



INTERACTION BETWEEN CHILDREN WITH DEVELOPMENTAL DISABILITIES AND ARTWORK

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Abstract/Povzetek The study was conducted among students with developmental disabilities at three institutions in Split, Croatia. A total of 32 students aged from 17 to 21 participated in the study. A qualitative study employing the method of aesthetic transfer was conducted, aiming to encourage students to react, and to recognize differences between their reactions. The students communicated with the artworks of the modern painter Joan Miró. The research has shown that observing artworks as part of visual arts activity in institutions involving students with developmental disabilities fulfills its purpose, because a structured method for observing artwork served to self-activate students to assess their own competences and competences in visual arts expression.

Interakcija med študenti z razvojnimi motnjami in umetninami

Študija je bila izvedena med študenti z motnjami v razvoju na treh ustanovah v Splitu na Hrvaškem. V raziskavi je sodelovalo 32 študentov, starih od 17 do 21 let. Izvedena je bila kvalitativna raziskava, ki je uporabila metodo estetskega transfera z namenom spodbuditi študente k reagiranju in prepoznavanju razlik med njihovimi reakcijami. Študenti so komunicirali s umetninami sodobnega slikarja Joana Miroa. Raziskava je pokazala, da opazovanje umetnin preko dela vizualnih umetnosti v ustanovah, ki vključujejo študente z motnjami v razvoju, izpolnjuje svoj namen, saj so se na strukturiran način opazovanja umetniških del študenti samoaktivirali pri ocenjevanju lastnih kompetenc in kompetenc v likovnem izražanju vizualnih umetnosti.

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Introduction

The typical characteristics of most people with cerebral palsy (CP), intellectual disabilities (ID) and autism spectrum disorder (ASD) include disorders of communication, socialization and adaptability (Bax, 1964; Bax 2005; DSMV 2014; Grant & Nozyce, 2013), along with sensory disintegration (Ayers, 2002; Biel & Peske, 2007). Among these, there is a kind of “similarity” that could be referred to by the common name of the same or similar prototypes, but there is no unique feature that could help us approach people with such disabilities in a strictly defined way. Baron-Cohen et al. (1993) and Jordan and Powell (1995) according to Osborne 2003, argue that students with ASD differ significantly in communication, socialization, and adaptability from students with other developmental disabilities, such as students with hearing and motor impairment or students with intellectual disabilities.

What connects all students with developmental disabilities are the personalized strategies and approaches in educational work linked with many visual arts education activities (VAEA) since early and pre-school education. VAEA are precisely the foundations and incentives for acquiring other knowledge and skills, especially in the fields of fine motor skills, reading and writing. Of course, such cases feature typifications and patterns, while the activities mechanize processes by reducing creativity, owing to automatic response to external stimuli; yet according to Halmi (2002), they produce a stock of knowledge and create the resources to interpret experience, while understanding intentions and motivations, because without the stock of knowledge and typifications, for every new experience one would have to learn from the beginning. Patterns and typifications facilitate and enable social life, whether typification creates a stock of knowledge generated in the family, institution, or at the local level. The patterns are used in therapy sessions, teaching, or routine daily conversations with students with developmental disabilities. In addition, Brajčić & Kušćević (2016) emphasize that the acceptance of works of visual art develops students' communication with artwork, based on a culture of observing, viewing, experiencing, reflecting on and interpreting the experienced content. Empirical data from Bystrova, Tokarskava & Vuković (2017) show that students with ASD have specific visual perception features that do not depend on their intelligence.

Art helps to transfer information from the inner world of a person to the outer, and vice versa, the outer world to the inner.

With the strengthening of psychology and psychiatry in the early twentieth century, interest in children's artistic expression grew. At that time, engaging in artwork, especially for children with disabilities, experienced an upswing. Interest in and development of art activities led to stronger work by the first professional art therapists (Burić, Nikolić, Prstačić, 2013). The development of Art Pedagogy led to insights into determining children's intellectual level. Carrying out art activities for children with developmental disabilities has a beneficial effect on the growth, development and maturation of these children. Artistic expression also serves as an aid in diagnosis. Many artistic therapeutic directions have emerged from the implementation of art activities. Through art education, both children and adults can satisfy many of their psychological needs. Artistic expression implies drawing, cutting, gluing, shaping, painting, sculpting, and observing works of art. Drawing is an indicator of a child's social, emotional, and cognitive maturity. It has been established that the development of drawing is closely related to the degree of cognitive development, for which it is necessary to know the specific developmental stages of children's artistic expression to help diagnose and solve emotional and behavioral problems and difficulties. Drawings contain very specific projective elements that can be analyzed and thus yield conclusions about the neurological and motor maturity of the emotional aspect of the person, about transformational abilities, especially in children whose verbal abilities are reduced or whose verbal expression is disabled, such as in children with autism spectrum disorders, speech disorders and / or intellectual disabilities (Miholić, Prstačić, Nikolić 2013 according to Nainis, et al., 2006, Prstačić at al., 1990, Radovančević, 1999).

Brajčić and Kušćević (2016) affirm the fascinating diversity in forms of communication among students with disabilities through artistic expression. Thus, through artistic expression, children with disabilities instantly and concretely project personal experience and can return to it, which is not possible in the manner typical of most people, owing to difficulties in verbalizing experiences, thoughts and feelings, along with difficulties in associating and abstracting.

