The Process Of Creating A Work Of Art From Sensory Integration

Of Students With Intellectual Disabilities Of The Panyanukul Schools In Eastern Thailand

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Abstract

The research was based on creating art together with children with intellectual disabilities. In this study, art therapy was applied along with sensory integration. The objectives are to determine the process of creating art from sensory integration of children with intellectual disabilities in order to develop model activities for art classes and explore how to develop products from artworks created by children with intellectual disabilities, which can generate income for the children and the communities. In this qualitative research, the data were collected as a volunteer in the field and analyzed to determine the process of creating a work of art. After data collection and analysis, a work of art was designed and created together with children with intellectual disabilities, grade 4-6 students and grade 7-9 students. The study has found a model process of creating art for arranging art class that can recognize each child's capacity and unique talent.

Keywords: *Sensory Integration, Art Therapy, Process Art, Children, Intellectual Disabilities, Art Activity, Creative Craft, Qualitative Research*

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Introduction

The study "The process of creating a work of art from sensory integration of students with intellectual disabilities of the Panyanukul schools in eastern Thailand" started with a question: Could art activities in a classroom become an important tool to develop other skills if art therapy and sensory integration were merged into the process of creating artworks in classes for children with intellectual disabilities?

The Panyanukul schools are Thai government schools providing education and support for children with learning difficulties or who have a mental disability of some kind. Art is an important field that plays a significant role in physical, mental and spiritual balances. Creating art can be employed to enhance skill development and reduce emotional, mental and behavioral problems as well as optimize capacity. Creating art also helps cultivate four creativity components: originality, fluency, flexibility and elaboration. It contributes naturally to the communication and learning skills of children with intellectual disabilities.

The aforementioned qualities of art inspired the researcher to design a process of creating art from sensory integration of children with intellectual disabilities at Panyanukul schools by integrating art therapy and sensory integration in the activities. This study aimed to determine the process of creating art from sensory integration of children with intellectual disabilities in order to develop new inspiring model activities for art classes for children with intellectual disabilities as well as to develop products from artworks created by children with intellectual disabilities to generate income for the children and their communities.

The objectives of this study are, therefore, to determine the process and a new concept of art activities for children with intellectual disabilities which combine art with science through three components under the conceptual framework; art therapy for children with intellectual disabilities, sensory integration of children with intellectual disabilities and create activities based on process art.

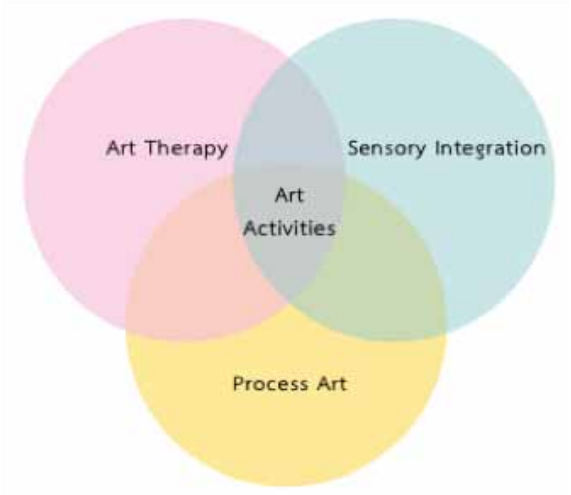


Figure 1. Conceptual framework.

Literature Review

Concepts and Principles of Art Therapy

Art therapy is a way to release emotions, feelings and thoughts according to the needs of the individual. Art therapy is useful in the areas of emotional development, intelligence, concentration and creativity, including helping to develop fine motor control and coordination of body movements. It is also an important tool that stimulates communication and strengthens social skills as well. The expressions of artworks, such as lines, colors, shapes, symbols, emotions and meanings that are all conveyed can be analyzed to show how the thoughts are or how the mental state is problematic.

Art therapy evaluation uses a process-based artistic activity, not focused on a product or artistic value. Applying different forms of art to therapy considers the appropriate techniques for each individual. A wide selection of these media, materials, devices and styles are a choices to vent ones mind, a path to self-understanding and/or to manage ones feelings as appropriate for each patient.

Art therapy for children with intellectual disabilities is the application of art therapy to enhance, develop and help alleviate emotional, psychological and behavioral problems in order to reach their full potential. Art enhances the four elements of creativity: originality, fluency, flexibility and elaboration. Children can learn concepts through art faster than primary communication methods and can use art to reflect on what they know and what they are thinking.

The forms of media use in art therapy can be various such as writing, drawing, painting, collage, molding and weaving as an alternative to expressing one's thoughts until they can understand and manage feelings. Children can use it tocommunicate with those around them. Applying different forms of art therapy is about selecting techniques that are appropriate for each individual, including:

- Structure media, such as pencils, colored pencils, sketch pens and crayons, are used for building a relationship with their therapist in lieu of communicating with words.
- Loose media, such as watercolors and clay can be used to reduce tension, induce a relaxed mood and freely express feelings.

