

# Tolerance and Perspective towards Disability: A Mixed Methods Study

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**Abstract**—Society has a lot of diversities according to sex, age, religion, abilities or disabilities, education, etc. According to differences, everybody needs to be tolerated and equally included in society. In order to provide quality inclusion, society needs to tolerate differences. This study relates to the differences in disability. To examine tolerance towards disability and inclusion, this study was conducted with students attending regular elementary and high school. The main goal was to examine their attitudes towards their classmates and elderly people with disabilities. The study begins with the hypothesis that the environment has a highly developed tolerance towards people with disabilities, regardless of age. The sample was divided according to tasks and methodology analysis. Students attending regular elementary school were asked to make drawings of their classmates with disabilities. The drawings were analyzed using quantitative methodology according to the colors children used and the position of character on the paper. Students attending high school and members of general population were asked to complete a questionnaire designed for this study during a workshop held on the International Day for Tolerance. Responses were analyzed using qualitative methodology. The hypothesis was confirmed.

**Keywords**—Classmates, disability, students, tolerance.

## I. INTRODUCTION

### A. People with Disabilities and the Society

OVER the last few decades, increased attention has been paid to children and adults with disability. In relation to history, people with disabilities have a greater impact in society. “They include those who have long-term physical, mental, intellectual or sensory impairments that, in interaction with various obstacles, may prevent their full and effective participation in society on an equal basis with others” [1]. According to [1], disability is not only a person's injury, but a result of the interaction of a person's injury (which does not include only physical damage as the most visible injury) and the environment. In other words, society is what constructs disability through its disadvantage, but it can also remove it through technical adaptation of space, providing aids and other forms of support.

### B. Tolerance: Attitudes and Research

Tolerance or toleration can be defined as the state in which one tolerates, or puts up with something or somebody, conditionally [2]. The term tolerance most often refers to the submission of physical or mental pain, discomfort, stress, pressure, or negative environmental influences. It relates to the tenderness associated with the personal taste of the individual

as well as their prejudices and stereotypes [3]. Social tolerance involves the acceptance of something unpleasant, different. In this sense, it includes an attitude towards a person, and hence the ways in which they are treated.

In this paper, social tolerance is important, and focus will be towards it. There is often a misunderstanding of what tolerance actually means. Its meaning is very simplified with the term “acceptance of different”. Stereotypes and prejudices are distorted images of people. As such they affect the development of tolerance in a negative manner. They disregard the individual differences among people, so their attitudes towards the entire population are generalized. People are different in terms of religion, color, gender, education level, political beliefs, etc. It is not uncommon to mention people with disabilities in this context, as well. People with disabilities often face “insensitivity”, which can make socializing with other people difficult for them. In some cases, insensitivity occurs when others do not understand the nature of disability, or they do not recognize it. Particularly in school environments, people with disabilities are often unaccepted, disgusted or abused. Learning to be “sensitive” to people with disabilities is an important part of tolerance to others. An important contribution to tolerance for people with disabilities is the involvement of students with disabilities in the educational system. The implementation of inclusive education within regular schools implies a series of activities in the overall school practice of all its participants. In order to examine inclusion, researchers use scales for examining attitudes towards people with disabilities are “Attitudes Towards Disabled Persons Scale” (ATDP – “Skill Standards for People with Developmental Disabilities”) [4]-[6], “Disability Factor Scale – General” (DFS-G – “General Scale of Factors of Difficulty”) [7], and “Interaction with Disabled Persons Scale” (IDP – “Skull Interaction with People with Developmental Disabilities”) [8].

Research on attitudes related to people with disabilities and people with physical disabilities lists several components that affect attitudes. Based on research results, [6] claims that sociodemographic features are associated with attitudes toward people with disabilities, while Clorckers [9], [10] instructs the weak link between socioeconomic and demographic characteristics of attitudes with the exception of age and sex. Clorckers [9], [10] points out that in most cases women show more positive attitude toward persons with disabilities than men.

The same results were found with other researchers [9]-[12]. Yüker and Block [4] compared 129 studies and found that 44% of women included in their study had more positive

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attitudes towards people with disabilities. Other studies did not find gender differences in positive attitudes towards disability [13].

