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The Assemblage Art For The Development Of Artistic And Aesthetic Experiences For Female Students With Visual Disabilities

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Abstract:
Visually impaired individuals represent a significant segment of the global population and require attention through educational programs such as art education. This study aimed to explore the role of assemblage art in developing artistic and aesthetic experiences among visually impaired female students through an art education unit using non-traditional materials. A survey was conducted to collect the opinions of expert judges on the items of the proposed teaching unit, which consisted of eight sessions. The study adopted a quasi-experimental approach using pre- and post-assessment of the same group, which included six intentionally selected second-grade intermediate students at Al-Noor Institute in Riyadh. The tools included scales for artistic and aesthetic experiences developed by the researchers, along with an observation card to evaluate student artworks before and after the implementation of the unit, assessing the impact of assemblage art on their development. The Wilcoxon test and Black's equation were used for statistical analysis. Results showed a statistically significant difference in favor of the post-test scores on both scales. The study recommends making use of art education to enhance creative abilities and foster inventive thinking among visually impaired female students.

Keywords: *Assemblage, artistic experiences, aesthetic experiences, visual impairment*

1. Introduction

People with visual impairments form an important segment of society and deserve careful attention and support. It is essential to consider their specific circumstances and provide the necessary means to help them overcome the challenges associated with vision loss. Art education plays a vital role in this regard, as it stimulates mental and imaginative activity by training the senses particularly the sense of touch, which is central to their interaction with the world. [1].

The sense of touch holds secondary importance to individuals who are blind, coming after the sense of hearing, although both senses complement one another [2]. For them, touch serves as a primary means to perceive and appreciate the beauty of the external world. It also acts as a channel for gaining experience. The hands function as tools of inquiry, learning, and action, and thus play a central role in their daily lives. Through tactile exploration, they are able to identify textures distinguishing between roughness and smoothness, hardness and softness, dryness and moisture, angles and curves, sharpness and delicacy while also making associations between the sizes, shapes, and spatial dimensions of objects [3].

In the modern and contemporary era, artists have increasingly engaged in exploration and experimentation to find new visual solutions aligned with the intellectual and cultural dimensions of the present age. These efforts have often relied on the tactile qualities of materials and the aesthetic transformations and visual experiences resulting from them [4]. Various artistic philosophies have also emerged that emphasize the importance of materials, including the philosophy of (Laurah Chapman), which is based on the direct practice of art through physical contact with materials and immersion in them as expressive tools. When art is used as a means of expression, it becomes a source of personal fulfillment. Thus, learning how to perceive expressive forms is no less important than learning how to create them [5].

This shift opened the way for greater freedom in exploring new materials and incorporating ready-made objects into the surface of the artwork. As a result, many new concepts and artistic movements emerged, including the art of collage, which soon evolved into the art of assemblage. Assemblage is a method of creating works of art entirely from pre-existing materials, where the artist's role lies more in establishing relationships between these elements and arranging them side by side, rather than inventing or producing new objects from scratch [6].

According to William C. Seitz, assemblage works are artworks that incorporate more than one material on the surface of the piece. These works are not painted or drawn, and may be created using natural or manufactured materials that had previously been shaped - for example, through casting in molds as seen in the works of artists such as R. Rauschenberg, J. Dine, and Margaret Mellis [7].

Hence, it becomes clear that the art of assemblage involves the combination of pre-existing objects in a way that retains their original identity; however, within the context of the artwork, they take on a new form. [8]. It sometimes also reflects the philosophy of transforming the environment, with all its elements, into a work of art in itself. In this process, the artist presents a unique perspective to convey specific content by combining elements or vocabulary with symbolic connotations, which positions art as a creative activity driven by innovative artistic techniques [9].

Thus, it becomes clear that the assemblage art style creates varied textures on the surface of the artwork. Since people with visual impairments rely on their senses of hearing and touch to perceive the world around them [10], the researcher aimed to use the tactile and technical aspects of assemblage art to enhance the artistic and aesthetic experiences of visually impaired female student.

The trend toward developing artistic and aesthetic experiences enables this group to express their emotions and communicate them to others. This is achieved by refining the physical movements involved in the artistic production process, which, in turn, helps improve motor skills. As students form or assemble different materials, they explore innovative ways of presenting them on the surface of the artwork, in alignment with the concept of beauty (artistic) as described by [11].