There are many forms of the process of art therapy; Dr. Thaweesak Siriratrekha, MD, Child and Teenager Psychiatrist of Rajanukul Institute, the governmental agency under the Department of Mental Health of Thailand, compiled, summarized and compared the process of psychotherapy divided into 4 stages (Siriratrekha, 2007:49-50) as follows:

- *Establish rapport stage* (Relationship building) is the first stage of therapyEstablishing a relationship between the therapist and treatment recipient, which includes problem assessment and creating a treatment plan.
- *Exploration stage* (Problem searching) is the stage of exploration. Finding and analyzing problematic conflicts within the depths of the mind.

- *Experiencing stage* is a stage of treatment by experiencing the problem it is rearranged, adjusted and modified into new perspectives and conditions.
- *Empowerment stage* is the final stage of therapy, by enhancing self-esteem and allowing change to take place.

Dr. Thaweesak Siriratrekha explained that the key techniques used in the art therapy process are support, empowerment and the inner interpretation of the mind. Support and encouragement can be achieved by paying attention, encouraging and offering praise when children accomplish or make more effort in a calm, safe and friendly environment. (Siriratrekha, 2007:50)

The distinctive feature of art is that it has easy to understand learning materials for all ages and skill levels. Even if a child cannot speak or move fluently, he or she can learn through art. In the activities of art therapy, local wisdom and heritage arts and crafts can be incorporated harmoniously according to the local conditions as well.

The art therapy program for people with developmental and intellectual disabilities conducted by the Art Therapy Demonstration Center of Rajanukul Institute of Thailand has researched and developed an age range appropriate art therapy program for people with developmental and intellectual disabilities as follows:

- *Art therapy program for children aged between 3-14 years old*. The objectives of the treatment are free expression, directional control, the experimentation of using art materials and equipment along with the development of communicating through the art creation process.
- *Art therapy program for clients aged between 14-25 years old*. This program is aimed at reducing unwanted behaviors, improving awareness and controlling emotions.

Each program mentioned above are divided into three levels as follows:

- ***Level 1:*** *Art as communication program.* The treatment recipient can do activities independently according to their potential. By preparing and offering tools to clients, they can freely do artistic activities according to their needs and communicate with those around them.
- ***Level 2:*** *Art as expression program.* The treatment recipient can express their thoughts or feelings within the individual by exploring, experimenting and developing their ability to solve simple problems according to each person's potential. Children practice skills and express themselves freely through artworks.
- ***Level 3:*** *Art as a basic development program.*Using art for developing the potential of expression through works of art. The objectives of this program are to experiment with a variety of art materials and learn how to use art tools, to know different kinds of colors, to practice artistic expression skills, to train how to work in sequence, discipline and clean up as well as to establish for themselves the fundamentals of artistic expression matching their potential.

Artistic Development

Development is the transition of physical, intellectual, mental, emotional and social functions to maturity. The development of all children follows the same principles and direction but differs at the speed of development and may be interrupted or delayed for different reasons.

Artistic development is a form of child development that integrates each development aspect based on an artistic perspective. In general, artistic development consists of three main stages: The scribbling stage, the schematic stage and the naturalistic stage. In artistic development, each child develops in the same sequence, but does not develop the same, depending on various factors. The factors that affect artistic development include four main areas: physical growth, cognition, emotion and social.

Viktor Lowenfeld and William Lambert Brittain noted the relationship between child development and drawing:

Drawing gives us a good indication of child's growth, moving from an egocentric point of view to gradual awareness of the self as part of a larger environment. (Lowenfeld and Brittain, 1982:52)

Lowenfeld describes the development of drawing in the book "Creative and Mental Growth" (Lowenfeld and Brittain, 1982:93-218), which can be used to assess the child's developmental level, divided into six stages:

- The scribbling stage is found between 2 and 4 years of age, where children begin scribbling according to their level of muscle development, movement ability and eye-hand coordination. The scribbling stage consists of 3 sub-stages: disordered scribbling, controlled scribbling and naming of scribbling, which is when children begin to use their imagination to draw.
- The pre-schematic stage is found in children between 4 and 7 years old. This stage grows directly out of the last stages of scribbling. A child is involved with the establishment of a relationship to what he intends to represent. This relationship will create an incredible feeling of satisfaction. He begins to draw basic shapes such as circles, squares, or crosses. The first representational symbol achieved is a man who is an important person throughout childhood. The human figure is typically drawn with a circle with a proportionately large head and two vertical lines usually interpreted to be legs or body. This head-feet representation is the first step in establishing a relationship between the child's drawing and the essential parts of his external world. The human figure looks like a tadpole figure. The additional lines will be placed upon this head to feet representation to enrich it, such as arms, usually attached to the head itself and some symbol for the eyes and other features. To what extent the child enriches this concept of a human figure depends on his total growth factors. A child can create stories of what is drawn by connecting things around him and portraying himself and his family. Most children at this age prefer to draw rather than paint. They use colors independently – regardless what the actual colors exist in nature.