### C. The Importance of Analyzing Children's Drawings

Children's drawings are an indicator of children's intellectual and motor maturity. By monitoring the development of drawings, which follows the intellectual and cognitive development, one can also monitor a cognitive development of a child. The child's drawing most often shows child's internal experiences, their spatial conceptions, certain special meanings, child's understanding of time and sequence of events, and so forth [14].

From the earliest age, children are creatively expressing themselves. They arrange, rearrange, combine and give new dimensions to the objects that attract them [15]. Shortly afterwards, and in interaction with the panel which allows them to leave trace with their fingers, children begin to make their first drawings. Making drawings is considered as the sincerest way of child's expression of their feelings and thoughts [15]. Taking this into consideration, in this study we have decided to use children's drawings to analyze their attitudes towards their friends and peers with difficulties.

By analyzing children's artwork, we can understand how they feel and determine whether they have adopted main features of their current developmental phase. Thereby it is highly important to include a child's analysis of the artwork as it can provide an explanation of the artwork from their perspective, and at the same time help in creating a positive image of themselves. It is desirable that all children are involved in the analysis, which is most commonly implemented by all of them being seated in a circle. It is necessary to allocate a few minutes for each artwork and prepare a few questions for each child, but let them just say something, if they want to. Other children should be encouraged to listen attentively and not to interrupt the child who is speaking. By encouraging children to participate actively, it retains interest in art and receives affirmation of their efforts.

## II. METHODOLOGY

### A. Research Design

The study was designed to explore the tolerance towards disability. A qualitative analysis was used to identify perception of children with disability in regular schools and attitudes towards them. Typical developing children were asked to draw a classmate with disability. To understand the meanings of their drawings, a content analysis of the drawings was carried out developing *codes*: emotions (neutral facial expression and positive emotion) and *categories*: position of hands, size of figures in drawings, colors, other drawn elements, written words. Qualitative data collection was carried out in four schools in three counties in Croatia. Schools are selected on the condition that students with disabilities are educated.

Quantitative data, used to identify attitudes towards people

with disability, were collected during a workshop held on the International Day for Tolerance, on 14 November 1814. The workshop was open free of charge to everybody interested in participating. At the end of the workshop, the participants filled out the survey designed for this research. The data were analyzed using SPSS.

### B. Participants

130 children, aged 7-10 years made drawings depicting their own perception of a classmate with disability. Four schools in three counties in Croatia were included in this survey with students with disabilities included within four grades. Students with disabilities included one student diagnosed with cerebral palsy and a moderate intellectual disability, and three students diagnosed with a moderate intellectual disability.

49 participants participated in a workshop held on 14 November 1814 on the International Day for Tolerance in the premises of the local Red Cross organization. A criterion for participants in the workshop was not defined.

### C. Procedure

On 14 November 2016, researchers visited four schools in agreement with principals and teachers. Each visit lasted one school lesson, i.e. 45 minutes, and was arranged when students with disabilities would not attend the class due to rehabilitation support of professional associate in the school. The purpose of the visit was to discover attitudes towards students with disabilities who are being educated within a regular school system. Teaching unit planned for this lesson was tolerance.

At the beginning, researchers introduced themselves to students and clarified the purpose of the visit. The researchers introduced themselves to students emphasizing the characteristics of their behavior which make them different from the rest of the society. The students were encouraged to continue doing the same.

During the main part of the lesson, researchers discussed differences and a need to accept them with students. In interaction with researchers, students familiarized themselves with the concept of tolerance and its meaning. During the discussion, the students identified *differences* in their class and positive attitudes towards diversity were discussed.

Following the discussion, at the end of lesson students were asked to make a drawing of a colleague with a disability from their own perspective. Drawings were used as a communication tool between researchers and participants. Afterwards they were analyzed using *codes*: emotions; and *categories*: position of hands, size of figures in drawings, colors, other drawn elements and written words.

Quantitative data was collected during a workshop entitled "Tolerance towards disability" which was held in the premises of a local Red Cross. Workshop was publicly advertised. Participation was open free of charge to everyone who wanted to participate. Lecture held at the beginning of the workshop introduced participants to tolerance, disability and its forms. Subsequently, participants were divided into five groups.

Groups were further divided according to types of disability: visual impairment, hearing impairment, behavioral disorders and mental health problems, intellectual disability, damage of organic systems.

