finland decided to choose an option "No, but I would like to learn more". The fact that people would like to learn more even though they may not know enough about how to communicate with a person with autism and speech difficulties, is positive and support an idea that people in Finland are not in average indifferent.

The second most represented (75; 24,8%) category was unfortunately not interested in learning more about this topic. This result might be affected by the high number of the people under the age of 20 (66, 21,9%) who might not be interested yet into these kinds of topics or they might not see an importance in learning more about how to communicate to a person with autism and speech difficulties.

The least represented was a group of people (56; 18,6%) who are sure that they know enough about this topic.

The fact that there are more people who "are not interested" than people who "know for sure" about how to communicate with a person with autism and speech difficulties, might be affected also by a possible critical self-evaluation, which might have caused that some people chose an option "No, but I would like to know more".



Graph 11 *- Self-evaluation in awareness about a communication with a person with autism, comparison*

As we may see, the highest number of respondents in both countries placed themselves in the answer "No, but I would like to learn more". In the Czech Republic, there were 200 people (67,3%) who chose this option and 171 (56,6%). This fact may sound negatively in a term of awareness, but to see it more from a positive side, these people do not know but they possibly care and would like to get to know more about this topic. However, there might be a quite high number of respondents who just felt that it is the answer they should choose to keep some "humanity" in them.

Altogether there were 67 (22,5%) people in the Czech Republic who self-evaluated themselves as well educated about this topic. In contrast, in Finland, there were altogether 56 respondents (18,6%). The least number of the respondents in Finland might be affected by a possible higher self-criticism of respondents and possibly by the fact that people younger than 20 years old were highly represented in the Finnish sample (66; 21,9%).

The least represented category was "No, I am not interested learning more about this topic". There was the highest number (75; 24,8%) of people from Finland who felt to choose this option than the number of people from the Czech Republic (30; 10,1%). Higher number of Finns in this category might be again affected by the number of people younger than 20 years old (66; 21,9%) who do not care that much yet about topics such a disability or autism or the fact that there was obvious high number of males (235; 77,8%) in the Finnish sample who are not in generally that interested in this topic as females might be.

If the data collected in this question would be compared to the data from the question above (no. 6), we may conclude that in generally, people know what kind of systems do exist and can be used in a communication with a person with autism. However, they do not have that high awareness about how to use them in the case of communication with a person with autism.

Question number eight was created to obtain data about people willingness to communicate with different systems than speech with strangers in generally. These data will be compared with data collected in the following question (ninth question).

Willingness to use communication systems different than speech, general picture	Absolute frequency	Relative frequency
Yes	179	60,3%
No	118	39,7%
Total	**297**	**100%**

Table 13 *- Willingness to use communication systems different than speech, general picture in the Czech Republic*

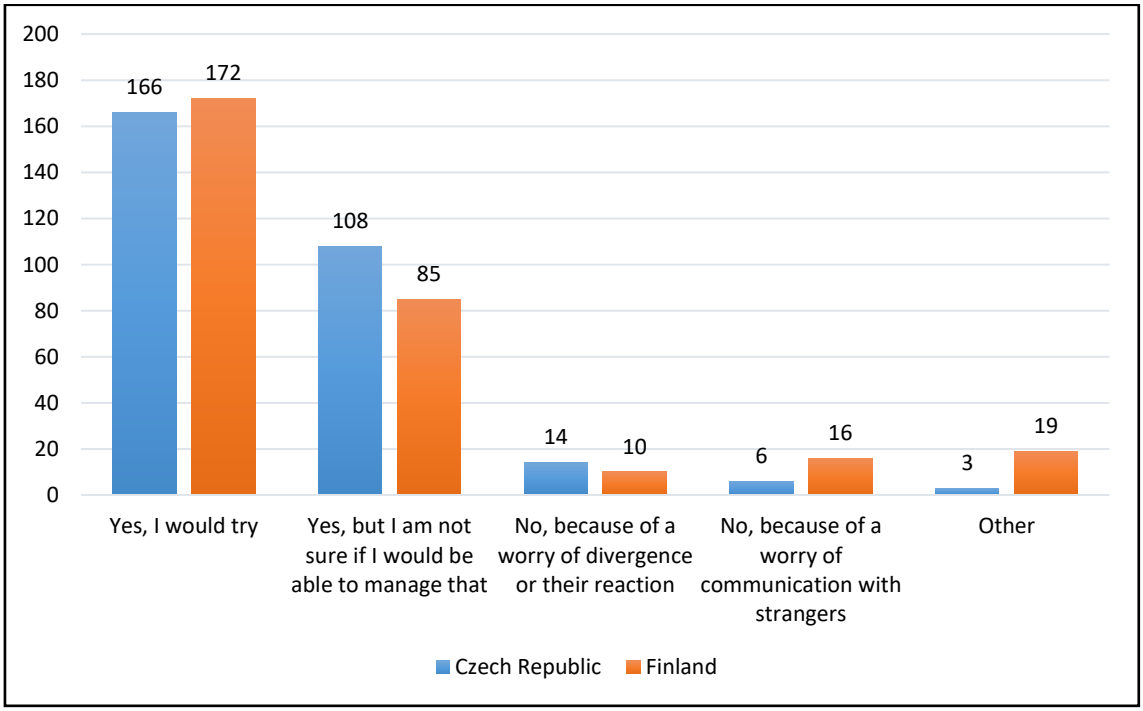
Potential willingness in the Czech people (179; 60,3%) to use communication systems as is pointing, answers yes/no, or facial expression was higher than the unwillingness (118; 39,7%). Word potential was chosen, because the question was asking about if they have ever experienced this situation, no that if they would be willing to. This formulation was made on purpose to avoid two almost similar questions which would differ only in a few words.

Willingness to use communication systems different than speech, general picture	Absolute frequency	Relative frequency
Yes	233	72,2%
No	69	22,8%
Total	**302**	**100%**

Table 14 - *Willingness to use communication systems different than speech, general picture in Finland*

In Finland was the potential willingness high (233; 72,2%) which is a surprising fact, as the Finns are well known for their typical avoidance to strangers in generally. The number of people who did not experience this type of communication (69; 22,8%) was least represented than the previous category. Author, as a foreigner in Finland, is pleased by the idea of Finnish people trying to have communication, and even more pleased to realise that there were used other communication systems than speech.

The question nine is was created based on the previous question (question nine). This question was linked to the previous one, when the previous was asking about the ability to use pointing, answering yes/no or face expression with some random unspecified stranger. Graphical display of this question will be available and then compared to the previous question collected data.



Graph 12 *– Communication with a person with autism by a use of nonverbal systems of communication, comparison*

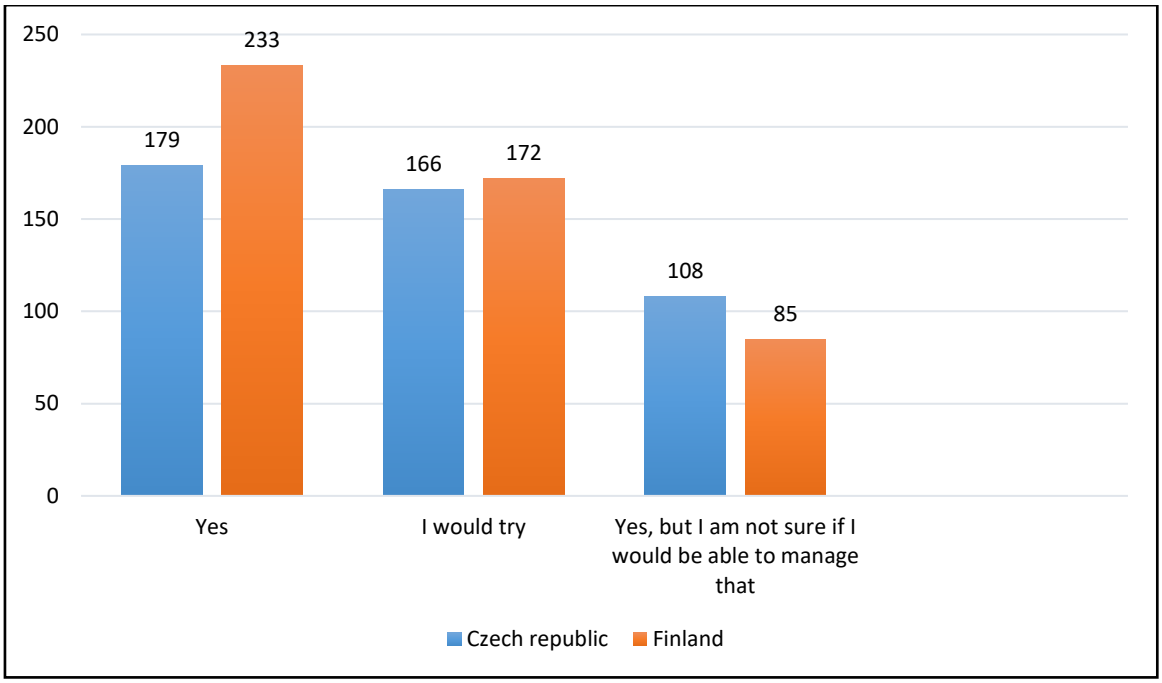
Results of this question are positive and show that people are willing to communicate with a random stranger who would have speech difficulties. Term autism was mentioned in the question to specify an imagination of the respondents, but people would not probably be able to recognise that this exact person is a person with autism. In the Czech Republic was this answer represented by 166 (55,9%) respondents and in Finland by 172 (57,0%). This finding determinates that people would try their best to communicate with a person with autism if they would need to. In addition to this positive fact, if there would be added the data collected about people who are aware that they would not be able to manage this situation but they would still try, in the Czech Republic represented by 108 respondents (36,4%) and in Finland by 85 respondents (28,1%); there would be altogether 274 respondents (92,3%) in the Czech Republic and 257 respondents (85,1%) in Finland who are willing to try to communicate with a person with speech difficulties. This is incredibly positive finding, even though there might be some people who would not actually be that willing to do this, it is possible that big percentage of respondents would still stand up for their opinion.