- The schematic stage is found in children aged between 7 and 9 years. The concept of a figure is where the child arrives after much experimentation. A child draws realistically and connects to his environment. He depicts a universal symbol of things, such as a house with a square and a triangular roof, a man with a round head, hair, arms and legs. At about the age of seven, a human figure's drawing also contains some active knowledge of the various features. For example the eyes' symbol is different from the nose's symbol and the nose's one differs from the mouth's. There is even an awareness of hair and of a neck. At this stage, a child always draws man, animals and objects on a baseline, such as ground lines or skylines. He also tries to represent his active knowledge of the object. The figures are two dimensional, with no depth or thickness. The drawing also refers to space and figures as it refers to objects. A child uses another most interesting non-visual way of representation to show different views that could not possibly be perceived visually at the same time. In this way, a child depicts a plan view (from the top) and elevation view (from the side) at the same time to show significant views. For example, a table that is splay-legged to reveal the sides, a house as an x-ray picture that mixes up the inside and outside of a building because the inside is usually of greater importance for the child at this stage than the outsides of the structure.
- The dawning realism stage is found in children between 9-11 years old. Where the child is eager to express the differences of sex, as boys with trousers and girls with dresses. They move to a form of expression that relates more closely to nature, but it is still far from a full visual representation. As a result of this growing visual awareness, the child discovers the plane and space between baselines becomes meaningful. However, the child has not yet become aware of the horizon's meaning and he has not yet developed a conscious visual perception of depth.
- The pseudo-naturalistic stage: This age of reasoning is found in children between 11-13 years. The child draws more realistic, dimensionally and with more complex images. He tries to draw a figure in perspective with light and shadows, movement and 3D rendering. Distant objects become smaller and are drawn more like the real thing with more color details, such as a human figure with added details of the clothes and the color of the hair etc.
- The period of decision: The crisis of adolescence. At this stage it is found that the drawings are detailed, incorporates color techniques, with more designs and are more abstract. The representation of the human figures are visually in correct proportions and dimensions.

Sensory Integration

Sensory integration is one of the approaches used to promote the development of children with special needs through occupational therapy, which applies routines or activities in the assessment, diagnosis, promotion, treatment and rehabilitation so that children can return to life in society. The various learning activities help strengthen concentration, thinking skills, fine motor skills and muscle coordination.

Dr. Anna Jean Ayres, an American occupational therapist and educational psychologist, the developer of the sensory integrative theory explained that the nervous system is responsible for receiving sensations from within the body and from the environment by directing the senses in the brain. When the brain is effectively manipulated, it will cause the response to be appropriate under that context and it is automatic. On the other hand, when the sensory receptors' ability is abnormal, the inability to organize the stimuli, which can be too much or too little, will make it impossible to respond with appropriate behavior. The occupational therapists apply sensory integrative theory to stimulate the child's sensory system for better development and integration. There are three primary sensory systems:

- *Vestibular sense:* This system has sensory organs in the inner ear, which is activated as soon as the head changes from the midline, resulting in the body being able to maintain its balance.
- *Proprioceptive sense:* This system has sensory organs in the muscles, ligaments and joints throughout the body that are activated as soon as the joints are brought together or pulled apart, resulting in the awareness of different parts of the body along with perceptions of direction and speed of limb movements.
- *Tactile sense:* This system links the sensory system's physical, mental, emotional and behavioral functions. There are sensory cells on the skin throughout the body to perceive sensations of pressure, vibration, movement, temperature and pain. When they are activated the receptors in the skin send information to the brain to interpret and judge how to respond.

Process Art

Process Art is open-ended art making method focusing on the process rather than the end product. It encourages independent thinking and discovery and pays attention to the children's experiences. It can be any modality such as drawing, sculpting, painting or crafting. Process Art does not value accuracy nor aesthetics. Instead, it encourages children to be creative, explore and understand what is around them. The method of Process Art is one of creating art by gathering, compiling, connecting, designing with hands-on – experiential objectives through open-ended play and activities. Children have the opportunity to explore and question things in their own space where they are free to make decisions and do it by themselves. Process Art, by its nature often brings forth natural motivation, reasonableness and intention.

Methodology

Qualitative methods were employed in this study as follows:

a. Documentary Research

- Conduct desk review on theories, principles, concepts, forms and processes of art therapy for people with developmental and intellectual disabilities.
- Study sensory integration of children with special needs.
- Analyze data to determine the intended concepts of art activities.

b. Action Research

- Action research was conducted by the researcher and three assistants with a group of five grade 4-6 students and a group of five grade 7-9 students of Panyanukul in eastern Thailand. This included the Chachoengsao Panyanukul and Rayong Panyanukul Schools. The duration was for a period of four months (one semester) with the activities arranged two times per week for 50 minutes each and implemented based on the art therapy concept (4E) as follows:
  - Established rapport stage
  - Exploration stage
  - Experiencing stage
  - Empowerment stage
- Document the artworks and process in the form of images and videos to record behaviors, development and remarks occurring during the activities.
- Design and develop products from students' artwork.
- Exhibit artwork and search for distribution channels.
- Evaluate results based on the sample groups' development in the areas of imagination and creativity.
- Conclude and make recommendations.

c. Sample Groups

- Five grade 4-6 students aged 10-14 years and five grade 7-9 students aged 15-21 years from the Chachoengsao Panyanukul School.
- Five grade 4-6 students aged 10-14 years and five grade 7-9 students aged 15-21 years from the Rayong Panyanukul School.

d. Research Techniques

The following research techniques were used:

- *Observations*: The sample groups' behaviors while doing activities were observed and documented in videos, photographs and audio recordings.
- *Interviews*: Therapists were interviewed to select materials and techniques to arrange activities based on sensory integration. Teachers were also interviewed to gather data about learning activities and students' behaviors.

e. Data Analysis

Each research stage was analyzed as follows:

- *Established rapport stage:* Rapport development was established with drawings and paintings based on Viktor Lowenfeld's theory.
- *Exploration stage:* Materials and techniques were selected to develop a concept for tailor-made art activities. The group activities followed Process Art precepts offering independent thinking and paying attention to the children's experiences while working on art.
- *Experiencing stage:* Behaviors and artworks were analyzed based on materials and individual techniques. The students were free to make decisions and do it by themselves.
- *Empowerment stage:* Emotional responses towards completed artworks.