"The aesthetic experience is achieved through the practice of artistic work involving visual, auditory, and sensory interaction, using different artistic materials. Through sight, the student can view various artistic models, while hearing provides different artistic knowledge. The sense of touch is essential, as students directly interact with tools, equipment, and materials, applying what they have seen and heard" [12]. The researcher emphasizes that the sense of touch plays a crucial role in overcoming the loss of sight, enabling visually impaired individuals to have aesthetic experiences. This is a key element in achieving societal balance, as it guides public behavior to preserve the social environment and fosters a sophisticated society characterized by moral values and the arts of good taste [13].

2. Study Problem

The Kingdom of Saudi Arabia is encouraged to focus on people with disabilities, particularly those with visual impairments, across various fields. The goal is to help them adapt to their environment, develop their experiences and abilities to become self-reliant, and enable them to become effective members of society.

This drew the researcher's attention to reviewing the curricula designed for visually impaired individuals and their artwork. After conducting interviews with educators in this field, the researcher noted that the current artwork mainly consists of linear and chromatic expressions, which lack artistic significance and are devoid of any real artistic or aesthetic value, as far as the researcher is concerned. Additionally, since visually impaired female students have limited prior exposure to visual images, they are unfamiliar with basic environmental vocabulary [14]. Therefore, based on his expertise in art education and special education, the researcher proposed creating an introduction to fundamental artistic expressions that incorporate elements of the surrounding environment, helping students recognize natural forms. The idea that sight and perception are not limited to the eyes alone was emphasized, as the blind can perceive their surroundings through touch, linking everything they feel with insight

The researcher also reviewed scientific studies on assemblage art, which involves combining and composing various materials with different textures, thicknesses, and dimensions [15]. Assemblage art can be used in an artistic context to create works with multiple tactile and aesthetic values. This approach helps develop the artistic

experiences of visually impaired female students and enhances their ability to perceive and appreciate each other's works, ultimately fostering their aesthetic experience.

Based on the above, the study's problem is represented by the following main question

"How can we leverage the methods and techniques of material processing in assemblage art to develop the artistic and aesthetic skills of visually impaired female students in the second grade of middle school?"

This question branches into the following sub-questions:

"What is the effectiveness of a proposed teaching unit based on material processing techniques in assemblage art to develop artistic and aesthetic skills among visually impaired female students in the second grade of middle school?"

"What is the possibility of creating artwork using the assemblage technique that includes artistic and aesthetic experiences for visually impaired female students in the second grade of middle school?"

"How can the artistic and aesthetic experiences acquired by visually impaired female students in the second grade of middle school be measured?"

3. Study Objectives

"Analyze a selection of artworks based on assemblage art to extract the most important methods and techniques for treating unconventional materials with tactile values."

"Discover the role of assemblage art in developing artistic and aesthetic experiences among visually impaired female students, through an art education teaching unit using non-traditional materials."

4. Study terminology

Assemblage

Meaning assemblage, in the dictionary of fine arts, assemblage refers to the technique of constructing three-dimensional works by combining a variety of composite objects, sometimes incorporating elements formed by the artist [16].

It is defined as an artistic style that relies on assembling and composing different materials whether natural or industrial to produce three-dimensional objects and create real, formative dimensions for the artwork. It is also defined as "the creation of two- or three-dimensional artistic compositions by assembling found objects" [17].

Expertise

From the perspective of philosopher John Dewey, "experience" refers to situations in which an individual interacts with others. These experiences affect both the individual and those around them, and the outcomes become part of their behavior, whether those outcomes are in the form of information, skills, or attitudes [18].

Artistic expertise

Artistic experience "refers to the process of production, making, and creation by hand. It is the individual's expression of thoughts, feelings, and emotions through art" [19]. Dewey emphasizes that "each experience must serve as a means to reorganize and reconstruct the next experience." He often stated, "Education is for experience, through experience, and for the sake of experience" [20].

Aesthetic expertise

Aesthetic experience refers to "the process of perceiving, tasting, and appreciating an artistic product." Dewey argues that aesthetic experience provides unity and consistency to scattered actions, feelings, and thoughts. In every mental experience or action a person performs, there is an aesthetic aspect related to the person and the system they follow [21].

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Visual disability

Visual impairment refers to varying degrees of vision loss, from total blindness where the individual cannot perceive light to partial vision, where individuals can distinguish some visible objects with their remaining sight [22].