Czech people were more unsure about them being able to manage possible communication (108; 36,4%). However, Finnish respondents were in overall view more aware of the communication with strangers (16; 6,3%), which may point out their common culture stereotype of shy people who do not talk to strangers.

There was not a big diversity between numbers of respondents who chose an option which mentioned that they would not do it, because of a worry of divergence or their (people with autism) reaction. In the Czech Republic was this answer represented by 14 respondents (4,7%) and in Finland by 10 respondents (3,3%). This number was expected to be higher in the Czech Republic as Czech people are in generally struggling with the diversity and they often condemn these differences. However, the author hopes that these results are at least partly close to the reality.

In the higher number of Finnish people who chose an option “other” (19; 6,3%), appeared mainly answers which were close to options stated above, and four “I do not know” answers (1,3%). In contrast to data collected the Czech Republic, was only one “I do not know” answer (0,3%).

The following graph shows the data comparison collected by the questions number eight and nine.



Graph 13 – *Comparison of answers number eight and nine*

As can be seen in this graph, there were in both countries all together higher numbers of people willing to communicate with person with communication difficulties (together with autism), in the Czech Republic 274 (92,3%) and in Finland 257 (85,1%), than the numbers of respondents who stated that they have experienced this way of communication with stranger, in the Czech Republic 179 (60,3%) and in Finland 233 (77,2%). As we may see, the difference between these numbers in the Czech Republic is bigger (95; 32%) than is the difference between numbers in Finland (24; 7,9%). This bigger variety in Finland might be caused by more critical self-evaluation than in the Czech Republic.

6.4 QR code aid question types

Questions 10, 11, and 12 were asking about an author's idea for QR codes communication aid based on the possibility to get to know personal and individual way of communication of a precise person. Information about a personal communication system used by the individual would be inserted to the website by the caregiver (must have been easy to do it) which would include mainly basic communication situation in cases of that the person must communicate with police or get lost, etc. After a scanning of the QR code on a card, the data placed by the caregiver would appear on a phone of the person who scanned the code. Data collected in these questions will be used for a possible future development of this idea

and all of them do not need to be placed in this thesis. However, the author will point out some interesting critics and ideas made by the respondents who chose an answer of I would not scan any of these options (questionnaire may be found as an annex).

Most of the answers of the Czech people were about respondents not having a smartphone. In contrast, people in Finland stated an important hint about a possible addition to the introduction card a fact that the person has autism. In generally, people in both countries would be worried about possible virus download.

This idea is planned to be more developed by the author during the master's degree in Educational Sciences at the University of Jyväskylä.

6.5 Society-evaluation, personal awareness, and its factors question types

These questions were created on purpose to find out if the society-evaluation made by respondents contrast the obtained data; to see if respondents see the importance in society inclusion of individuals with autism, and to determine which factors may affect respondents' personal awareness.

Question number thirteen was constructed as a scale question, to give respondents enough space to express their feeling about how high is the general public awareness about a topic "How to communicate to a person with autism who cannot use speech".

Options	Czech Republic	Finland
1 (Low awareness)	160	93
2	92	137
3	35	58
4	7	12
5 (High awareness)	3	2
Total	**297**	**302**

Table 15 *– Scale on general public awareness, the Czech Republic*

There was visible diversity between a scale rating in respondents from the Czech Republic and Finland. People in the Czech Republic evaluated public awareness (see Table 5)

the most as a much lower (160; 53,9%) and the second most as a lower (98;31,0%). In contrast, in Finland the highest number of respondents agreed on lower awareness (137; 45,4%), the second highest number was much lower (93; 30,8%). In addition, there was not the that big gap between the numbers much lower (93; 30,8%) and mean (58; 19,2%) awareness in Finland as was determined in the Czech Republic, lower awareness (160; 53,9%) and mean awareness (35; 11,8%).

In conclusion, these results are showing that in both countries the self-evaluation was critic and low. These results are calling for better education about a topic of communication in people with autism and generally in individuals with disabilities.

Question number fourteen was asking respondents to choose a maximum of three options which would help to increase their personal awareness about this topic. There were created six closed options and one open option.

Personal raising of awareness, factors	Absolute frequency	Relative frequency
Leaflets, billboards	75	25,3%
Free seminar	81	27,3%
Advertising campaign on TV	185	62,3%
Workshop	68	22,9%
Webpage	128	43,1%
Possibility to meet person with autism who use different type of communication than speech	163	54,9%
Other	11	3,7%

Table 16 *- Personal raising of awareness, factors in the Czech Republic*

The three most common options chosen in the Czech Republic were the advertising campaign on TV (185; 62,3%), followed by the possibility to have personal experience (163; 54,9%) and the last most common option was web page, which would include information about this topic (128; 43,1%). The author was not surprised about the high number of people who would prefer the advertising campaign on TV but did not expect that this option will be stated as the most favourite one.

Options as free seminar (81; 27,3%), leaflets and billboards (75; 25,3%), and workshop (68; 22,9%) were nearly equally represented. The free seminar or workshop option might be represented by a quite low number of people mainly for a reason that person would need to use the own free time to participate in this kind of event. The leaflets and billboards were not chosen that often, because people are getting the leaflets daily on the street or to their post boxes, so the possible effect on the awareness raising would not be that high as in the other more individual cases.

There were 11 respondents (3,7%) who chose an option "other". The most interesting idea was mentioned by two respondents, and it was to include the topic of "how to communicate with a person with speech difficulties" into basic education classes or let children try these systems by organizing a workshop.

Personal raising of awareness, factors	Absolute frequency	Relative frequency
Leaflets, billboard	93	30,8%
Free seminar	42	13,9%
Advertising campaign on TV	136	45,0%
Workshop	26	8,6%
Webpage	190	62,9%
Possibility to meet person with autism who use different type of communication than speech	146	48,3%
Other	54	17,9%

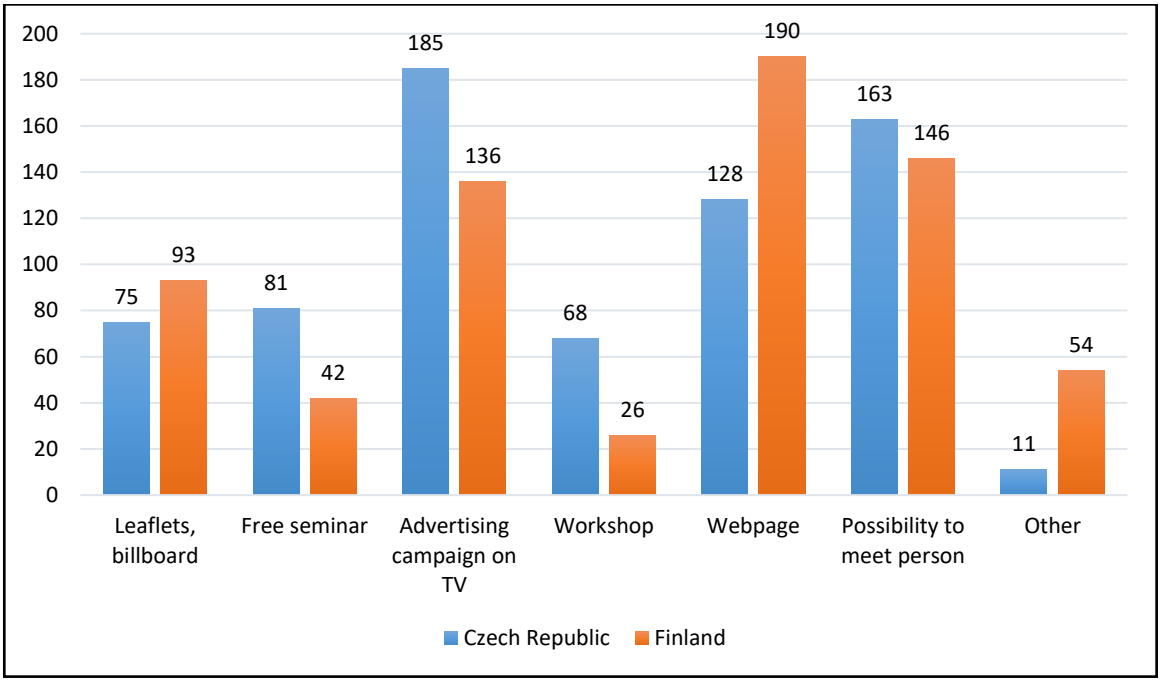
Table 17 *- Personal raising of awareness, factors in Finland*