Design – The Process of Creating Artworks From Sensory Integration

Conceptualizing Art Activities

The design of the art activities was carried out according to art therapy principles using the model of art as basic development, which aims for feww expression and experimentation with a variety of artistic materials and encouraging communication. The researcher considered media and techniques choices based on the preferences and their suitability for each child. The structure's media, such as sketch pens and crayons were available for use in establishing a relationship between the researcher and students acting as a substitute for verbal communication. The loose media, such as watercolors and clay were available to reduce tension, relax moods and freely express students' feelings.

The researcher selected the techniques of scribbling, painting, sculpture, printmaking and crafts to support the objectives of sensory integration; focusing on combining three different senses mentioned earlier: vestibular, proprioceptive and tactile. The process of the art activities process was congruent to the 4E principles: The establishing rapport, exploration, experiencing and empowerment stages. The art activities design framework can be illustrated by the following diagram:

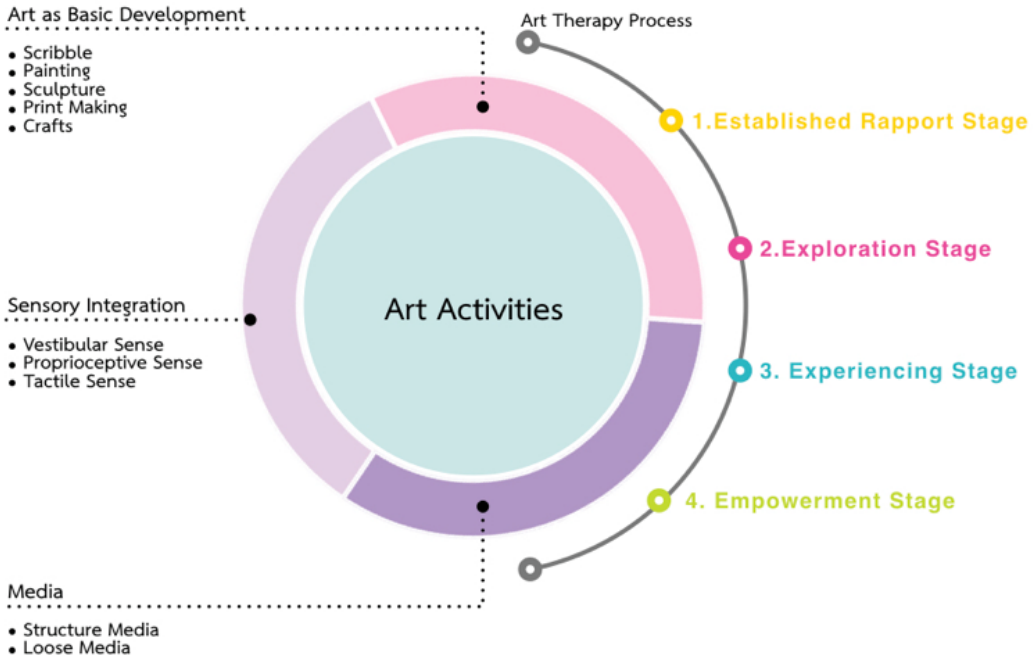


Figure 2. Art activity design framework.

Sensory integration of children with intellectual disabilities was introduced as the principle for selecting activities in which various senses can be involved (vestibular, tactile & proprioceptive). Additionally the researcher found ways to stimulate these senses as follows:

- Vestibular: Activities that involve circular or elliptical movement and running back and forth in a straight line or zig-zag.
- Proprioceptive: Activities that involve pulling, spinning, pushing and pressing.
- Tactile: Activities that require touching different types of surfaces.

The researcher selected materials and techniques for activities consistent with sensory integration in collaboration with occupational therapists and special education instructors as shown in the table below:

Form	Materials and Techniques	Benefits of Sensory Integration
Painting	- Crayons and sandpaper - Paintbrushes	The tactile sense is simulated by painting crayons or chalks on various surfaces such as wood, concrete, or sandpapers where the surface is rough. The proprioceptive sense is also promoted when children press paints to stick on sandpaper.
	- Painting with bubbles	Mouth muscles are exercised. Children with special needs often face challenges in using hand and the mouth muscles. In this practice, children's mouth muscles with speech retardation can be strengthened through blowing activity.
	• Dropper painting • Squirt gun painting	Eye-hand coordination is promoted by tip pinch to drop paint. Triggering squirt gun also stimulates proprioceptive sense.
	Finger painting	When children feel textures, the tactile sense is stimulated.
Scribble	• My self • Drawing on vertical surfaces • Drawing underneath & upside down	Children can learn to control proprioceptive senses while scribbling vertical pictures. The tactile sense is promoted while touching and learning about various paper surface as children lay down (on stomach) to paint. They use vestibular sense to feel the movement of the body. Hyperactive children also sense that they are moving and learn how to control hands.
Print Making	• Fingerprints and thumbprints • Printing with nuts and bolts and screws	The proprioceptive sense in hands is promoted when children press on solid mold. This technique fits those who do not know how to hold forces and tend to press hard. Pressing lengthens the time that children spend on a task. For children with habitual frustration, pressing and massaging prompt them to feel their bodies. Sensing the press also helps children to relax.
Crafts	· Weavings with homemade cardboard looms · Pompom rug	The proprioceptive sense is stimulated when children strain their fingers to tighten robes. This activity is suitable for those who do not know how to use joints, such as children who press too hard while writing or painting. The tactile sense is stimulated if various kinds of surfaces are introduced. Eye-hand and hand coordination are promoted when two hands perform different tasks. For instance, one hand holds while the other pulls. This coordination is considered necessary, as some children with special needs are inclined to use only one hand at a time. Activities requiring using two hands help stimulate both sides of the body.
Sculpture	· Pottery crafts · Hand dish · Leaf bowl · Coil pot · Candle holder · Slab lantern	The proprioceptive sense is promoted while pressing, squeezing, and molding clay. Eye-hand coordination is also promoted in this activity.

Figure 3. Materials and techniques for the activities in line with the sensory integration.

Art Activity Sessions

Following the principles of art therapy in its 4 stages: Rapport Establishment, Exploration, Experiencing and Empowerment stages are described in detail below.

a. Establishing Rapport Stage

Make acquaintance and forge personal connections with students by arranging scribbles activities in the first week. The groups' activities were arranged two times, 50 minutes each. The students were instructed to draw an ordinary picture freely and switch to draw on vertical surfaces and then draw underneath & upside down, which allowed them to practice control of hand joints, shoulders and use their tactile sense on various surfaces. The resulting scribble drawings can be used to analyze student development according to Viktor Lowenfeld's theory as follows:

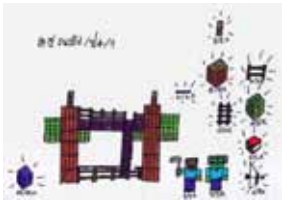
Development Level	Features
Pre-schematic stage 	The student sketched humans, animals, objects from models around him. Despite differences in shapes and sizes, in reality, all figures in the picture have similar looks and sizes. A tadpole-human figure consists of a round head, eyes, a nose, a mouth, two legs, and two arms stretching from the head. The square shape represents a house. The student colored his picture as freely as he liked.
Schematic Stage 	A realistic picture shows an environmental connection. There are universal figures such as a man with a round head, hair, arms, legs, a tree with a brown trunk and green leaves above, and a house with a square body and triangle roofs. The picture is drawn from the bird's eye view depicting a story from past experiences to convey the idea.
Schematic Stage 	The students drew realistic pictures presenting the connection of the environment. A human's head is like a robot in a game with a square body, arms, and legs. All figures are placed on the baseline. The coloring shows some hints of imitation of some games. A plan is drawn from the bird´s eye view emphasizing some elements which can be meaningful or special for him.
Schematic Stage 	The picture is realistic and presents more connection with the environment. Only the castle's wall is drawn, showing emphasized elements and omission. The picture may mean something meaningful or special. Every item is on the baseline and two-dimensional without presenting depth or thickness. The student used colors of his choice. He compared his with others' works and was reluctant to show his work.
Pseudo Naturalistic Stage: The age of reasoning 	The picture is pseudo-naturalistic, logical, dimensional and complex. Colors are realistic and diverse, showing creativity freedom.

Figure 4. Analyze development from drawings based on Viktor Lowenfeld's theory.

b. Exploration Stage

To determine students' interests and talents. The groups' activities were arranged as two times weekly for 50 minutes each during four months (one semester). The researcher arranged activities with various materials and techniques, including:

• Painting

The researcher selected materials and techniques conducive to sensory integration with the following details:

- Crayons and sandpaper: students who have developed drawing in the pre-schematic stage were instructed to use crayons to paint the given patterns, whereas colors were of their choice. In this activity, the proprioceptive sense was promoted by pressing finger joints to stick the paint on sandpaper. Rough surface helped stimulate tactile sense. Some children with special needs are inclined to use only one hand at a time. To do this activity, they needed to use both hands simultaneously to perform different tasks (one for painting and the other for holding paper). With that, both sides of the body were stimulated.

Figure 5. Using two hands to paint on sandpaper.

The students suitable for crayons and sandpaper painting are those with a developmental level in the pre-schematic stage, the schematic stage and the pseudo-naturalistic stage.

- Painting with bubbles: mouth muscles were stimulated by blowing. Children learned to control their mouth muscles.

Figure 6. Painting with bubbles.

The students suitable for painting with bubbles activity are those with a developmental level in the pre-schematic stage and the schematic stage.

- Squirt gun painting and spray painting: fine motor skills of hands were promoted by triggering the gun with fingers to shoot off a spray of color. While eyes aimed at the target, hand-eye coordination was also needed to control the shoot.