Duh and Zupančič (2012) emphasize the influence of personal or other people's artistic expression on the imitation of all senses, the reception of expression in words and a productive reaction to a work of art.

The method of aesthetic transfer is a qualitative method that involves observation or analytical observation. Observation is the collection of data on phenomena through their direct sensory observation. It is reasonable to assume that experimental data obtained through scientific observation will be more accurate than data whose creation has taken longer and in which more people have participated without the professional and other characteristics required for scientific observation (Brajčič, Kušcević, 2016:29). The aesthetic transfer method used in this study was described in detail by Duh and Zupančič (2012).

Methodology

Our research interest was to use VAEA to encourage adolescent students with developmental disabilities (intellectual disabilities, autism spectrum disorders, and students with cerebral palsy) to react, and to discern differences between their reactions. Interest was related to students' self-activation in assessing their own competences in visual arts expression. A qualitative research study was conducted, featuring a semi-structured interview carried out by teachers who daily teach students with developmental disabilities.

New strategies were added to the usual strategies for the purpose of implementing programs to encourage the development of communication, creativity and socialization. The new symbols present in 20th-century painting were selected, such as those evident in Joan Miró's artwork. The paintings were chosen according to the students' age as well as their emotional, behavioral and cognitive characteristics. The images were chosen because of the pure colors and simple shapes, which made us think that students with disabilities would easily notice them. We also assumed that Miró's artistic style would be familiar to children with disabilities. Figurative and non-figurative themes were selected to determine the diversity of reactions with respect to the (non) figurativeness of the paintings. A figurative animal motif is present in Miró's painting "Le coq" (Figure 1), while a non-figurative motif is seen

in the painting "The garden" (Figure 2). This painting is an unnamed artwork but we called it "The garden" for easier understanding.



Figure 1: J. Miró "Le coq"



Figure 2: J. Miró "Unnamed work"

A productive reaction to artwork was planned to evoke students' emotions towards the work, to allow them to verbalize and express these emotional reactions and to paint or draw using the method of aesthetic transfer. *The content structure* was linked to the basic features of guided observation, which also represent its core values. The researchers expected that students would self-activate in assessing their own competences and visual arts competences through a structured way of observing the artworks.

The following research questions were identified:

RQ1. Will adolescents with developmental disabilities perceive and name colors and shapes in the displayed artworks, and to what extent?

RQ2. Will adolescents accept the displayed artworks positively?

RQ3. Will the experience of observation be reflected in the students' artistic expression?

The research questions concerned the experience of artwork, that is, whether the experience of observation would stimulate visual arts expression and whether that would produce the expression of new emotional and behavioral reactions. The last research question was related to the visual creative content.

The aesthetic transfer method applied here belongs to a qualitative paradigm that involves viewing or analytical observation as a data collection tool. This method has three phases: the perception of the artwork involving all the senses, followed by the second stage of reception or the expression of the seen and the sensed in words, while the last stage is the reaction, that is, the practical activity motivated by observing an artwork (Uhlig, 2005; Duh, Zupančič 2009; Duh, Zupančič 2012). Unifying the cognitive and the affective constitutes a foreseen precondition for achieving the goal. Teachers and work instructors, following the instructions of the researchers, noted the reception by and reaction of the students during or after the students' access to the artworks, depending on their abilities and their needs.

Research place, time and participants

The sites of the research place included institutions providing primary and secondary education and training for children with developmental disabilities in the city of Split, including the Juraj Bonači Center for students with intellectual disabilities, the Slava Raškaj Center for students with cerebral palsy, and the Center for Autism for students with autism spectrum disorder. These institutions and the relevant parents were notified of the activities, and the principals accepted the cooperation.

The activities involved a total of 32 students aged from 17 to 21 who voluntarily participated in the study, as well as 3 professional employees participating daily in the students' educational and rehabilitation activities. The Juraj Bonači Center for Education saw the participation of 15 students, while 10 students from the Slava Raškaj Center for Education participated in the study, along with 7 students from the Center for Autism. Thus, the study included a heterogeneous and appropriate sample of adolescents with multiple developmental disabilities. All students are covered by a special program for acquiring the competences of daily life through an individualized process (Sunko, 2018). The activities were conducted at periods when students were motivated to carry them out during 2016 and 2017, in collaboration with and as directed by the researchers in the student/adolescent workspace.

Results and discussion

The first phase of *perception*, aimed at motivating the viewing, seeing and observation of the aforementioned works of art, was conducted to understand the character in the perception of visual arts. In the perception phase, students/adolescents were exposed to both works of art featuring a semi-structured individual interview.

According to the needs of the students and the modes of communication, it was expected that they would like the figurative painting more than the abstract one. Contrary to our expectations, the figurative painting “Le coq” was chosen by fewer students (15). The unnamed work by Joan Miró which we showed to the students was called “The Garden” for easier communication. This artwork was chosen by 17 students (Table 1).