The three most common options which would according to self-evaluation affect respondents' awareness were the webpage (190; 62,9%), possibility to meet a person who uses different communication system than speech (146; 48,3%) and the advertising campaign on TV (136; 45,0%). The highest number of the respondents chose the option web page and that might be a cause but a high percentage in the categories of respondents younger than 20 (66; 21,9%) and respondents on the age scale from 20-29 (177; 58,6%) who in generally use the internet to get most of the information they need or want to know.

The fourth most favourite option was leaflets and billboards (93, 30,8%), which may determine that more than quarter people in this sample pay attention to billboards around them and leaflets which get on the street or to their post boxes.

"Other", an open answer, was chosen by 54 respondents (17,9%) and the most written answer was to include this topic into the curriculum, school classes or let the children try these communication systems (14; 4,6%); second most common answer was social media campaign (9; 2,9%); followed by respondents who would prefer a video or video vlog on the youtube.com (6; 1,9%), the last mentioned grouped way how to increase respondents' personal awareness was an article in some high quality newspaper (4; 1,3%).

There were two interesting individualistic answers mentioned. First, "a fact sheet on the places where I get bored, e.g. bus station, restaurants whilst waiting for food" and the second, shareable info comic which includes this topic. The first answer is close to the category of leaflets or billboards, but an awareness raising in the restaurants is an interesting idea. However, the author is not sure if there would be many restaurants opened to this kind of idea. The rest of responses were more about not interested respondents or blank answers (14; 4,6%).



Graph 14 *- Personal raising of awareness, factors, a comparison between the Czech Republic and Finland*

The graph (Graph 11) determines that the three most common options in both countries were the advertising campaign on TV, the web page, and the possibility to meet a person who does use different communication system than speech.

The numbers of respondents vary in each option. The author describes the differences in each option from left to right. First, the option for leaflets and billboards were represented in the Czech Republic by 75 people (25,3%) and in Finland by 93 people (30,8%). There were more Finnish people who chose this option, but both numbers are still quite low in a comparison with other highly chosen options.

The second option was a free seminar, which was chosen by 81 people (27,3%) in the Czech Republic and by 42 people (13,9%) in Finland. The Czech Republic represented more people in this option and it may be explained by the high number of people who work with individuals with autism and consider this seminar as a good option for personal and professional knowledge increasing.

The advertising TV campaign was generally a popular choice, but even in this case, the number of Czech people (185; 62,3%) represented was higher than a number represented by Finns (136; 45,0%). This might be caused by the more equal distribution of the age categories in the Czech Republic when older people might theoretically tend more to watch the TV than young people and this may be considered as a well-known fact nowadays.

The workshop option was more represented in the survey sample in the Czech Republic (68; 22,9%) than it was in a case of Finland (26; 8,6%). This difference may in generally mean that people in the Czech Republic tend more to try gained knowledge in practice.

The web page held a high number of respondents in both countries, but Finns were more interested in this option (190; 62,9%) than Czech people (128; 43,1%). This might be possibly caused by a fact that Finns are using the internet more often than Czech people, but mostly, this is probably caused by the age distributions differences (see more about the age distribution in the subchapter 6.1)

One of the most chosen responses in both countries was the possibility to meet a person who uses some different communication system than speech. In the Czech Republic was this option a bit more represented (163; 54,9%) than in Finland (146; 48,3%). This positive fact shows that people in both countries would rather prefer to meet an actual person than just to hear about it on seminars or workshops.

The last was the open answer named “other”, and the most stated suggestion for raising the awareness was to include the communication methods (AAC) to the curriculum on

school classes, which is according to the author great idea and this fact would for sure increase awareness about this topic and prevent discrimination or exclusion of people with disabilities from the general society.

Question number fifteen was created to see how much the respondents agreed with a statement "increased awareness about this topic could help better inclusion of people with autism who cannot use speech, into general society". Respondents were given three options: agree, partially agree and disagree.

Statement	Czech Republic	Finland
Agree	198	207
Partially agree	96	85
Disagree	3	10
Total	**297**	**302**

Graph 15 *- Statement, increased awareness would help inclusion, a comparison*

In both countries was the highest represented option the option "agree", in the Czech Republic by 198 respondents (66,6%) and in Finland by 207 respondents (68,5%). It is important that more than half people in both countries agreed with this statement, which supports the raising of awareness demand.

The second highest represented option was in both countries "Partially agree", in the Czech Republic (96; 32,3%) and in Finland (85; 28,1%). This result may be also considered as a positive fact and people are basically right because only the fact that a person knows how to use the communication systems cannot affect the whole process of inclusion of people with autism.

As the last, there were only a few people who disagreed with this statement, in the Czech Republic (3; 1,0%) and in Finland (10; 3,3%). This low representation keeps the previously mentioned idea of positive a positive approach to the inclusion and the people with autism

Question number sixteen was created to get information about the fact if people have ever tried (in your free time) to find more information about a topic how to communication with a person with autism. There were only two options offered to choose: "yes" and "no".

Respondents' actual interest in the topic of autism and communication	Absolute frequency	Relative frequency
Yes	116	39,1%
No	181	60,9%
Total	**297**	**100%**

Table 18 *- Respondents' actual interest in the topic of autism and communication, the Czech Republic*

The results in the Czech Republic shows that more than half of respondents (181; 60,9%) have never tried to search for any information connected to this topic in their free time. Consider there were 230 respondents (77,4%) who self-evaluated themselves as not enough educated about a topic how to communication with a person with autism who uses different communication system than speech (question seven), we may see that there were 49 respondents (16,4%) of people who did not consider themselves as educated about this topic but were possible searching for more information on their own at some point.

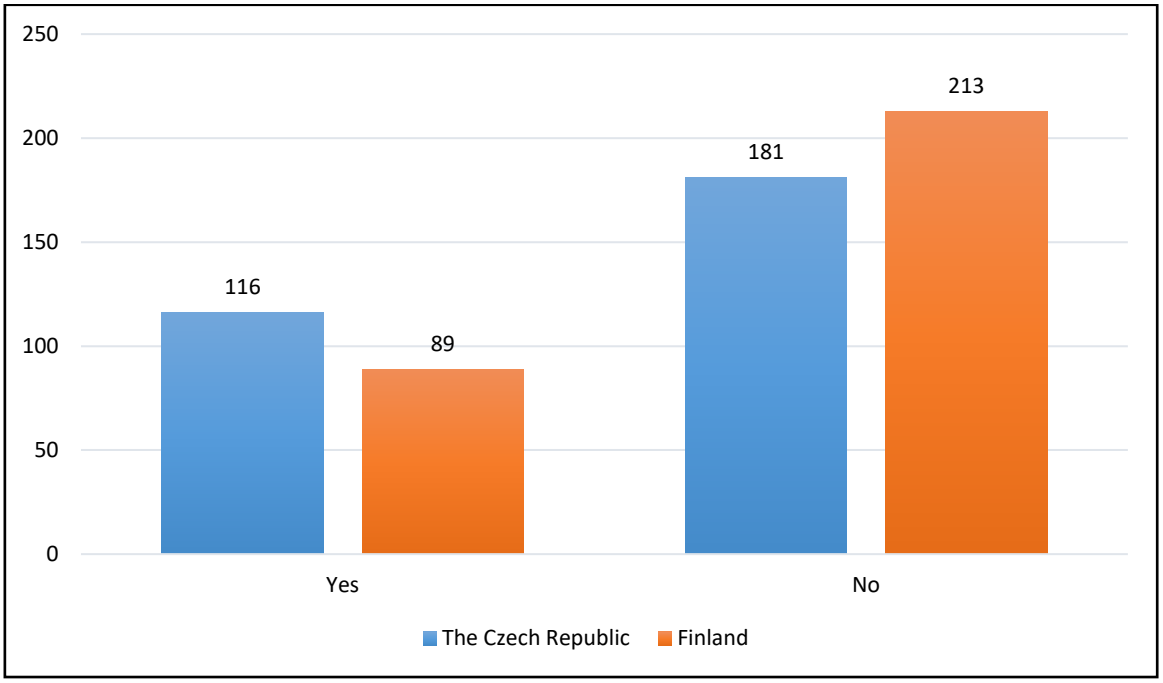
This question may show a real interest of the respondents' and that means that only 116 people (39,1%) were interested enough to search for more information. Probably many respondents included in this category tried to search for this information because of a work or school related reason. This conclusion is based on the data collected in the question number three.