5. Study literature

5.1 The art of Assemblage

The term "assemblage" was first used in 1953 by Jean Dubuffet to describe artworks created from used car parts and household items. Additionally, in 1912, Picasso used a piece of his own guitar in one of his works (Figure 1), which occurred three years before the Dada artist Marcel Duchamp used a bicycle wheel attached to an armless chair (Figure 2). At that time, this form of art was referred to as "Objects" [16].

Fig. **1**.The artist Picasso 1912 – Guitar
https://2u.pw/CRL3VnoO

Fig. **2**.The artist Marcel Duchamp 1913 – Wheel On a chair
https://2u.pw/blzvDBOg

The term "assemblage" was later adopted by Peter Selz and William Seitz, curators of the Museum of Modern Art in New York, during an exhibition held in 1961. In this exhibition, they defined assemblage works as artworks that are neither colored, drawn, molded, nor engraved, and whose components are either wholly or partially made from natural or manufactured materials, or objects and parts of objects not originally intended for artistic use [15].

Friedman and others (2002) described assemblage as an artistic style that broke away from the themes dominated by abstract art. It sought new aesthetic formations based on the use of ready-made parts and components from both natural and manufactured environments. These elements were used in artworks that combined photography and sculpture. Smith stated that assemblage art developed from collage art, particularly by artists of the post-World War II generation, and served as a means of creating artwork from previously existing elements [23].

5.2 Meaning of the term assembly

In English, the term "assemblage" refers to the act of composing or combining separate parts to form a complete unit. It involves assembling different components to create a whole. In the visual arts, assemblage refers to two- or three-dimensional artworks created by assembling discarded objects or objects made for non-artistic purposes. These objects, often referred to as "Ready-mades," are re-purposed and transformed into works of art. Assemblage is often considered the three-dimensional counterpart to collage art. Additionally, it can refer to shapes or objects that are fixed to a wall or another two-dimensional surface [24].

Assemblage art has been described as reflecting a philosophy of consumption. It repurposes objects from the surrounding environment that were made for non-artistic purposes – and reuses them in a new context [25].In the modern era, artists have been able to liberate themselves from traditional artistic forms by using diverse, unconventional materials in their assemblages. This creative freedom allows them to work with discarded materials often items originally meant for non-artistic purposes which are overlooked and underused. Contemporary artists have found ways to transform these materials into meaningful and valuable works of art, thus giving them new functional value [26].

Contemporary assemblage art represents a shift in artistic thought. It relies on the assembly of ready-made pieces from the remnants of consumer society, reassembling them to create new relationships and using these materials to express ideas in unconventional ways [27].

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5.3 Analysis of Selected Works of Art Based on the Thought and Philosophy of Assemblage Art

The researcher analyzed selected artworks based on the philosophy of assemblage art. The aim was to identify the most important methods and techniques in working with unconventional materials that have tactile qualities. The artists selected for this analysis played a significant role in the global art movement and contributed to raising national critical and analytical awareness of the meanings embedded in contemporary works, which are characterized by the use of assemblage art techniques

Artist's Name: Marisol Escobar

- Work name: Family Shape (3)
- Work type: Assembly style photography
- Implementation date: 1962 AD.
- Work size: 209.8 x 166.3 x 39.3 cm.
- Exhibition location: Museum of Modern Art, New York.

Shape analysis:

- Materials used: wood, color dyes.
- Execution technique: wood carving, gluing, and fixing.

Artistic Style:

Marisol broke away from the traditional painting frame, working directly on wooden blocks. Clothing and other features are detailed using pigment. Her style creates multiple perspectives, a feature common in modern assemblage and contemporary photography.

Artist's Name: Robert Rauschenberg

- Work name: Valley Shape (4).
- Type of work: Assembly style photography.
- Date of implementation: 1959 AD.
- Work size: 225 x 182 x 16 cm.
- Venue: Museum of Contemporary Art, Los Angeles.

Shape Analysis:

- Materials Used: Fabric scraps, oil paint, paper, metal scraps, adhesives, a stuffed eagle, ropes
- Techniques Applied: Three-dimensional object placement, pasting, fixing, collage

Artistic Style:

Fig . **4**. The Valley Panel

https://2u.pw/XJW2mpcO

Fig . **3**.family board

https://2u.pw/aeGwiQi7

Fig . **5**. Board Plaster and target

https://2u.pw/QU9EaafV

Rauschenberg combines assemblage with collage, employing recycled materials and tactile elements to explore experimental approaches. His use of stuffed natural objects alongside industrial remnants exemplifies the evolution of post-war assemblage art into a complex narrative form.