Table 1: Students by institution, primary disability, and choice of painting

DISABILITY	Le coq		The Garden		Σ	
	f	%	f	%	f	%
ID*	7	47	8	53	15	100
ASD **	4	57	3	43	7	100
CP***	4	40	6	60	10	100
Σ	15	47	17	53	32	100

*ID= intellectual disabilities; **ASD = autism spectrum disorder; ***CP= cerebral palsy

Table 2: The perception phase – the painting “Le coq”

1. Do you like the picture?				Comments
YES	NO	I don't know		
ID	4	2	1	<i>I would put her in my room, she has beautiful colours; I like the colours but if someone gave it to me they would tell me to blow my...; I like the rooster head the most. It can be seen that the painter was drawing fast, he had other obligations. The picture is surely a “rooster”, seen by the firefly on its head; This is a rooster, maybe he has bird flu, because these are weird colors. I don't know why anyone would draw a red sun and thick legs on a rooster; I don't like it, the rooster head looks angry and dangerous.</i>

ASD	2	0		Various colors; This picture makes me happy
CP	4			<i>It looks cheerful; I like the picture; I like it; The picture is great.</i>
Total	10	2	2	
2. Do you recognize what the artist has painted?				
ID				<i>It is a peacock and a red circle; The painter has drawn yellow grass, as he obviously prefers yellow to green; in the picture is a rooster, guarding the chicken's two chicken feeds near the rooster. The picture shows the rooster in paddle colors. The claws are strange, they look more like earth-digging forks.</i>
	4	3		
ASD	2	0	1	<i>Hen</i>
CP	4	0	0	<i>Rooster; Hen; Some hill; Hen has a red beak; head, body and legs; There are lots of feathers in the picture besides the peacock!</i>
Total	10	3	1	
3. Do you recognize the forms?				
Id				<i>The red colour of the sun means that it will be nice weather, but the red sun is too big and then it could rain; He drew his beak unrealistically, it goes like the letter U, and it should be like the letter V. One can see that he painted the picture quickly; There is a snake in the picture; This is a rooster, he's got a big crest. The painter is from Dalmatia, so he decided to paint a rooster.</i>
	4	2	1	
ASD	3	0	1	<i>Rooster; Hen; I recognize the hen</i>
CP	2	0	2	<i>Rooster; Hen, Rooster, Hen</i>
Total	9	2	4	
4. Do you recognize colors?				
ID				<i>He notices blue skies and small red circles, paths and rooster feet; I like blue, red and yellow, it would throw out black and green; They are good colours, but oddly arranged. His head must be infected (rooster); The colors are ok, but the grass should be greener; The colours are good, but the painter also exaggerates a bit with a lot of orange.</i>
	5	0	2	
ASD	2	2	0	<i>My favorite is yellow</i>
CP	3	1		
Total	10	3	2	

Students attending the Autism Center and the Slava Raškaj Center answered the question about the impression the painting leaves on them in a neutral way (it looks cheerful, the painting is cheerful; I like it, it's great) or the answers were completely missing.

Most adolescents from the JB Center (47%) who chose the painting "Le coq" provided rich verbal expression. The responses of students with more severe intellectual disabilities (ID) indicate that they are more likely to recognize colours than shapes, as opposed to their peers with autism spectrum disorder, suggesting a lower ability to decipher motifs. The painter used strong, vibrant and noticeable colours that most adolescents recognized (Table 2). Based on their acquired working and communication skills, the table shows fewer responses than the total number of participants. The question remains whether the respondents recognized the colours or if there was a problem with communication and their mood for commenting and conversation, as well as the possibilities of verbal expression. The results are completely different from previous studies showing that students with ID had no interest in abstract works of visual art (Donadini, 1991; Ribič, 1991, Sekušak Galešev, 2002; Ibralić & Smajić, 2007).

The second phase of *reception* was conducted in the form of verbal and non-verbal (gestural) communication in adolescents with autism spectrum disorder and students with cerebral palsy.

Table 3: The reception phase – the painting "Le coq"

Question	Yes	No	Comments
5. Do you like this painter? What kind of person is he?			
ID	10	4	<i>The painter was great but a little annoying because of the black; I think he was happy, he concluded that by the blue sky (sad people draw the sky gray); I think the painter is happy, because of the colours... I think the painter drinks a lot of Coke and eats chocolate, so he goes a little crazy; The painter was happy and enjoyed drawing a rooster; He was happy to draw, but his critics surely said to him, "Well, Miro, what is this?" I'm thinking whether the painter is Russian or Spanish. The painting is oil on canvas; The</i>

			<i>painter was happy; usually painters were lucky. They are made relaxing and cheerful by painting; He felt NOTHING!!! - He was not happy, because he did not draw women... And he was sad, so he had to draw the red sun, because red gives more warmth; and he was sad, so he had to draw the red sun, because red gives more heat; He was sad, because he probably hadn't managed to overcome the rooster for lunch. It can be seen by the colours...</i>
ASD	0	0	<i>They do not comment</i>
CP	2	2	<i>He likes cheerful colours, he's good; He is good, because he draws well; He's good; He is creative;</i>
Total	12	6	
6. What do you think makes is hard to paint this picture?			
ID	4	3	<i>It is not difficult to draw; Yes it is difficult because there are many colours; It is not difficult. I have drawn a rooster 100 times so far.</i>
ASD	2	2	<i>They do not comment, but they have drawn it</i>
CP	2	2	<i>So so;</i>
Total	8	7	
7. Could you paint a picture like this?			
ID	2	4	<i>Yes, I would draw the same kind of peacock; It's a lot harder to draw; Later, now I have no will; I would paint something else; I would rather draw seagulls (scheme); would later; I'll try to draw. I do not want to bother with that.</i>
ASD	2	2	<i>I would like to paint something else</i>
CP	4		<i>I'll try</i>
Total	8	6	