Respondents' actual interest in the topic of autism and communication	Absolute frequency	Relative frequency
Yes	89	29,5%
No	213	70,5%
Total	**302**	**100%**

Table 19 *- Respondents' actual interest in the topic of autism and communication, Finland*

There were 70% of respondents (213) in Finland who have never tried to search for any information about the topic of autism and communication. This results are more close to the data collected in the question number seven, that means that 246 respondents (81,4%) who stated that they are not educated enough about a topic of autism and communication systems is close to the number of people who stated that they have never searched for any information

on their own. That might be concluded as a possible fact, that Finnish people able to self-evaluate themselves well.



Graph 16 *- Respondents' actual interest in the topic of autism and communication, comparison*

When comparing collected data from both countries, we may there are not that big differences between a number of respondents in each of questions. People in the Czech Republic (116; 39,1%) were searching for the information more often than people in Finland (89; 29,5%). This result may be again caused by a number of professionals and students in the Czech sample.

Option "no" was more common in either Czech Republic and Finland. There were fewer people in the Czech Republic (181; 60,9%) who were not searching for any information related to this topic than were in Finland (213; 70,5%). As mentioned above, this might be affected by more experienced ability of Finnish people to make a self-evaluation.

Question number seventeen was focused on the respondents who answered "yes" to previous question and to find out which resources were used to get more information about a topic of autism and communication systems. There were four closed options created and one open answer called "other", to get all variety of responses. Whilst comparison, it is important to keep in mind that there were fewer people in Finland (89, 29,5%) who chose the option

"yes" in the previous question, instead of in the Czech Republic there were 116 people (39,1%).

Information resources	Absolute frequency	Relative frequency
Internet	99	85,3%
Specialized literature	40	34,5%
Movie or documentary	35	30,2%
Novel	24	20,7%
Other	20	17,2%

Table 20 *– Information resources, the Czech Republic*

The most favourite resource for an information search was the internet (99; 85,3%). This fact was expected as the internet is nowadays probably the most used resource for searching different kinds of information. The second most preferred resource was specialized literature (40; 34,5%), which provides for sure the most reliable information, in many cases more reliable than internet sources. There were 35 respondents (30,2%) who watched a movie or documentary about a topic of autism and communication systems (author assumes that mostly only about autism). Novel was the second least favourite option of respondents (24; 20,7%), which proves that there are available novels which are including a character with autism.

The last option was open answer "other" and was chosed by 20 respondents (17,2%). Half of the respondents stated that they got the information about this topic from specialists (psychologist, teacher, personal assistants, etc.). There were 5 respondents who got the information from parents or family of a person with autism. Three people stated that they participated a seminar which included this topic. One person mentioned that read an article and one person visited a theater play called Duše K in the Czech Republic.

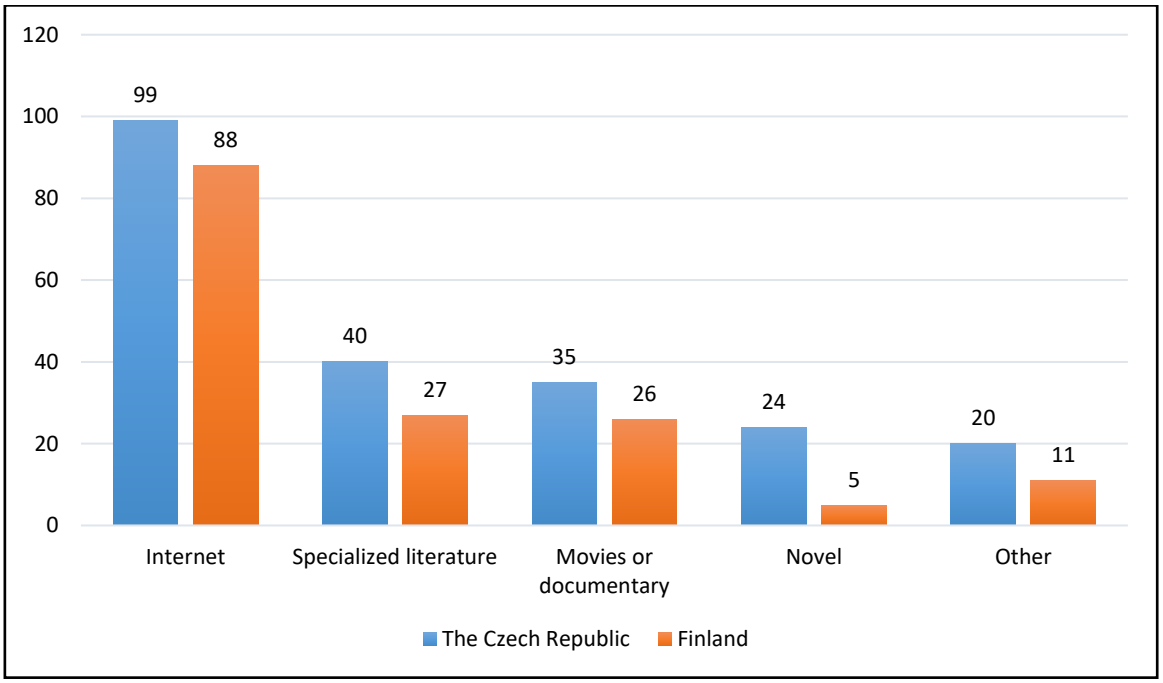
Information resources	Absolute frequency	Relative frequency
Internet	88	92,6%
Specialized literature	27	28,4%
Movie or documentary	26	27,4%
Novel	5	5,3%
Other	11	11,6%

Table 21 *– Information resources, Finland*

The highest number of people chose an “Internet” option (88; 92,6%) and as was stated in the case of Czech Republic, this is not surprising because of the dominance of the internet as a searching tool above the others resources.

Specialized literature (27; 28,4%) and movie or documentary (26; 27,4%) stated almost the same number of respondents. Specialized literature was probably the second most preferred option because of its reliability and movie or documentary because to watch something is probably easier for some individuals (especially younger people) than to read a book. In addition to this fact, there were only 5 people (5,3%) who read a novel about this topic.

The last “other” option was chosen by 11 respondents (11,6%). Seven out of eleven respondents stated that they got the information from professionals (teacher and doctor). One person got information from a family of a person with autism, another in the library and the last person was watching a TV show called “Touch”, which includes a character with autism. In addition, one question was unfilled.



Graph 17 *– Information resources, comparison*

The internet was the most common option in both countries, in Finland, the number of respondents (88; 92,6%) was a little bit lower than in the Czech Republic (99; 85,3%) but this may be caused by a lower number of respondents in the previous question (question sixteen).

The second common in both countries was specialized literature because respondents in the Czech Republic (40; 34,5) either in Finland (27; 28,4%) were probably looking for reliable information.

Movies and documentary were the third most common option in both countries; 35 respondents (30,2%) in the Czech Republic watched a movie or documentary about the topic of autism and communication as well as 26 respondents (27,4%) in Finland. Many people prefer to watch a movie or documentary because these two connect education and fun together and people in generally prefer it more than reading a book. This fact may be seen in the "novel" option, which was chosen by 24 people (20,7%) in the Czech Republic but only by 5 people in Finland (5,3%). The low number of people who read a novel in Finland might be caused by a high number of young survey participants (see the age distribution question, 20).

The last option "other" was chosen by more people in the Czech Republic (20; 17,2%), half of them were possibly parents or students because 10 people stated that they got information from the professionals. In Finland (11; 11,6%) was the most common answer same as in the Czech Republic and was written by 7 people.