Artist's name: Jasper Johns.
- Work name: Target and shapes plaster shape (5).
- Type of work: Assembly style photography.
- Implementation date: 1955 AD.
- Work size: 51 x 44 inches.
- Venue: Locastelli Collection, New York.

Shape Analysis:
- Materials Used: Color pigments, polyester, adhesives
- Techniques Applied: Shaping using three-dimensional materials, collage, casting, pasting, and fixing

Artistic Style:
Johns employs assemblage art by incorporating found materials and waste elements into his composition. His use of a shooting target and cast polyester faces gives physical form to conceptual messages. He utilizes real voids within the structure to challenge traditional spatial illusions. This move away from the flat surface toward a layered three-dimensional construction gives the work philosophical and sensory depth [28], [29].

Artist's Name: Abdel Salam Eid
- Work title: Women in the circle of violence, Figure (6).
- Type of work: Assembly style photography.
- Implementation date: 2017.
- Work size: 50 x 70 cm.
- Exhibition location: Artist Abdel Salam Eid Exhibition - Club Alexandria Sports Club.

Shape Analysis:
- Materials Used: Wood, fabric, color pigments, foam, glue
- Techniques Applied: Foam shaping, wood carving, gluing, fixing, painting

Artistic Style:
Eid breaks free from traditional painting constraints by integrating sculptural elements and mixed materials. His tactile surfaces and expressive textures engage the viewer directly, making the experience both visual and sensory. His approach highlights the materiality of the artwork, reinforcing the theme through tangible forms and enhancing interaction with the audience.

Fig . **7**. The Tragedy of a Family from https://2u.pw/rnPO9aLH

Fig . **6**. Panel For a woman in the cycle of violence https://2u.pw/gmFn7laB

Artist's Name: Yasser Mohamed Fadl
- Work name: The Tragedy of a Family from Jenin, Figure (7).
- Type of work: Assembly style photography.
- Implementation date: 2002.
- Work size: 122 x 18.5 x 74.5 cm.
- Exhibition venue: 12th Youth Salon.

Shape Analysis:
oMaterials Used: Fabric, acrylic paint, white glue, ropes, wood, hummus glue, plastic dough, nails, sponge
oTechniques Applied: Shaping with models and fabric, pasting, fixing, painting

Artistic Style:
Fadl moves beyond traditional painting, embracing assemblage to convey the emotional and psychological trauma of his subject. By using mixed media, including 3D models, he allows viewers to engage with the work on a visceral level. The artist's embodiment of the martyr figure enables deeper empathy and interaction, while his layering of materials and textures creates a rich, multi-dimensional experience.

Artist's name: Safia Al-Maria.
oWork name: Healing Imaginations, Figure (8).
oType of work: Assembly style photography.
oImplementation date: 2022 AD.
oWork size: 150 x 100 cm.
oShow location: Jax District.

Shape analysis
oMaterials Used: Acrylic paint, paper scraps, projector, plastic elements
oTechniques Applied: Gluing, fixing, wrapping

Artistic Style:
Blending assemblage, light projection, and video, the artist gives traditional collage a contemporary edge. The interaction of textures, colors, and light adds dimension and movement. Her experimental use of media helps deliver a powerful social message while transforming the artwork into an interactive, multi-sensory experience.

Fig . **9**. The Tale of the Land, Sea, and Stars Panel
https://2u.pw/Rs6a7pO0

Fig . **8**. Healing Imaginations board
https://2u.pw/8pwbL

Artist's name: Amina Al-Baker.
oWork name: The Story of the Earth, the Sea and the Stars, Figure (9).
oType of work: 3D photography.
oImplementation date: 2023 AD.
oWork size: 220 x 400 cm.
oShow location: Jax District.

Shape Analysis:
oMaterials Used: Wood, colored dyes, fabrics, metal wires
oTechniques Applied: Fabric collage, pasting, fixing, coloring

Artistic Style:
The inclusion of Arabic calligraphy, the palm tree motif, and representations of the region's natural terrain emphasize national identity. The use of traditional symbols and environmental themes reflects a strong sense of cultural belonging and historical continuity.