Given the age of the adolescents (17 to 21 years), their working ability and motivation for verbal expression are now at the peak of their development. This result (Table 3) shows that the painting was not sufficiently interesting to adolescents with ID and ASD to encourage them to respond aesthetically to the observed artwork. The emotional reaction and motivation for artistic expression in these respondents was momentarily absent, which does not mean that at some other time the result would not have been different.

During education, some of the respondents with apraxia were exposed to long-lasting techniques for adopting coarse and fine movements for the purpose of taking care of themselves and practicing graphomotor skills. Their artworks feature rhythmic patterns of schemes present for the purpose of exercise. It is certain that one respondent drew seagulls in a line, following the scheme, in an infantile way, similar to children's kindergarten drawings. The stereotypical repetition of the same artistic motif as a template, regardless of art technique, is more prevalent and lasts longer in adolescents with intellectual disabilities. Insufficient motivation and visual arts tasks inappropriate to adolescent abilities are the most common causes of stereotypes in visual arts expression.

Table 4: The perception phase – the painting "The garden"

1. Do you like the picture?				
	YES	NO	I don't know	Comments
ID	5		3	<i>There are a lot of aliens in the picture; She is cheerful because everyone is singing; i like the big eye that looks up at the sky; I like butterflies, and the falling stars are sad; I like it because it's colorful; I would call the painting "sculptural bodies" because there are too many ideas in the painting; I like the big eye because it looks up at the sky.</i>
ASD	2	0	1	<i>The eye, the stars and the universe;</i>
CP	6			<i>I like it. It looks cheerful;</i>
Total	13		4	
2. Do you recognize what the artist has painted?				
ID	4	3		<i>Spring, contact with aliens, the pyramid, small animals in the yard, meadow, planets; meadow; there are no people but small animals in the yard; Everything is as happy as spring, the leaves; The picture shows the pyramid and the girl climbs</i>
ASD	2	0	1	<i>They do not comment</i>
CP	6	0	0	<i>Sea; Nature; Tulum; Universe; Cow; Summer;</i>
Total	12	3	1	
3. Do you recognize the forms?				
ID	6	0	2	<i>Birds, snakes and butterflies sing; I cannot read the mind of the painter, but for example the eye means that he is watching a lot, the flowers smells</i>

ASD	2	0	1	<i>Animals have organs like humans.</i>
CP	0	0	6	<i>Bird, star, eye, circles, flower and seagrass</i>
Total	8	0	9	
4. Do you recognize the colours?				
ID	5	0	3	<i>The colors are Ok, but the background should be green; The image is blue and black; There is nothing wrong with the colors, because the painter painted them properly; I like it black and blue. I don't like the combination of red and black. There are 21 green colors and 21 red fields; The painter felt good, he concluded because of the many stars</i>
ASD	2		1	<i>No replies</i>
CP	6			<i>They recognise the colours, with the additional questions "What color is this, and this?"</i>
Total	13	0	4	

The painting "The garden" aroused associations in the respondents, as reflected in their comments (Table 4). A possible explanation is that this painting is close to children's art expression, which was actually the inspiration for the artist; therefore, students positively experienced this painting, as it is more immediate to their artistic experience, which is why it was chosen in the first place. People with greater intellectual disabilities, featuring other types of developmental disabilities as well in all of them, find it harder to recognize abstract content, but in this painting there are also realistic motifs or motifs that resemble something. Most students recognized and named the things and phenomena from the painting. Their perceptions can also be interpreted by the students' previous experiences in identifying and naming things, objects and phenomena from visual materials and photographs used in their teaching or in the psychological and pedagogical tests that they often take. In this motif, they see individual objects, forms and phenomena, from which it can be established that the painting is viewed fragmentally, and not as a whole. This is confirmed by the respondents' interesting comments (Table 3). It is clear that the impulsiveness present in the behavior of most of these adolescents implies a tendency to jump to conclusions at first glance, which could be another reason for the interesting and creative responses.

The paintings "Le coq" (Figure 1) and "The garden" (Figure 2) are painted in clear and mostly basic colors that should be easy to identify. The verbal stereotyping and repetition in the responses above are typical of persons with moderate and severe intellectual disabilities, especially when divided into separate educational groups, as in our case. It can be assumed that some of the respondents merely repeated the answer they had just heard earlier, recognizing colors or shapes in a different way than shown. The ambiguity and misunderstanding shown by the three respondents are indications of the underdevelopment of much of the human cognition, which leads to their overlooking the finer forms and nuances of the artwork. Certainly, the elements of narrowed human thinking are confined within familiar and similar categories, which is why the symbolic or expressive dimension of art is often missed. Much human thinking is accidental and disorganized; thus, scattered attention is present both in observing artworks and in these examples.