The group representing persons with visual impairments was given a blindfold in the examinations of the tasks and the white cane for movement. Their assignment was to move around the room with blindfold. Participants who had hearing impairments were given the big headphones, so they would not hear the rest of the group talking to them. Another group of participants represented people with behavioral disorders and mental health problems. Task of each individual in group was to try to move around the room and touch different contents while the rest of the group tried to limit them. Participants representing persons with intellectual disabilities were given a mathematical task at the faculty level to solve.

The last group with the damage of organic systems was the only group with a reward included in a task. Their assignment was to try to open a jar containing chocolate candy which was wrapped with a tape using thick winter gloves. At the end of the workshop, participants completed a survey examining attitudes towards people with disabilities which was designed for this study.

**Hypothesis:** People from all age groups show positive attitudes towards disability. Positive attitudes of disability do not depend on age of participants.

### III. RESULTS

#### A. Qualitative Analysis

Children drawings were coded by two researchers. They used two codes. The main criterion for coding was a facial expression of a drawn figure. According to this code, drawings were divided into two groups and, subsequently, into categories. According to facial expression, two categories were developed: neutral facial expression and positive facial expression.

Of hundred and fifteen drawings, 22,6% express neutral facial expression, which indicates that these children do not experience their classmates with disabilities as happy or satisfied, rather they see them as unhappy and dissatisfied. Their hands are lowered, next to body, which observed from non-verbal communication aspect means they are considered shy and insecure. These drawings are rather small in comparison to the size of paper, which indicates that figures on the drawings do not have significance for authors. Within neutral facial expression, 13,3% drawings include words, that describe figure on drawing: "My friend is nice, pretty, warm." One of these drawings includes child's name. These words and names give general information and conclusions.

TABLE I  
NEUTRAL FACIAL EXPRESSION (26 DRAWINGS)

Category	Number of drawings	Color (dominant)
Hands down	26 (22,6%)	Blue, brown, green
Words	4 (13,3%)	Blue, green, brown, orange
Other drawn content	2 (7,6%)	Blue, green, yellow

TABLE II  
MEANING OF DOMINANT COLORS

Color	Meaning of colors
Blue	Need for socialization [16]
Green	Hiding emotions [16]
Brown	Domination [16]
Yellow	Fading [17]
Orange	Interaction [17]

Some drawings (7,6%) contain objects and imaginations that figures on the drawings enjoy, dinosaurs and nature. This was not considered as expressing something personal in relation to the classmate with disability. If a child played in school with their favorite toy, it's easy to notice they enjoy dinosaurs.



Fig. 1 Code: positive facial expression



Fig. 2 Code: neutral facial expression

Colors make strong impressions on people and visual meanings. Feel and experience of colors are subjective and points to the psychological state of the individual [18]. Dominant colors that were used in analyzed drawings were blue, green, brown, yellow, and orange. According to these meanings, classmates with disabilities are considered as children who want to interact but do not know how or are not

considered interesting to interact with.

Therefore, as the analyzed drawings show, typically developing children do not experience classmates with disabilities as happy, rather they are seen as shy and insecure with a need for socializing and being part of society. According to these colors, they are not an interesting company, as no fun is seen in interacting with children with disabilities. They also indicate that they do not interact with them because no personal items or written descriptions were used on the drawings.

TABLE III  
POSITIVE FACIAL EXPRESSION CODE

Category	Number of drawings	Colors
Head	8 (8,9%)	Black, red, green, no color
Written words	3 (37,5%)	
Body	57 (64%)	
Small in size	32 (56,1%)	Blue, purple
Big in size	13 (26,3%)	
Written words	1 (1,7%)	
Author and figure	2 (3,5%)	Red, blue, yellow, black
Hands in the air	4 (7%)	Blue, brown, purple, grey, orange
Symbols	3 (5,2%)	Yellow
Situations	6 (10,5%)	Green, red, blue
Comics	3 (5,2%)	Green, blue

TABLE IV  
MEANINGS OF COLORS

Color	Meaning of color
Black	Sadness, depression and grief [16]
Red	Passion, strength, aggression and disturbance [16]
Green	Soothing, optimism, suppressing emotions [16]
Purple	Loyalty, dignity, spirituality [17]
Yellow	Joy, fading [17] Childish, happy [16]

Drawings that indicate positive attitude towards classmates with disabilities are present to a much greater extent (77,3%). Also, these drawings stand out in size which means that to these children classmates with disabilities are important and valuable.