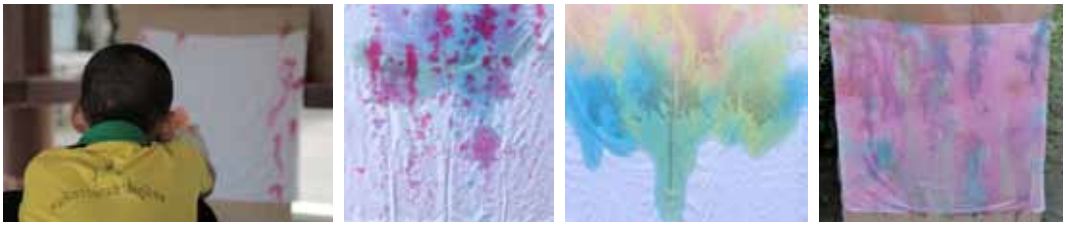


Figure 7. Squirt gun painting.

The students suitable for squirt gun painting are those with a developmental level in the pre-schematic stage and the schematic stage.

- *Dropper painting: using thumb and forefinger to press the tube, the phalanx was promoted to control the amount of color that came out.*

Figure 8. Creating natural shapes by dropper painting technique.

The students suitable for creating natural shapes by the dropper painting technique are those with a developmental level in the pre-schematic stage and the schematic stage.

- *Paintbrushes on the given areas. In this case, hand-eye coordination was promoted.*

Figure 9. Natural indigo painting with a paintbrush.

The students suitable for indigo with a paintbrush activity are those with a developmental level in the pre-schematic stage and the schematic stage.

• Printmaking

To do fingerprints and thumbprints, the proprioceptive sense was promoted. For children with frustration, pressing and feeling the presses allowed them to feel their body, helping them relax. For the next step, students who have developed drawing in the pseudo-naturalistic stage (the age of reasoning) were asked to create drawings from the prints.

Figure 10. Turn fingerprints and thumbprints into a picture of imaginary insects.

• Clay
Pottery craft in different forms such as hand dish, leaf bowl, coil pot, candle holder and slab lantern helps promote proprioceptive sense by pressing, flattening and rolling clay.

Figure 11. Hand dishes and leaf bowls.

The students suitable for creating hand dish and leaf bowl are those with a developmental level in the pre-schematic stage, the schematic stage and the pseudo-naturalistic stage.

Figure 12. Clay rolled into long strands for molding coil pots.

The students suitable for molding coil pots are those with a developmental level in the schematic stage and the pseudo-naturalistic stage.

Figure 13. Clay molding from drawings.

The students suitable for molding from drawings are those with a developmental level in the pseudo-naturalistic stage.

• Crafts
With weavings with homemade cardboard looms, hand muscles, proprioceptive sense and tactile sense were stimulated parallel with eye-hand coordination. To weave, two hands were needed, one for holding and the other for pulling.

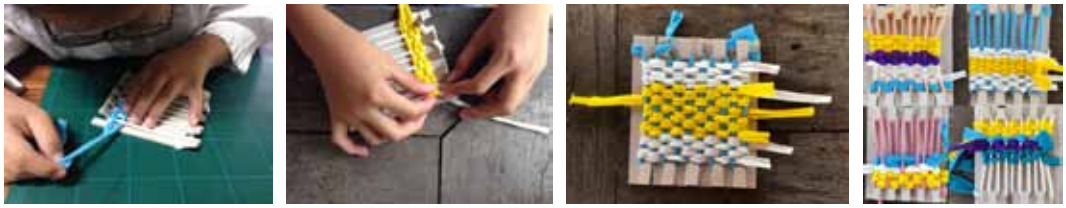


Figure 14. Weavings with homemade cardboard looms.

The students suitable for weavings with homemade cardboard looms are those with a developmental level in the pre-schematic stage, the schematic stage and the pseudo-naturalistic stage.

At the end of the exploration stage, according to Viktor Lowenfeld's stages of artistic development in children, it was found that children with developmental retardation did not perform well in scribbles activities and could not concentrate on a task long enough. But in some activities such as clay and weavings, it was found that they can do their work well and can concentrate on working for a longer periods of time.

c. Experiencing Stage
At this stage, the research was conducted with one on one meetings. These individual activities were arranged as one weekly session of 50 minutes each for four months (one semester). Three students were selected to take part in art activities which they were good at to build up their capacity as follows:

• Pottery
The student with a developmental level in the schematic stage who preferred pottery can create works in many forms, such as mugs, soap dishes, cactus pots and coasters. After two weeks, he made the decoration inspired by his favorite theme like cats.

Figure 15. The student created works in many forms.

• Weaving and stitcheries
The student with a developmental level in the pre-schematic stage who has talents in weaving as she could concentrate and perform the task meticulously. She was encouraged to use a pocket loom and fine threads for weaving.

Figure 16. Weavings with pocket loom.

After four weeks, an automatic sewing machine was provided for the activity to build up the stitchery skills. It was found that the student had a good eye-hand coordination. She did patchwork and differentiate patterns of front and backside. With the researcher's help, she could stitch the given pattern.

Figure 17. Stitcheries with the automatic sewing machine.