Table 5: The reception phase – the painting "The garden"

5. Do you like this painter? What kind of person is he?			
	YES	NO	Comments
ID	6	1	<i>He was struck by inspiration, he mixed up the colours a bit. He was happy, all painters like to be happy; The painter liked to walk the dog, and did not like snakes. He drew a snake but it is not a dog because the dog would bite the snake; The painter is happy about the colourful colours; He's a little silly. Who knows where he saw all this? Maybe he has mental obstacles, so he got it all wrong; He could have written an explanation of the picture; Miro gave the Russians the secret of the universe, so they sent Gagarin - Miro was abducted, he saw every beast in space. Miro has no own Self! He was stabbed by the aliens with a needle, and he saw everything wrong; He obviously painted it for friends. He was very sad when his friends did not understand him, but for the most part he was happy; The painter felt good because there are many stars;</i>

ASD		1	No replies
CP	2	4	<i>He is a sad person - it seems to me because this cow has a sad look; I think it's great because it arranged the colours nicely; The painter is neat.</i>
6. What do you think makes it hard to paint this picture?			
ID	4	3	<i>It's not hard to draw, but he couldn't because he doesn't have blue; There are no red eyes flying headless; No, it's not a problem to draw; This picture is easy to draw.</i>
ASD	1	3	<i>No replies</i>
CP	6		<i>It is not; So, so; Not; Not; Yes</i>
7. Could you paint a picture like this?			
Id	4	3	<i>I will, but I will not use colours; No, I would not draw it because I write Japanese poetry; I'd paint something else; I would draw circles; I'll try; One can't draw anything without gravity, and in the picture everything flies, so it can't be; I don't want to use colours.</i>
ASD		1	<i>No comment but he drew it</i>
CP	6		<i>It's hard but I'll try. Yes; Yes;</i>

Reaction phase

In the *reaction* phase, it is expected that students' works of art will be created after they have accessed the artwork. The reactions were reflected in the attempt to paint (draw): "Draw! Be Miró today!" The works were selected according to the principle of exemplarity.

Figure 3 and 4 show items of creative work by students from the Center for Autism/ASD, motivated by the painting "Le coq" by Joan Miró (Figure 1).



Figure 3: Work by Student A



Figure 4: Work by Student B

Student A's artwork was created by a student with ASD disorder, and the form shown resembles the visual artwork on display, confirming the well-developed visual perception of the student (Figure 3). A contour line was noticed by which the student first drew the shape and then filled it with colour. The motif is recognisable, as is the shape of the cockerel, but it is somewhat oversized relative to the size of the paper. There is a pronounced expressiveness evident in the use of strong, clear colours that create strong contrasts. The student was quite attentive to the motif and style of the artwork and transferred it to paper in a specific way. It could be said that this student really did create something "like Miró".

Student B's artwork is expressive and artistically interesting, despite the lack of precision. The shape is partially visually recognisable and placed horizontally, while in the displayed painting the cockerel is placed vertically (Figure 4). However, the motif is recognisable and interestingly interpreted. The work is less precise than the previous one because of the pastel technique chosen. Pastel colors in their structure leave a thicker trace and a clearer color; the strokes in surface colouring are more powerful and uniform, especially in coloring larger areas, such as the background in this case. The proportions are less matched, but the artistic interpretation is expressive in drawing and the use of colour. The colours are expressive; mostly basic colours are used with the addition of orange and black. The contours were first outlined in pencil, followed by colouring with pastels. The student filled the surfaces with strokes in all directions and paid little attention to precision, which gives the piece additional dynamism. This work can also be said to have perceived and interpreted the artistic expression of Joan Miró and presented it in an individual way in pastel technique. Figures 5, 6 and 7 show the creative work of students from the Center for Autism/ASD, motivated by the painting "The garden" by Joan Miró (Figure 2).



Figure 5: Work by Student C



Figure 6: Work by Student D

Student C's artwork (Figure 5) represents a poorer aesthetic response to the original artwork. The shapes are scattered over the page, there is no organization on the surface, and only some resemble those in the picture. The star shape, sickle shape, and some circular and semicircular shapes can be observed. The contours are drawn with pencil, they are imprecisely filled in with crayons, while the colours used were still the ones seen in the picture: red, yellow, green and black. A background colour was neither detected nor displayed. Perception of shape is limited while perception of colour is partial.

Unlike artwork C, the artwork made by student D (Figure 6) is quite rich in forms that are arranged on the page in accordance with the observed artwork. This student has noticed the shapes and grouped them on the page as the artist himself placed them. The student first drew the contours with pencil and then filled them in with colour. The shapes vary in size just like in the painting. The colours used are motivated by the colours in the painting; the background is coloured, as well. The shapes are coloured accurately, with the strokes moving in different directions, suggesting dynamics in the painting. This student did well at perceiving and interpreting the original artwork and can truly be said to have drawn in the manner of Joan Miró.