In amount of 8,9% drawings within positive facial expression show only head of the figure, so these positive emotions are highlighted and projected. Three of them contain written words that name the figure. Also, three of these drawings are not colored and other contain black, red and green color. Observing the meanings of colors and size, researchers agreed that authors of drawings feel positive towards figures, but also recognize their sadness due to differences. Other meaning authors agreed on is that children may dress in dark colors because their wardrobe is colored dark.

Fifty-seven drawings (64%) show the whole body of a drawn figure. Thirty-two of them are extremely small, which indicates their low importance for the authors of the drawings. Small figures represent less interest from the authors. Also, when the figures hands are lowered down, next to body, body language implies that figures are shy or authors experience them that way. Dominant colors used in these drawings are

blue and purple, which signifies these children are perceived as those who desire to socialize and to be included, which is evaluated positively, but whose companionship is not of great significance.



Fig. 3 Code: Positive facial expression (Category: head)



Fig. 4 Code: Positive facial expression (Category: body)

Other 26,3% of drawings are bigger in size, which indicates a greater importance for the authors. Drawn figures show positive facial expression, however hands are lowered. Dominant color is blue and one of the drawings has a note: "You are very pretty and we are good friends. I love you".

Some drawings show figure and author together holding hands (3,5%). These drawings point to the conclusion of positive attitudes towards figures and companionship with them. Colors used in drawings are red, blue, yellow and black. These categories indicate positive attitudes towards disability and drawn figures. By drawing, children have shown the importance in different friendships in an unconscious and honest way.



Fig. 5 Code: Positive facial expression (Category: author and figure)



Fig. 6 Code: Positive facial expression (Category: body)

Difference between previous (70,3%) and next four drawings (7%) which were analyzed is that figures have their hands in the air. Meaning of these figures indicates more positive emotions, figures that are more sociable and satisfied. Dominant color is again blue, but brown, purple and orange are used, as well.

Some authors did not draw figures but drew symbols that represent something to figures or wrote a message to figures. These drawings point to a high level of respect.

Other authors drew themselves together with the figure with disability, but in a small size. They cite the conclusion that they are friends with figures, but these friendships are not of big importance. Purple and red are dominant colors. Red color used in drawings indicates aggression and disturbance, which is unconsciously projected to the conclusion of this friendship [16].



Fig. 7 Code: Positive facial expression (Category: situation)

In addition to figures, certain drawings also contain various situations: figures in class, playing football, listening to music, playing with dinosaurs or simply enjoying nature. These situations represent positive and relaxed, enjoyable times. With projecting this joy onto figures, these authors express positive emotions and attitudes towards figures with disability. Dominant colors used are blue, purple, and green.

The last category is a little bit different because it represents comics with two main characters: the author and the figure with disability. These show situations with verbal interaction, dialogue between them which is very poor, but represents author's desire to include and to be included by figure with disability, which is very positive. Dominant colors used are blue and green, which, again, represents a desire to socialize.



Fig. 8 Code: Positive facial expression (Category: comic)

### B. Quantitative Analysis

Quantitative analysis data was conducted completing survey specifically designed for this study. Survey questionnaire was divided into three categories: contact with persons with disabilities, attitude towards disability and information about disability. Forty-nine people participated in this workshop, of which female made 53,1%. Age of participants varied from fifteen to fifty-eight. The most frequent age among participants was seventeen, whereas mean age was 27,53. Some participants were still high school students (34,69%). Third grade was the most represented grade among high school student participants.

TABLE V  
CONTACT WITH PERSON WITH DISABILITY

Question	Participants who responded "Yes" (%)
Have you ever met a person with disability?	95,9
Did you ever have close contact with person with disability?	85,7
Is your family member a person with disability?	30,6
Do you know how to approach a person with disability?	87,3
Do you feel fear near a person with disability?	28,6
Are you bothered by the behavior of a person with disability?	2
Are you bothered by the looks of a person with disability?	0
Do you avoid persons with disabilities?	0
Are you bothered by meeting person with disability in public?	2

Participants have mostly met a person with disability (95,9%), part of them due to having a family member with disability (30,6%). Large share of the participants had close contact with person with disability (85,7%), and even more of them believe they know how to approach a person with disability (87,3%). Small share of participants fear of persons with disabilities (28,6%) and just one participant felt bothered by their behavior. None of these participants avoids them, and just one is bothered by meeting a person with disability in public.