• Illustrations
Having learned that the student with a developmental level in the pseudo-naturalistic stage can create illustrations, the researcher developed a drawing program giving information about art history, ranging from the prehistoric age to the Renaissance, with many examples of architecture, sculpture and painting from each period. Then, the researcher reviewed the experiences by asking him to draw what interested him in the program. It was found that he showed much interest in architecture and could pick out details of places.

Figure 18. The student created illustrations of the world's famous architecture.

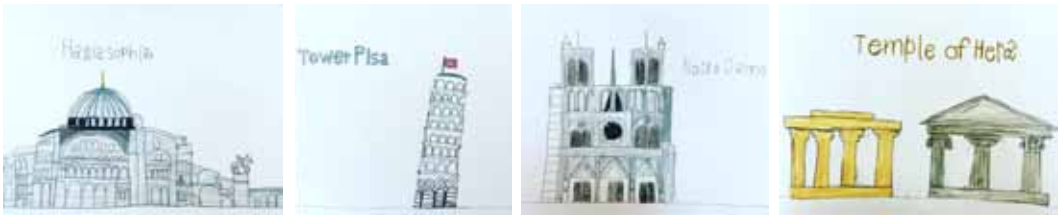


Figure 18 Cont. The student created illustrations of the world's famous architecture.

After 8 weeks, the topic shifted to important places he knows and has visited. He started with his own school, Ananda Samakhom Throne Hall and Bangkok's Giant Swing.

Figure 19. Illustrations of the important places.

d. Empowerment Stage

Upon completion, the researcher developed products from students' artworks as follows:

- Embroidered bags with patterns from drawings such as beetles, bees, ticks & embroidery on paintbrush works.

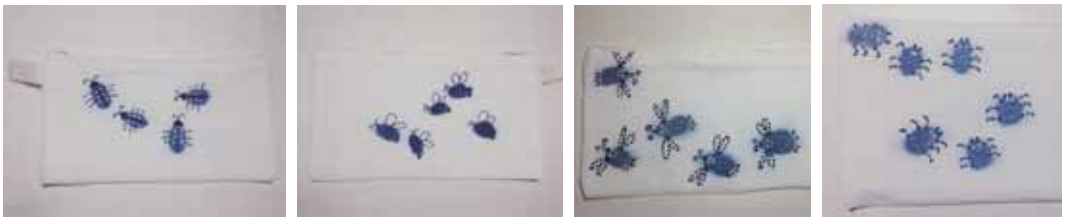


Figure 20. Embroidered bags with patterns from children's imagination.

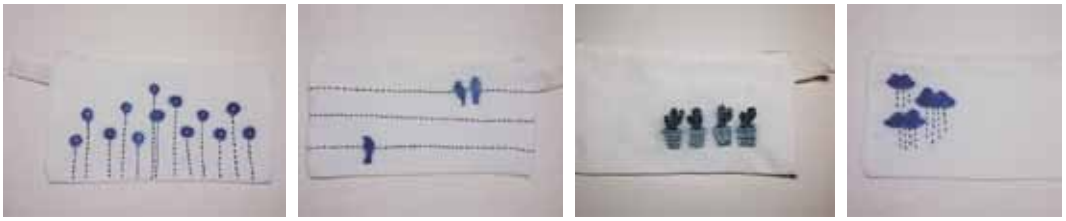


Figure 21. Embroidered bags from paintbrush works.

Figure 22. Embroidered bags can be put on sale at the trade fair.

- Ceramics in pottery craft such as hand dishes, leaf bowls, coil pots, candle holders and slab lanterns were color-glaze to have products fit for sale.

Figure 23. Ceramics in the form of pottery crafts.

- Cushion covers made from dropper painting works.

Figure 24. Cushion covers.

Figure 25. Cushion covers and dropper painting work can be put on sale at trade fair.

- T-shirt patterns developed from crayons and sandpaper works and hot-pressed on them.

Figure 26. Patterned T-shirts from crayons and sandpaper works.

Coasters made from weaving with homemade cardboard looms.

Figure 27. Woven coasters.

When the students saw their completed works and learned that their works were developed and sold, generating income for the school, they were proud of themselves.

Figure 28. Provides income to the school.

Conclusion

The study "the process of creating a work of art from sensory integration of students with intellectual disabilities" has found that the model of creating art based on art therapy can be divided into stages, namely the establishment of rapport stage, exploration stage, experiencing stage and empowerment stage. The experiment was implemented using different materials and techniques to match each child's preferences and abilities and covers these three senses in sensory integration: vestibular, proprioceptive and tactile senses. The full process is shown in the following diagram.