Question number eighteen was focused on mass media (newspaper and TV) as a possible resource of information. Was asking respondents about if they have ever encountered an article or reportage about people and their communication. There were three possible answers created: "yes"; "yes, but it concerned only the people with autism, not their communication"; and "no".

Newspaper and TV as a resource of information	Absolute frequency	Relative frequency
Yes	69	23,2%
Yes, but only about autism	133	44,8%
No	95	32,0%
Total	**297**	**100%**

Table 22 *– Newspaper and TV as a resource of information, the Czech Republic*

The highest number of people (133; 44,8%) responded that they watched some TV news or read an article in newspapers about a topic of autism, which did not include any

additional information about communication systems use by people with autism. This answer was expected as the even author is not aware of many articles or reportages which would include such a specific topic as communication systems used by people with autism.

The second most represented option was “no”, which determines that 95 people (32,2%) have never read or watched any article or reportage about this topic. The topic of autism is quite common to be on the TV news, that means that respondents who answered “no” to this question are possibly avoiding this specific topic or maybe even a general topic of disability.

There were 69 respondents (23,2%) who stated that they read some article in a newspaper or watched some reportage on TV about people with autism and their communication. Author expected a lower number of respondents in this category and may state that the answers showed a positive effect of mass media (newspaper and TV) on awareness about the topic of autism and AAC or partially just autism.

Newspaper and TV as a resource of information	Absolute frequency	Relative frequency
Yes	83	27,5%
Yes, but only about autism	140	46,4%
No	79	26,2%
Total	**302**	**100%**

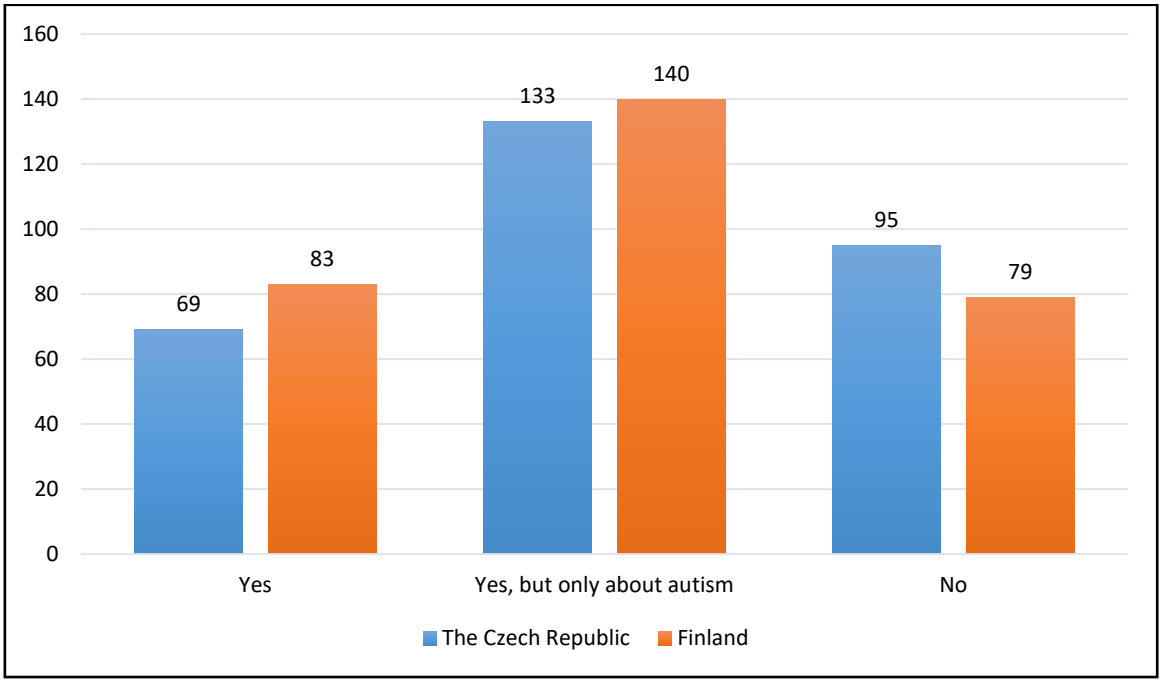
Table 23 *- Newspaper and TV as a resource of information, Finland*

The most represented category in Finland was “Yes, but only about autism” (140; 46,6%). This result stated that there are many articles or reportages but still not enough of them include a topic of AAC systems.

There were 83 respondents (27,5%) who answered “yes” to the question and watched a reportage or read an article which included both, autism and the communication systems. This fact determines that in Finland the mass media focuses at least a bit on the topic individual with autism and their communication.

The last, least favourite option was option “no” which was represented by 79 respondents (26,2%) and these people have never watched any reportage or read any article related to this topic. This might be again caused by a high representation of young people and male gender. First, in young people is not that common to use the TV that much and second,

men are not in generally that interested in the topic of disability as women might be (see question nineteen and twenty).



Graph 18 *- Newspaper and TV as a resource of information, comparison*

In both countries was the most common option "Yes, but the article or reportage was only about autism". This category was represented by 133 Czech people (44,8%) and by 140 Finnish people (46,6%). This category does not provide big differences between the number of respondents and may be stated that in both countries are common to see articles or reportages about a general topic of autism.

There was a difference of 14 people between the number of Czech people (69; 23,2%) and Finns (83; 27,5%). In this category, Finnish respondents watched more reportages or read more articles about people with autism and their communication. This might be possibly caused by the higher representation of this topic in Finnish mass media.

To have a more precise number for a people who watched a reportage or read a newspaper article about the general topic of autism, we need to add to the "yes, but only about autism" category people who answered "yes". Altogether we may see, that there were 202 respondents (68,0%) in the Czech Republic and 223 respondents (73,8%) in Finland.

This fact may conclude that mass media, precisely TV, and newspapers are trying to increase the awareness about autism, but to get information about communication systems used by people with autism is not that common topic.

In addition, there were 95 respondents (32,0%) who answered “no” in the Czech Republic and 74 (26,2%) in Finland. This fact may show a slight difference in a number of people in this category and this might be caused by the fact that newspaper and TV in Finland is a bit more orientated on the topic of autism, or on people with autism and their communication.

6.6 Hypotheses verification

There were four hypotheses stated in the beginning of the chapter four. These hypotheses will be examined and stated as correct or false.

6.6.1 Hypothesis one

H2: If there will be any difference between self-evaluated awareness about autism and self-evaluated awareness about how to communicate with a person with autism who does not use speech, then the collected data about TV and newspaper media will state similar differences.

The hypothesis may be stated as a partly correct as there were some differences between the numbers of respondents in each question and between both countries and we need to take into an account also the mentalities of both societies.

There were 289 (97,3%) of respondents, who were aware of autism and altogether 202 respondents (68,0%) have ever encountered the topic of autism whilst the TV watching or newspaper reading. In the other case, 66 people (22,5%) stated that they are aware of how to communication to the person with autism and 69 (23,2%) agreed on seeing or reading about this topic. This hypothesis shows the high influence of mass media, and this should be considered as an important fact whilst trying to increase the awareness about the autism and communication.

The Finnish data showed that 189 respondents (95,6%) were aware of the topic of autism and 223 (73,9%) were encountered this topic on the TV or newspaper. In contrast, there were 56 (18,6%) respondents aware of the topic autism and communication and 83 people (27,5%) who saw this topic on the TV or in the newspaper. Finnish data provides more diversity. These results show that Finnish are more likely to consider themselves not educated enough, even though they obviously already gained some information about this topic.

6.6.2 Hypothesis two

H3: If there will be more Finnish than Czech respondents who had a person with autism as a classmate or visited the same school, the general public self-evaluated awareness will be higher than in the Czech Republic.

There were 65 (40,1%) Finnish respondents who were classmates or visited the same schools as a person with autism, and the society self-awareness about autism and communication was stated as a lower, number 2 on a scale from 1 to 5 when 1 is much lower and 5 is much higher. In contrast, there were only 14 respondents (8,4%) in the Czech Republic who visited the same school or class as a person with autism, and the society awareness about a topic of autism and communication was evaluated as much lower by the most respondents 160 (53,9%).

These results determine the hypothesis as correct and show that raising of integration or inclusion may increase the awareness about the communication of people with autism in the whole society.

6.6.3 Hypothesis three

H3: If there will be any preferred resources for personal awareness raising, then they will be the ones who do not feel like time-consuming and do not require any additional efforts.

The most preferred resources for personal awareness raising were in the Czech Republic: advertising campaign on TV (185; 62,3%), possibility to meet the person who uses a different type of communication than speech (163; 54,9%), and web page (128; 43,1%). In Finland, the most preferred resources were: web page (190, 62,9%), possibility to meet the person who uses a different type of communication than speech (146; 48,3%), and advertising campaign on TV (136; 45,0%).