Attitude towards disability is mostly positive (98%), the same share of participants feels they need help (98%), and everybody thinks they should be equal, while some participants even think they should be indulged (63,3%). Many of participants feel that persons with disabilities would fit into their company (81,6%), however this share is smaller for the reverse situation (67,3%). None of participants feels that it is easy being a person with disability and some of them even pity persons with disabilities (73,5%).

TABLE VI  
ATTITUDES TOWARDS DISABILITY

Question	Participants who responded "Yes" (%)
Is your attitude towards disability positive?	98
Do you think persons with disabilities need help?	98
Do you think person with disability would fit into your company?	81,6
Do you think you could fit into company of person with disability?	67,3
Do you think that persons with disabilities should be indulged?	63,3
Do you think that persons with disabilities should be equal?	100
Do you pity persons with disabilities?	73,5
Do you think it is easy being a person with disability?	0

TABLE VII  
AWARENESS OF DISABILITY AND SUPPORT FOR PERSONS WITH DISABILITIES

Question	Participants who responded "Yes" (%)
Do you consider yourself informed about disability?	67,3
Are you informed about support for persons with disabilities?	42,9

TABLE VIII  
CHI SQUARE TEST RESULTS

Category	Pearson Chi Square
Contact with persons with disabilities	0,222
Attitude towards persons with disabilities	0,576
Information about disability	0,391

Rather high share of participants (67,3%) feels informed about disability and to a lesser extent informed about support for persons with disabilities (42,9%).

In order to test the hypothesis, researchers applied Pearson Chi Square to test frequencies of contact, attitude towards disability and the level of information towards disability according to age of participants. Pearson Chi Square showed that there is no statistical significant difference in positive

attitudes towards persons with disabilities in relation to age of participants.

#### IV. DISCUSSION

According to results, it is easily to conclude that hypothesis is confirmed, and that people various age have positive attitudes towards disability. In order to qualitative insight into tolerance between participants and various age groups, researchers conducted a mix method study. Data collection was fully tailored to participants. Children made various drawings, which were analysed using developed data codes. Children projected their attitudes and perception towards disability on drawings, whereby two main codes relating to facial expressions were facilitating understanding and analysis. A high share of children drew only a physical figure of their classmate with disability, but according to elements such as facial expression, body language and colors, researchers were able to analyze their attitudes. In drawings children subconsciously expressed their attitudes, which is why we consider drawings the best method for gathering this data from children. Many children drew positive facial expression on figures with disabilities, which is considered as their attitude and projection. Mainly, positive feelings are projected to drawings. Mostly used color is blue with its meaning for socialization. Children desire to socialize as many as possible, which is why this color is so important for drawings and collecting data. Also, this color in this context means recognizing the need for socializing of a drawn figure with disability. Interestingly, some children even drew those situations they socialize with the figure in. Figures that were drawn in small size do not represent importance to author, but they show respect and recognize the needs of figures. Those big in size indicate friendship important to author of the drawing, some even show situations that figures enjoy, not because they are known but because they enjoy them together. Authors frequently used colors with positive meanings. Other drawings with dark colors can be interpreted as drawing a figure according to clothes on the day of drawing. Therefore children show positive attitudes towards persons with disabilities and their needs.

Adults have more developed awareness about disability. Reasons may be various, but some indicate that they have person with disability in family, which indicates positive attitudes and information. These results show that adults also show positive attitudes towards disability in general, but lack of sensibility and misunderstanding. Many of them show fear, so fear is not synonym with positive attitude. Also, if participants consider person with disability as someone who should be equal, indulging is not the way to make them equal in society. Society can be very sensitive to disability issues and can be confused. General opinion is that persons with disability need to be equal, included, respected etc., but when examining attitudes in individuals, it is shown that people fear that persons do not satisfy criteria for independence, which is connected to misunderstanding and lack of information. In general, these results indicate positive attitudes towards disability but also the need of society for more information



about persons with disabilities and their needs.

This survey was directed to examining attitudes towards disability from age 7 to 58. In future study, we suggest that researchers focus on a certain period of development and examine attitudes towards disability according to that time and state of mind. This research can be conducted examining different ages and periods of development and could be compared in order to bring further valuable insights on this topic.

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