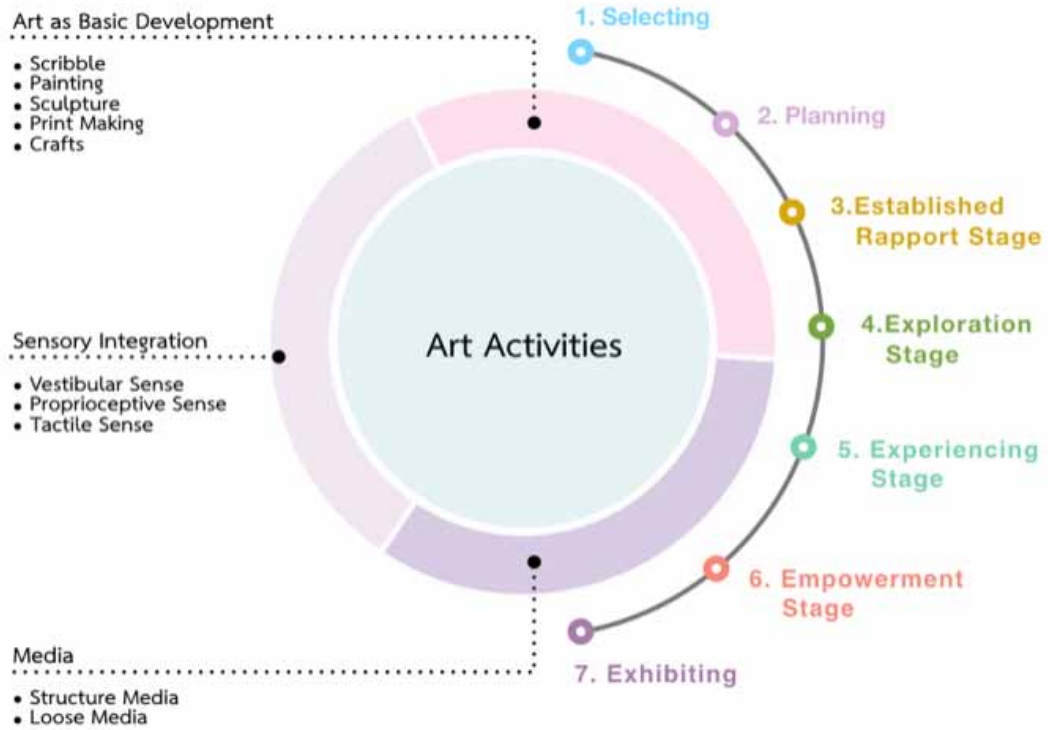


Figure 29. Diagram presents the process of creating a work of art.

This model of art activities are expected to give ideas on how to arrange art instruction for children with intellectual disabilities, which can lead to guidelines for arranging activities in different forms allowing for the recognition of individual children's interest, talents and needs.

Below is the table of the model with various art activities according to Viktor Lowenfeld's theory of artistic development.

Activity	Materials and Techniques	Stages of Artistic Development
Painting	- Crayon and sandpaper (model 1: coloring patterns)	- Pre-schematic stage - Schematic stage - The pseudo-naturalistic stage: the age of reasoning
	• Crayon and sandpaper (model 2: free drawing and coloring)	• The pseudo-naturalistic stage: the age of reasoning
	• Painting with bubbles	• Pre-schematic stage • Schematic stage
	• Squirt gun painting	• Pre-schematic stage • Schematic stage
	• Spray painting	• Pre-schematic stage • Schematic stage
	• Dropper painting	• Pre-schematic stage • Schematic stage
	• Paintbrushes coloring patterns	• Schematic stage • The pseudo-naturalistic stage: the age of reasoning
Print Making	• Fingerprints and thumbprints	• Pre-schematic stage • Schematic stage
	• Thumbprints and scribbles • Create drawing from fingerprints	• The Pseudo-naturalistic stage: the age of reasoning
Clay	• Hand dish	• Pre-schematic stage • Schematic stage • The Pseudo-naturalistic stage: the age of reasoning
	• Leaf bowl	• Pre-schematic stage • Schematic stage • The pseudo-naturalistic stage: the age of reasoning
	• Coil pot	• Schematic stage • The pseudo-naturalistic stage: the age of reasoning
	• Slab lantern	• The pseudo-naturalistic stage: the age of reasoning
Crafts	• Weavings with homemade cardboard looms	• Pre-schematic stage • Schematic stage • The pseudo-naturalistic stage: the age of reasoning

Figure 30. Materials and techniques of activities for development and disability.

In the process of creating a works of art from the sensory integration of children with intellectual disabilities, artistic innovation can occur by this integration of science and art. If these activities were scaled up and diversified, they could enable teachers to recognize children's interests and aptitudes thereby bringing

forth the capacity (potential) and talents from each individual. This also enables instructors to find suitable occupational training for an individual child with intellectual disabilities.

It must not be forgotten that children's artworks possess their own value despite what some term, having imperfections. The works are invaluable as they encourage children to think, imagine, concentrate and put effort. They learn through the artistic process. Adding more functions and design, children's artworks could be developed into products in various forms, including bags, fabric bags, coasters, coffee mugs, soap dishes, accessories and home decorations such as cushion covers, pots, candle holders and lanterns, etc. The products can be put on sale and generate income for the children, families and their schools. Adding this functional value to artworks of children with intellectual disabilities can change the attitude of the public who may have only been motivated to be supportive solely out of compassion. Based on these items integration, people may decide to buy these products because it really meets functional, aesthetic and alturistic need instead of just the latter.

This study "The Process of Creating a Work of Art from Sensory Integration of Students with Intellectual Disabilities" aimed to create a model of artistic innovation by combining sensory integration with art therapy. This concept can be employed to create item that possess artistic value and practicability while enhancing the creativity in other groups, e.g., those with other disabilities or those in remote areas. As a result, they shall gain access to artistic expression and benefit from sensory integration through various materials and techniques. It is also expected to inspire art teachers to view art as a capacity development tool for children.

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