As in the both cases the option “possibility to meet the person who uses a different type of communication than speech” was the second most preferred option. Considering this fact, we may conclude that the hypothesis is not correct and people are willing to invest some time into their personal awareness raising and are willing to put some additional effort, as may be to travel to some place, pay for the public transportation or gas, etc.

6.6.4 Hypothesis four

H4: If there will be any difference between experienced nonverbal communication with a stranger and protentional verbal communication with a person with autism, then the amount

of willingness to communicate to a person with speech difficulties and autism will be visible and can be compared between the Czech Republic and Finland.

In the Czech Republic, there were 179 respondents (60,3%) who have ever experienced usage of nonverbal communication with a stranger, and 166 (55,9%) would try to use this type of communication with a person with autism. In addition to this number, there were another 108 people (36,4%) who would try to use these systems to communicate to a person with autism but they were not sure if they would be able to manage that. Altogether, there were 274 respondents (92,3%). This comparison confirms the hypothesis and shows that there is a visible willingness of people to try to communicate to a person with autism.

In Finland, 233 respondents (77,2%) stated that they have experienced the nonverbal communication with some stranger before. There were 172 respondents (57,0%) who would try for sure to use nonverbal communication to communicate to a person with autism and another 85 (28,1%) who would try but were not sure if they would be able to handle that. Altogether, there were 257 Finns (85,1%) who were willing to try to communicate to a person with autism. However, the difference between the number of experienced Finns and Finns who would use it to communicate with a person with autism was not that big, the number of willingness was still a bit higher than the experienced one. And in addition, in the number of people who have ever tried to communicate to some stranger by nonverbal communication usage may be included also some number of people with autism or some other disability.

In conclusion, this hypothesis can be considered as correct and confirmed.

6.7 Discussion

The awareness day of autism and the awareness month of AAC reached this year (2017) the tenth anniversary, but only the autism awareness has extremely raised. These facts were visible in the collected data about awareness in both countries; the awareness about autism was in both countries high and on the contrary, awareness about communication of people with autism and communication systems was not that high, but people showed interest to learn more about this topic.

The previous study about a general public awareness in the Northern Ireland about autism confirms that the general public is well aware of autism and has some knowledge about the difficulties faced by individuals with autism and their families (Dillenburger, et al., 2013). This results can be confirmed by data collected in this study as 189 people (97,3%) in the Czech Republic and the same number of people (189; 95,6%) in Finland stated that they

have heard about autism, and approximately half of the respondents in each country knew a person with autism. Another study in France determined that 95% of general public recognized the name of autism and fewer than 70% could state something specific about this disorder (Durand-Zaleski, 2012).

The main goal of the thesis was to determine if there exist differences between a general public awareness in the Czech Republic and Finland about the topic of AAC usage possibilities in individuals with autism. The results between both countries were unexpectedly more similar than was assumed before the questionnaire survey creation. However, there were some visible differences between the Czech and Finnish respondents. Finnish respondents were possibly more objective in self-evaluation and critics. This was visible in the questions number eight and nine. There was a big difference between data collected in the Czech Republic (179 vs. 274 respondents) about nonverbal communication usage with a stranger and a person with autism (see question number eight and nine). In contrast, in Finland, the data varied only slightly (233 vs. 257). Finns are more used to the self-evaluation and a reason is that the self-evaluation is a process which is included in every school and have a long tradition in a Finnish education.

Finnish respondents provided a more open-minded approach to people with autism by stating a fact that "everything is possible to use" as an AAC intervention. In contrast, there were more Finnish (75; 24,8%) than Czech (30; 10,1%) respondents who were not interested in this topic and did not want to learn more. However, these conclusions may seem contradictory, a factor of age and gender representation was probably a key fact (see chapter 6.1). The society-evaluation about general public's awareness was stated by the largest number of respondents in the Czech Republic as low (160; 53,8%) and in Finland was stated as lower (137; 45,3%) and countries positively agreed on an importance of inclusion but there were more personal experiences in Finnish respondents (see question three) and in generally, respondents felt positive about this topic, which is a sign that it must be possible to increase the awareness in the public society.

Was showed that TV and newspapers put higher preference on a general topic of autism than on AAC methods and how to use them. In addition, there was stated that in Finland was a bit higher percentage of reportages or articles appearing on TV or in the newspapers (73,9% in Finland, 68% in the Czech Republic). Mass media interventions may have an effect on prejudice reduction, but there is no sufficient evidence to state their influence on discrimination (Clement, S. et al., 2013). More research and data collecting are needed in the

future to determine the representation of this topic in TV and newspaper to see if the number of reportages and articles is increasing together with again examined awareness.

As this study is the first ever which compares the Czech Republic and Finland and in a topic of autism and AAC, there is no possible comparison of this precise topic with other researches. However, there are some limitations which could be improved in the possible future study to make the results more reliable.

One big limitation was in not including a term connected to the specification of a person with autism, to a person with autism "with speech difficulties" or "who do not use speech". There were many respondents who approached the questionnaire answering from the point of view of a person with an Asperger syndrome. Another fact which probably affected the reliability of results were the age and gender representation in the Czech Republic and Finland, as both varied a lot, it might have affected some of the collected data. The author would recommend for a future research to avoid that big diversity in the age and gender (see the chapter 6.1). And the last possible limitations were the open questions number four and six, which probably caused the lower rate of response and the data was difficult to process and impossible to make a real number out of responses as the answers varied a lot.

This results may be used as a preview of awareness raising in both countries, some hints mentioned by the respondents could be used to create more resources around all of us.

6.8 Conclusion of the empirical part

The empirical part consists of twenty-two questions which were divided into five groups: personal question types, autism awareness question types, communication with a person with autism question types, QR code aid question types, and society-evaluation, personal awareness and its factors question types. Each question was interpreted and graphically visualised by tables and graphs. First, data were interpreted separately for each country, and afterward compared to each other and its comparison was visualised in the graphs.

We may conclude that an awareness about autism was in generally high in both countries, but the respondents were not much aware of how to communicate to a person with autism uses a different communication system than a speech. Finnish respondents were more theoretically educated about the autism and more open-minded about the communication systems which may be used in individuals with autism. However, the important message gained from the collected data in both countries was that people would like to know more

about these systems and are willing to communicate with the people with autism. This brings us a hope for a future and hopefully increased inclusion of the individuals with autism into the general society.

Finnish sample included more respondents who experienced integrative or inclusive education and this fact has probably influence on the whole society awareness about autism and communication topic, as the Finnish society awareness was evaluated as higher than in the Czech Republic. As many Finnish people stated, AAC systems should be included in a curriculum of each school or at least the school should let pupils try these systems in real and the best with would be if they could try them with a person with that precise disability. The personal experience was in both countries between the three most favorite options for personal awareness raising.

People in the Czech Republic had still a tendency for a labelling of people with autism as a person who has “own world”. This phrase appeared in more than 50% of autism describing answers. On the other hand, Finnish respondents showed less tolerating and more hateful approach to the individuals with autism. As Finland is well-known for its equality and open-minded thinking, these answers were negatively surprising and were caused probably by a high representation of people under the age of 20 who are more likely to state this kind of opinions.

The author collected some hints for a possible future research of the QR code aid and got some new hints for awareness raising activities, as YouTube videos, comics or information leaflets at places like a bus stop or restaurant.

In conclusion, the results of the questionnaire survey were positive and brought a hope for future efforts to increase the awareness about the topic of autism and communication. People felt open to get more education about how to communicate to a person with autism and showed a willingness to meet and communicate to a potential person with autism.

Conclusion

The theoretical part of the thesis provided an insight into the topics of autism, autism and communication, alternative and augmentative communication, and public awareness. The topic of autism included a variety of definitions of autism, the historical development of an approach to the autism, and the diagnostics criteria of autism which described all developmental disorders which may be found under the autism spectrum disorders umbrella term. The chapter about autism and communication specified and described the terms verbal and nonverbal communication and the communication process, and determined specifics of the communication in individuals with autism. Alternative and augmentative communication chapter included its definition, classification, and subsequent introduction of all systems which may be used in the individuals with autism, followed by the effects of alternative and augmentative communication on a person with autism. The last chapter of the theoretical part was a short introduction into the term of public awareness and its importance.

Empirical part of the thesis provided information about a current state of the topic abroad, in the Czech Republic and Finland, described a methodology (goals and hypotheses, questionnaire survey and its battery of questions, and characteristics of examined sample), provided an analysis of the results and its interpretation, hypotheses verification and short conclusion of the results.