Figure 7: Work by Student E

Student E expressed his aesthetic response to Joan Miró's artwork freely and creatively (Figure 7). Shown here are the forms that this student interpreted freely, not fully adhering to the given artwork. He first drew the shapes in pencil and filled in the surfaces with a felt pen. The perceptual abilities of this student are at a higher level; however, the true quality is reflected in the personal experience that the student achieved in this work. By adopting Miró's style of expression, the student accomplished his own work, completely inspired by Miró. The work is extremely interesting and expressive in the interpretation of form and colour.

Figures 8, 9, and 10 were created at the Slava Raškaj Center by adolescents with cerebral palsy motivated by Juan Miró's painting "Le coq" (Figure 1).

Joan Miró - Painting 1.



Figure 8: Work by Student F

Student F offered his aesthetic response to the artwork. Although this student perceives the motif, he has interpreted it according to his abilities. He partially notices shapes, without, however, a sense of proportion. The artwork is proportionate in size to the sheet of paper and is centrally located, slightly more to the right, almost out of the paper frame (Figure 8). However, we can still say that the student has mastered the space of the page. Although the student drew the bird, he did not stick to the original artwork in either shape or colour. He first painted the shapes in crayon, then colored in the surfaces. He has displayed some of the colours seen in Miró's artwork and has added others arbitrarily. The student has filled in the surface by drawing lines in different directions, which gives a dynamic impression. Although the motif of the bird can be observed, the student has not adhered to the original, but brings a completely personal interpretation, which relies to a minor extent on the given work of art.



Figure 9: Work by Student G



Figure 10: Work by Student H

Student G has partly noted the shapes in the painting but does not connect them into a whole (Figure 9). He noticed a bird's head, a crest and a beak, which shows certain perceptual abilities. He has also done well in detecting details like the legs and claws of the cockerel. The forms the student observed were also coloured in. However, the body remained separated from the head and was only partially colour filled. The size of the shape is relatively consistent with the page size; however, the figures were not placed centrally, but slightly to the left. Moreover, there is an impression that the student was tired and did not want to finish the work, because he coloured in only fragmentary sections and did not even try to paint a background. The colours he noticed are only two primary colors (red and yellow) and black. The

interpretation features elements of Miró's work, and it is evident that the student has tried to "draw as Miró", yet has not persisted in this intent.

Student H presented a very successful visual response to the visual stimulus. The shapes and colors fit and function as a whole. The size of the drawing corresponds to the size of the page, centrally slightly elevated relative to the edge of the paper (Figure 10). The student has drawn the shapes with crayons and then filled in the surfaces. The smaller surfaces are filled in completely, while the larger ones remain uncoloured. The colours are in harmony with those in the painting, the whole interpretation is a response to the impetus from the original, and it could indeed be said that the student has perceived the artwork and tried to draw "like Miró". The level of self-esteem increases with greater motivation due to encouragement from the teacher.

Figures 11, 12, 13 and 14 are the creative expression of students with cerebral palsy at the Slava Raškaj Center, motivated by the painting "The garden" (Figure 2). In these participants, apraxia is present as a result of multiple motor difficulties (from quadriplegia to monoplegia), and their persistence and energy invested in the painting is imbued with a strong emotional charge.



Figure 11: Student I

Figure 12: Student J

Figure 13: Student K

Figure 14: Student L

It can be inferred from the work of student I that the student has just traced the shapes and colours present in Miró's work. The shapes are arbitrarily scattered over the page, grouped more towards the right side of the page. Only the basic forms are observed (e.g. a circle), while the other forms are free and arbitrary (Figure 11). The student has not outlined the surfaces but directly coloured in each shape. The colours he observes are the basic colours yellow and red and the secondary colors orange and green, and black. The blue background is not perceived, and the student

has not tried to paint the paper with this color. There are elements from which it can be concluded that it was Miró's artwork "The garden" which provided the inspiration. The student made his work in accordance with his individual developmental abilities and gave a personal reflective presentation of the artwork in this way.

Student J also just traced the shapes and colours in the original work of art and interpreted them in his own way, in accordance with his developmental abilities (Figure 12). The contours of the shapes are drawn in pencil and quite imprecisely filled with colour. He has noticed and presented more colours than previous participants, and in addition to red and yellow, has used orange, green and black. Moreover, he has identified the blue background color, which he has indicated on some sections of the blank background. In addition to the surfaces in the paper, there are also lines that try to interpret the shapes observed in the picture. The shapes are balanced within the page, and the colours are balanced in the space. Although the work is unskillfully and imprecisely coloured, a free student interpretation can be observed. It is evident from the student's work that the stimulus was Miró's "The garden".

Student K has freely interpreted the shapes observed in the original painting. He has noted the circle and star shapes and drawn the eye quite similarly to the original (Figure 13). The shapes are balanced on the page, the outlines are very precise, and the shapes are precisely coloured in. The student has shown patience and perseverance in the work. The colours that the artist displayed in the original work were used; however, the student did not indicate, or may have ignored, the blue background color, which is not present in his work. However, at first glance, it is evident that the student's perceptual abilities are good and that the impetus for the work was the painting by Joan Miró.

Student L has a harder time perceiving the shapes in the original work of art. The student's effort is much poorer in shapes than the original (Figure 14). He has indicated the shapes with an outline, but without indicating and filling it with colour. He used only one crayon, the green. He did not use other colors. Of over thirty shapes present in Miró's painting "The garden", the student reproduced six shapes, but recognisable ones. The shapes are apparently randomly scattered without

organization of the paper space. However, a more careful comparison with Miró's painting reveals that the two shapes at the bottom of Miró's work are also present at the bottom of the student's work. The eye and the star are also identifiable by their shape and position on the page. Looking at this work, one can conclude only with difficulty that the impetus for the creation was a work of art by Joan Miró.



Figure 15: Work by Student M



Figure 16: Work by Student N

Student M made a very peculiar interpretation of Joan Miro's artwork. The student has noticed the shapes and accepts the artist's *ductus*, but has channeled it in his own way. The shapes, though taken from the work in question, are placed arbitrarily following the inner aesthetics of the student himself. The outlines are drawn in black, very precisely and also precisely coloured (Figure 15). The shapes are evenly distributed over the page, although the composition does not rely on the original. The colours used are the same as the template, yet the blue background is not indicated consciously or intentionally. The student showed good perceptual ability, but also perseverance and dedication to his work. This piece shows that the impetus for the work was the artwork "The garden".

Student N perceived some of the shapes that were most noticeable to him and arranged them on paper in accordance with the experience of what he saw (Figure 16). An interesting shape is located in the center of the paper, which is similar to the shape used by student M. It is possible that the latter tried to create his drawing by relying on the work of student N. His work is richer in interpretation of both form and colour than the work by student N., who just outlined the shapes on the paper. The student first used crayon to draw shapes resembling those of the artwork, and then colored them in. He has noticed more of the drawing elements on the template,

so he multiplied the radiating shapes and distributed these all over the space of the page in a pattern. He has painted in the surfaces very carefully and persistently. This student has paid more attention to the details of the original than to the work as a whole. He did not notice the background, nor did he indicate it. Although poorer in visual expression than response by student M., we can still see in this interpretation that the impetus for the work was Joan Miró's painting "The garden".

Figures 15, 16 and 17 are creative expressions by students with intellectual disabilities at the Juraj Bonači centre. Figure 15 was a response to Joan Miró's painting "Le coq" (Figure 1).

Joan Miró - Painting 1.

Student O was the only one in this group to give an aesthetic response to the work of art "Le coq" (Figure: 17). However, in his interpretation he relied not at all on the original, but only on the motif of the bird he observed. This is clearly a cockerel but presented in accordance with his own experience and developmental ability.



Figure 17: Work by Student O

The cockerel is centrally located on the paper and is of adequate size relative to the page size. The head, torso, body, tail and legs can be seen. He has noticed details such as the crest, eye and beak, but not the claws of the cockerel. He also graphically depicted the texture of the feathers. However, he used no color at all in his drawing but interpreted the artwork using a pencil technique. This student has offered his own interpretation of the motif from the original, which means that he did not

perceive the artwork through the colours and shapes that distinguish it, but drew it according to his own inner image.

Figures 18 and 19 show creative expression by students from Juraj Bonači Center with intellectual disabilities, motivated by the perception and reception of the painting "The garden" (Figure 2).

Joan Miró - Painting 2.



Figure 18: Work by Student P (ID)



Figure 19: Work by Student R (ID)

Student P gave his aesthetic response to the painting "The garden". This work was chosen by all other students in the group (Figure 18). The student presented some of the shapes that he observed in the original "The garden". The shapes are smaller than on the template and are scattered without order across the page. They are outlined and then painted in with quite high precision. The student has used four colors: two primary (red and yellow), one secondary (green) and black. He does not notice the color of the background and does not indicate it consciously or unconsciously. Although scarce in artistic terms, this work does contain elements that can be observed in the original work of art, which means that the student observed and interpreted it in accordance with his developmental abilities.

Student R offered his aesthetic response to the observed artwork in the form of only one shape drawn in the left corner of the paper (Figure 19). The shape is bordered by a contour line and painted in two colors (yellow and green), and black. Within this extremely poor visual expression, it can be established that the only shape shown is similar to one of the observed shapes in the original painting. The student was able to perceive only one form in accordance with his developmental ability and in his personal manner transferred this to paper. Works by other students with ID have similar characteristics to those of student R.

Conclusion

Limitations in this research include the conditions that enabled us to examine the work of 4 public institutions with many years of experience, which educated and provided various types of social services to students with intellectual, speech, motoric, behavioral and autism disorders and students with multiple disabilities in the city of Split (Republic of Croatia). Participants in the study are students with multiple disabilities, aged from 16 to 21 years old. Having been brought up and educated in these institutions was one of the conditions for inclusion in the study. All students covered by the interdisciplinary context of education and rehabilitation are focused on acquiring competences with the aim of achieving active participation in the living community. Acquisition of competences is realised through two types of programs: special programs for acquiring competence at everyday activities and work with individualized procedures. These programs are tailored to specific approaches and strategic to meet the adaptive, socialisation and communication needs of students (DSM V). They are implemented in the educational group as compulsory primary and secondary education in accordance with the functional and adaptive abilities of students, which was another given factor. The application of the ordinance gives students with multiple disabilities the right to attend primary school between the ages of six and twenty-one (NN. 68/18, art 6, 2018).