The main goal of the thesis was to determine, if there exist differences between general public awareness in the Czech Republic and Finland, about the topic of AAC usage possibilities in individuals with autism, and to compare the potential differences and investigate which potential factors might influence a level of the awareness in each country. The main goal was more specified in the partial goals which were to determine the overall views of the respondents awareness about autism; to investigate the overall view of the respondents' awareness about AAC and their willingness to use these systems; to investigate respondents' opinions about the awareness in their country and to determine preferred and possibly affecting factors for increasing personal awareness about the questionnaire topic; and to compare the collected data and state the differences between the countries' awareness. The main and partial goals of the thesis were successfully fulfilled, interpreted and visually displayed.

There were visible differences between public awareness in the Czech Republic and Finland, however, the differences were not as big as was expected. All differences were compared and as main factors which influenced the level of the awareness in each country

were determined: the inclusive education, personal experiences, and mass media (TV, newspapers, and internet). In generally, the Finnish people had more theoretical knowledge about the autism and communication, but the Czech people showed more interest into this topic. The results showed that the awareness in both countries is not high enough and people do not feel like they have enough knowledge to be able to communicate with a person with autism with speech difficulties.

The results showed the need for the awareness raising not only on the general topic of autism but especially on the topic of alternative and augmentative communication systems. If every person had a general overview of the AAC systems, lives of hundreds of people with speech difficulties would change, and there would not be as big barriers as are nowadays between people with speech difficulties and the society.

Collected data were intended to be offered to organisations which help to people with autism and their families; based on the idea that some hints stated by the respondents could help to create a suitable tool for the awareness raising. At the same time, the author is going to use the results for own future research.

Future research could be divided into a few studies when each would be focused on the awareness about one specific communication system or about one specific resource of awareness.

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List of abbreviations

ICD	International Statistic Classification of Diseases and Related Health Problems
ASD	Autism spectrum disorders
EIA	Early Infantile Autism
DMS	Diagnostic and Statistical Manual of Mental Disorders
IQ	Intelligence Quotient
AAC	Alternative and Augmentative Communication
TEACCH	Treatment and Education of Autistic and Related Communication Children
PECS	Picture Exchange Communication System
SGD	Speech-generating devices

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Appendix 1– Questionnaire in Czech language

Informovanost veřejnosti o možnostech komunikace osob s autismem

Dobrý den,

jmenuji se Petra Kuchařová a jsem studentkou čtvrtého ročníku Univerzity Palackého v Olomouci, Ústavu speciálněpedagogických studií. Chtěla bych Vás touto cestou požádat o vyplnění krátkého dotazníku, který je zaměřen na téma "osoby s autismem a jejich komunikace".

Tento dotazník je zcela anonymní a získané informace jsou určeny pouze pro mé osobní užití, přesněji jako součást mé bakalářské práce a pro budoucí studium.

Vážím si Vašeho času a ochoty. Děkuji předem za vyplnění.

S přáním krásného dne,

Petra Kuchařová

1. Jak dlouho žijete v České republice?

- ◯ Narodil jsem se tady
- ◯ Déle než 10 let
- ◯ Méně než 10 let
- ◯ Nežiju v České republice

2. Slyšeli jste někdy o pojmu AUTISMUS?

- ◯ Ano, osobně znám/znal(a) jsem jedince s autismem
- ◯ Ano, ale nikdy jsem se osobně nesetkal(a) s jedincem s autismem
- ◯ Ano, ale nedokážu si pod tímto pojmem představit nic konkrétnějšího
- ◯ Ne, nikdy jsem o tomto pojmu neslyšel/a

3. Pokud jste v předchozím případě odpověděli: "Ano, osobně znám/znal(a) jsem jedince s autismem", pokračujte touto otázkou. Pokud ne, přejděte prosím na další otázku. Seznámili jste se s danou osobou s autismem během Vaši školní docházky?

- ◯ Ano, byl/je to spolužák ve třídě
- ◯ Ano, chodil/chodí do jiné třídy v mé škole
- ◯ Ne, seznámili jsme se jinde (specifikujte prosím, kde nebo jak jste se seznámili) _____

4. Jednoduše vysvětlete, co je to AUTISMUS

5. Už jste někdy komunikovali s osobou s autismem?

- ◯ Ano
- ◯ Nejsem si toho vědom(a)

6. Napište jednou větou, jakým jiným způsobem než řečí byste mohli komunikovat s osobou s autismem:

7. Myslíte si, že máte dostatek znalostí o tématu "Jak komunikovat s osobou s autismem, která neužívá mluvenou řeč"?

- ◯ Ano, mám dostatek znalostí a nepotřebují vědět více.
- ◯ Ano mám, ale rád(a) se informuji o nových poznatcích k tomuto tématu.
- ◯ Ne, ale rád(a) bych se dozvěděl(a) více o tomto tématu.
- ◯ Ne, nemám zájem dozvědět se více o tomto tématu.

8. Už jste někdy komunikoval(a) s NEZNÁMÝM člověkem pomocí alespoň jedné z těchto druhů komunikace: ukazování, odpověď ano/ne, pohledem či výrazem v obličeji?

- ◯ Ano
- ◯ Ne

9. Myslíte si, že byste dokázal(a) využít jeden z výše uvedených druhů komunikace i při setkání s osobou s autismem, která nemluví?

- ◯ Ano, pokusil(a) bych se.
- ◯ Ano, ale nejsem si jist(á), zda bych to zvládl/a.
- ◯ Ne, kvůli strachu z odlišnosti a reakce těchto osob.
- ◯ Ne, kvůli strachu z komunikace s neznámými lidmi.
- ◯ Jiná

10. Byl(a) byste ochoten/ochotná zapojit Váš chytrý mobilní telefon do komunikace s osobou s autismem, která neužívá mluvenou řeč?

- ◯ Ano
- ◯ Ne
- ◯ Záleželo by na dané situaci
- ◯ Nemám chytrý mobilní telefon

11. Představte si, že se nacházíte v situaci, kdy k Vám na ulici přijde osoba, která však nemluví a ukáže vám pouze kartičku s krátkým textem a kódem. Po spatření kterého z daných obrázku byste se rozhodl/a naskenovat daný QR kód do Vašeho chytrého mobilního telefonu?

◯ 1 ◯ 2 ◯ 3 ◯ Nenaskenoval(a) bych ani jednu z uvedených možností.

12. Pokud jste v předchozí otázce odpověděli "Nenaskenoval(a) bych ani jednu z uvedených možností", z jakého důvodu jste se rozhodli pro tuto odpověď? Pokud jste označili jinou z možností, přejděte prosím na další otázku.

- ◯ Ani jedna z možností mě nezaujala natolik abych naskenoval(a) daný kód.
- ◯ Myslel(a) bych si, že je to nějaký podvod.
- ◯ Nemám zájem pomáhat lidem.
- ◯ Jiná

Jak vysoká je dle Vašeho názoru informovanost široké veřejnosti České republiky o tématu "Jak komunikovat s osobou s autismem, která neužívá mluvenou řeč"?

	1	2	3	4	5	
Nízká informovanost	◯	◯	◯	◯	◯	Vysoká informovanost

14. Které z uvedených možností by nejvíce pomohly ke zvýšení Vaší osobní informovanosti o tomto tématu (zaškrtněte max. 3 odpovědi)?

- ☐ Letáky, billboardy
- ☐ Bezplatný seminář
- ☐ Reklamní kampaň v televizi
- ☐ Workshop
- ☐ Webová stránka
- ☐ Možnost osobního setkání s osobou s autismem, která užívá jinou komunikaci než mluvenou řeč
- ☐ Jiná

15. Označte, jak moc se ztotožňujete s tímto výrokem:

	Souhlasím	Částečně souhlasím	Nesouhlasím
Zvýšení informovanosti s tímto tématem může přispět k lepšímu začlenění osob s autismem mezi většinovou populaci.	○	○	○

16. Snažil(a) jste se někdy ve svém volném čase vyhledat více informací o tématu komunikace u jedinců s autismem?

- ○ Ano
- ○ Ne

17. Pokud jste v předchozí otázce odpověděli "ANO", uveďte které zdroje jste využili pro vyhledání daných informací (označte max. 2 odpovědi). Pokud jste odpověděli "NE", přejděte prosím na další otázku.

- ☐ Internet
- ☐ Odborná literatura
- ☐ Film nebo dokument
- ☐ Kniha (příběh obsahuje téma autismu a komunikace)
- ☐ Jiný zdroj

18. Setkali jste se někdy v denním tisku, televizních novinách či internetovém tisku se článkem či reportáží týkající se osob s autismem a jejich komunikace?