All students who participated in the study are beneficiaries of additional educational and rehabilitation programs (NN 24/2015), art 3, in which the need for inclusion of psychosocial support is expressed, and which rely on the economic-legal and rehabilitation status of students, including activity experts from various social, humanistic and artistic fields, which was also a limitation in the selection of participants.

The specifics of the presented interdisciplinary integrated content are necessary for persons with developmental disabilities because they enable the detection of the current adaptation and functional state and open up new creative possibilities, as demonstrated by the implemented approaches and activities that have been presented. The aesthetic transfer method presented in this paper demonstrates and describes how various cognitive processes affect experience, and thus the ways in which each student with multiple developmental disabilities may experience

particularly moving, disturbing, transformative, transcendental, or simple worldly interpretations of what they observe. By analysing creativity as a social phenomenon, educational practice is focused on stimulating its development, which can be implemented quickly and whose effects are noticeable after a short time (Amabile, 1996 according to Jovanović, 2019).

Students perceive their works as positive personal outcomes because they are derived from context, personal memory something seen and experienced, and their personality traits. In the model given above, students with intellectual disabilities can verbalize explicitly and clearly the contemporary artistic codes used by the artist to code his messages, while also forming their personal artistic codes. At the same time, analytical and discussion skills are developed as well as students' critical thinking.

At Juraj Bonači Center, the visual arts interpretation by students with ID are scarce proportionally to the depth of the level of intellectual disability. In students with intellectual disabilities, there is a narrowing of observation, because thinking occurs within familiar, similar and practiced categories, which could be the cause behind omission of the symbolic dimension and expression in visual arts creation. In the Slava Raškaj Center, the artwork by students with CP shows variation in interpretation, ranging from completely poor and unfinished ones to some interesting and very successful works of art, depending on the level and type of motor difficulties and possible intellectual disabilities present in the respondents with CP. The students' pictures accord with their individual needs according to the classification of their difficulties (Katušić, 2012).

The students from the Center for Autism chose to interpret both offered works of art equally: three students chose the artwork "Le coq", and three interpreted the artwork "The garden". The numerical results for the interpretation of the artwork show that the students from the Center for Autism presented the most authentic visual and aesthetic responses to observation of Joan Miró's paintings. The artwork experience among students with disabilities, as well as that of other students, depends not only on their sensory characteristics such as sharpness of vision, hearing or tactile involvement, but also on an involuntary sense of elation and personal success, often accompanied by approval and rewards from the environment. Examples from students at the Center for Autism reveal the enormous new dimensions of expression inspired by twentieth-century modern art. The results of the presented work show that the longer the students' understanding of the process

of Miró's artwork (shape, colour or attractiveness), the more meaningful their reflections become. Students from the Center for Autism spent most time on the activities, while students at the Juraj Bonači Center were faster in grasping the content and needed less time to express their creativity. Creativity as a personal activity serves to meet the emotional needs of adolescents, and on the other hand, serves to objectify their needs in the social world (Vygotsky, 1996 according to Jovanović, 2019).

Elements of a sense of accomplishment and personal satisfaction with the result can be linked to the culture of the community (parents, acquaintances and relatives). The culture of the institution at which they have been students for many years emerges from their verbal and visual activity, presenting the culture as a way of life which presupposes the values, attitudes, emotions and behavioural norms of the students. As an intercultural category in which the participants in the presented processes were raised and educated, values are focused primarily on the promotion of human dignity, freedom, dialogue, tolerance, social equality, solidarity, and freedom of creativity and expression, all of which can be seen in their access to the work of art. While experiencing the work of art, some students showed in their words and works that the original had inspired their imagination. By establishing communication with contemporary works of art, these students show that they have overcome the limits of their perspectives on what art should be (*He was happy, all painters like to be happy*). From their perceptions and reception, it can be concluded that happiness is an art. These students emphasise happiness and joy. Through reflection, they show that they are artists as well, and that is why they are happy.

For the purpose of evaluating the stimulated associations and sensations, the associations on the topic of shape recognition were used, as well as associations on the topic of colour in selected works of art.

Analyzing the levels and strength of student incentive to produce works of art and preferences from the resulting works, it can be concluded that the level of intellectual and sensory disabilities is causally related to the ability and precision of perception in the majority of students who participated in this study. In accordance with the research questions, adolescent students to a great extent noticed and named the colours and shapes in the given works of art. The experience of observation

encouraged artistic expression in the students, who positively accepted the works shown. The experience of the observed artwork is also reflected in the students' artistic expression, especially among students with ASD. Through a structured method of observing the artworks, all students involved in the study were self-activated to assess their own competences and competences in visual arts expression. The level of intellectual and sensory disability is associated with decreased capacity for and precision of perception in most students with intellectual and motor disabilities. A comparison of the results showed that the greater the degree of intellectual disability, involving social communication and motor skills, the more severe the disorders of sensory experience and perception. This study has shown that observing visual artworks as part of visual arts education in institutions for students with developmental disabilities fulfills its purpose. In addition to the educational aspect of introducing students to modern art, the value of this method is evident in the development of perception, verbal communication, and visual arts expression. The students were encouraged to observe, reflect on and experience works of modern art that encouraged varied associations and interesting artistic responses presented both in their artwork and in verbal responses suitable for the development of socialization and communication skills.

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