- ◯ Ano
- ◯ Setkal(a) jsem se s článkem či reportáží zaměřenou na osoby s autismem, avšak zde nebylo zmíněno nic o komunikaci
- ◯ Ne

19. Vaše pohlaví:

- ◯ Žena
- ◯ Muž
- ◯ Jiná

20. Váš věk:

- ◯ Méně než 20 let
- ◯ 20 - 29 let
- ◯ 30 - 39 let
- ◯ 40 - 50 let
- ◯ Více než 50 let

21. Vaše nejvyšší dokončené vzdělání:

- ◯ Základní vzdělání
- ◯ Středoškolské vzdělání s výučním listem
- ◯ Středoškolské vzdělání s maturitou
- ◯ Vyšší odborné vzdělání
- ◯ Vysokoškolské vzdělání
- ◯ Speciálněpedagogické vzdělání

22. Vaše místo bydliště (uveďte kraj):

Appendix 2 – Questionnaire in English

Public awareness about communication possibilities of people with autism in Finland

Hello!

My name is Petra Kucharova and I am a student at Palacký University in the Czech Republic, currently living in Finland. I would like to ask you to fill in this short questionnaire, focused on the topic of "people with autism and their communication".

This questionnaire is fully anonymous and collected information will be used only for my personal use, precisely for my bachelor thesis research.

I really appreciate your time and the willingness to cooperate. Thank you for completing the questionnaire!

Best regards,

Petra Kucharova

1. How long have you lived in Finland?

- ◯ I was born here
- ◯ Less than 10 years
- ◯ More than 10 years
- ◯ I do not live in Finland

2. Have you ever heard about AUTISM?

- ◯ Yes, I know/knew a person with autism
- ◯ Yes, but I have never met anyone with autism
- ◯ Yes, but I cannot imagine anything specific under this term
- ◯ No, I have never heard about autism

3. If you answered "Yes, I know/knew a person with autism" to the question above, please answer this question. "Did you meet the person with autism at school/college/university?". If you chose another option, continue to the next question.

- ◯ Yes, we studied at the same school/college/university, in the same class
- ◯ Yes, we studied at the same school/college/university, in a different class
- ◯ No, we met somewhere else (please specify, where did you meet the person with autism) [ ]

4. To the best of your knowledge explain, what does AUTISM mean?

5. Have you ever communicated with a person with autism?

- ◯ Yes
- ◯ Not that I'm aware of

6. Describe, what types of communication (other than speech) do you think can be used by a person with autism?

7. Do you have enough knowledge about the topic "How to communicate to a person with autism, who cannot use speech"?

- ◯ Yes, I do and I do not need to learn more
- ◯ Yes, I do but it is always good to learn more
- ◯ No, but I would like to learn more
- ◯ No, I am not interested into learning more about this topic

8. Have you ever communicated with a STRANGER by use of any of these types of communication: pointing, answering yes/no, face expression?

- ◯ Yes
- ◯ No

9. Would you be able to use at least one of the types of communication mentioned above to communicate to a person with autism, who cannot use speech?

- ◯ Yes, I would try
- ◯ Yes, but I am not sure if I would be able to manage that
- ◯ No, because of a worry of divergence or their reaction
- ◯ No, because of a worry of communication with strangers
- ◯ Other

10. Would you be willing to use your smartphone to communicate with a person with autism, who cannot use speech?

- ◯ Yes
- ◯ No
- ◯ Would depend on the situation
- ◯ I do not have a smartphone

11. Imagine a situation that a random person, who does not speak, shows you a card with a short text and code. Which one of the given pictures would convince you to scan the QR code to your smarphone?

◯ 1 ◯ 2 ◯ 3 ◯ I would not scan any of the options above.

12. If you answered "I would not scan any of the options above", please answer this question. "Why did you decide to choose this option?" If you chose another option, continue to the next question.

- ◯ None of the options were good enough to convince me
- ◯ I would think it is some trick to get my personal information or virus
- ◯ I am not interested into helping people
- ◯ Other

How high is, in your opinion, the awareness of the general public in Finland about the topic "How to communicate to person with autism, who cannot use speech"?

	1	2	3	4	5	
Low awareness	◯	◯	◯	◯	◯	High awareness

14. Which of given options would help you to increase your personal awareness about this topic (choose max. 3 answers)?

- ☐ Leaflets, billboard
- ☐ Free seminar
- ☐ Advertising campaign on TV
- ☐ Workshop
- ☐ Web page
- ☐ Possibility to meet person who uses different type of communication than speech
- ☐ Other

15. How much do you agree with this statement?

	Agree	Partially agree	Disagree
Increased awareness about this topic could help better inclusion of people with autism, who cannot use speech, into the general population.	○	○	○

16. Have you ever tried (in your freetime) to find more information about this topic?

- ○ Yes
- ○ No

17. If you answered "Yes", to the question above, state the resources you used to find the information. If you chose another option, continue to the next question.

- ☐ Internet
- ☐ Specialized literature
- ☐ Movie or documentary
- ☐ Novel (story includes the topic of autism and communication)
- ☐ Other

18. Have you ever encountered an article or reportage in newspaper, TV news or online newspaper concerning people with autism and their communication?

- ◯ Yes
- ◯ Yes, but it concerned only the people with autism, not their communication
- ◯ No

19. Gender:

- ◯ Female
- ◯ Male
- ◯ Other

20. Age:

- ◯ Younger than 20 years old
- ◯ 20 - 29 years old
- ◯ 30 - 39 years old
- ◯ 40 - 49 years old
- ◯ Older than 50 years old

21. Highest completed education:

- ◯ Perusopetus (Basic education)
- ◯ Lukiokoulutus (High school education)
- ◯ Ammatillinen koulutus (Vocational education)
- ◯ Ammattikorkeakoulu/Yliopisto (University degree)
- ◯ Erityisopetuksen tutkinto (Special education degree)

22. Place of residence (region)

ANOTACE/ABSTRACT

Jméno a příjmení (Name and surname):	Petra Kuchařová
Katedra (Deparment):	Ústav speciálněpedagogických studií
Vedoucí práce (Supervisor):	Mgr. Zdeňka Kozáková, DiS., Ph.D.
Rok obhajoby (Year of defense):	2017

Název práce (Name of thesis):	Public awareness about the usage possibilities of alternative and augmentative communication by people with autism, comparative study between the Czech Republic and Finland
Název práce v češtině (Name in Czech language):	Informovanost veřejnosti o možnostech využití alternativní a augmentativní komunikace u jedinců s autismem, srovnání mezi Českou Republikou a Finskem
Anotace práce (Abstract):	Awareness about the alternative and augmentative communication usage possibilities in individuals with autism affects their integration/inclusion into a society and improves a quality of their lives. As being a human is based on social interactions, everyone should have the same opportunity to interact with others and this should be allowed to all individuals, regardless of their abilities or disabilities. Bachelor thesis is focused on the general public awareness determination about autism and AAC usage possibilities in the Czech Republic and Finland and their subsequent comparison. The main goal of the thesis is to determine, if there exist differences between general public awareness in the Czech Republic and Finland, about the topic of AAC usage possibilities in individuals with autism, and to compare the potential differences and investigate which potential factors might influence a level of the awareness in both countries.

Klíčová slova (Key words):	Autism, autism spectrum disorders, communication, alternative and augmentative communication, public awareness, Czech Republic, Finland
Anotace v češtině (Abstract in Czech):	Informovanost veřejnosti o možnostech využití alternativní a augmentativní komunikace u jedinců s autismem má vliv na jejich integraci/inkluzi do společnosti and zlepšuje kvalitu jejich životů. Jelikož je lidské bytí založeno na sociálních interakcích, všichni by měli mít stejnou možnost interakce s ostatními a toto by mělo být umožněno všem jedincům, nehledě na jejich schopnosti či omezení. Bakalářská práce se zabývá informovaností veřejnosti o autismu a možnostech využití alternativní a augmentativní komunikace v České Republice a Finsku a jejich následné porovnání. Hlavním cílem práce je zjistit, zda existují rozdíly mezi informovanosti o možnostech využití alternativní a augmentativní komunikace u jedinců s autismem, a porovnat potenciální rozdíly a vyzkoumat, které faktory mohou ovlivnit stupeň informovanosti v obou zemích.
Klíčová slova v češtině (Key words in Czech):	Autismus, poruchy autistického spektra, komunikace, alternativní a augmentativní komunikace, informovanost veřejnosti, Česká Republika, Finsko
Přílohy vázané v práci (Appendixes bounded in thesis):	**Appendix 1** – Questionnaire in Czech Language **Appendix 2** – Questionnaire in English
Rozsah práce (Size of thesis):	109 s. + 10s příloh, 109 pages + 10 pages of appendixes
Jazyk práce (Language of thesis):	English