5.4 Methods and techniques of processing materials in artwork based on the art of assembly

Through the analysis of previous artworks, it becomes clear that the contemporary artist has achieved visions in order to bring about a transformation in the form and visual surface of the artwork, through the use of industrial materials and neglected objects, materials of wood, plastic, pieces of cloth, iron, aluminum, and others, so that the artist's achievements take on multiple levels on the surface with materials and materials of various shapes, types, and textures, producing artistic experiences that standardize their use on the surface of the artwork.[8].

The artist's craftsmanship lies in understanding the properties of these materials and using them expressively. Assemblage often involves collecting and recomposing damaged or discarded items to form a new artistic composition [30]. Ready-made materials have become a key feature in the aesthetic transformations of post-industrial society, especially within postmodern trends. This is evident in works that present a variety of raw materials in unconventional ways. A clear example is the work of artist Louise Nevelson, who used boxes and cages connected to structural parts like stairways and wooden chairs, all dyed and unified in form and color [28].

5.5 The role of assembly art in Enhancing the recipient's sensory experience:

Assemblage art contributes to creating a deep sensory experience for the recipient. By employing unconventional materials with varied textures on the surface of the artwork, the recipient becomes actively involved in the artistic process [31]. This highlights the importance of using the formative and aesthetic potentials of diverse materials in artworks produced by female students with visual impairments, in ways that enhance their sensory engagement and deepen their understanding of the themes based on their artistic and aesthetic experiences.

Sensory absorption is considered one of the foundational pillars of assemblage art. Artists are encouraged to engage multiple senses most notably touch, and even smell [32]. The integration of multiple sensory channels enhances the technical experience and allows for the formulation of artworks in new and innovative ways. These sensory-technical experiments encourage individuals to reflect on their personal experiences and how those experiences shape their identity. Such moments of reflection offer an opportunity to deepen artistic understanding and enhance communication with others [33].

"Integrating different materials in an artwork enriches the visual structure and enhances the viewer's sensory experience" [34]. The process of integrating diverse materials enables the artist to express new visions and convey the content of their artworks. These materials may vary between natural ones such as wood and clay and industrial ones such as plastic and metals. Al-Najjar (2022) noted that the diversity of materials contributes to producing unconventional visual effects that enhance the artwork's aesthetics. This variety provides the artist with broader freedom of expression. The sensory impact of materials is a key aspect of innovation that elevates the viewer's experience. For instance [35], rough materials can evoke sensations of strength and rigidity, while soft materials convey calmness and tenderness. According to Suleiman (2020), materials can express deep human emotions and foster a stronger connection between the artwork and the viewer. This affirms the importance of carefully selecting raw materials to influence the sensory experience [36].

The techniques used in artworks are integral to innovation. Artists today can employ modern technologies such as 3D printing, digital sculpting, and even augmented reality to produce unique artistic experiences. Al-Nimr (2023) stated that such technologies allow artists to explore new creative dimensions, enriching the artistic process. This indicates that technology can revolutionize the art world. In contemporary art, the merging of materials and technologies has become more apparent and advanced. Artists rely on unconventional approaches to create works that interact directly with the viewer [37].

Innovation in the use of materials has profound psychological effects on the recipient. Different materials can trigger diverse emotions and reflect varied human experiences. Materials also influence the psychological response to an artwork, which in turn impacts the viewer's perception [38]. This underlines the importance of thoughtful material selection and intentional application within the artistic process.

The interaction between materials and techniques can significantly enhance the overall artistic experience, especially when specific materials are paired with appropriate techniques. This fusion can influence both the technical and aesthetic outcomes of the work.

5.6 Concept of Technical expertise and aesthetic experience

John Dewey makes experience the basis of education and a pattern of freedom, and means a position of the individual's lives with the guests, he is affected and is affected by it, and he learns this place, where these results become part of his control, or to be information or skills or trends[11]. Dewey also viewed education as a process of reconstructing experience, both on the personal and societal levels. This view aligns with the theory of natural and social development, in which education is seen as a continuous sequence of experiences each one building upon and leading to the next. Through this process, the individual's connections with the surrounding environment expand, and their understanding of meanings deepens. In doing so, the individual gains the ability to influence and control their surroundings while also adapting to them [39].

Technical expertise is a type of experience acquired by students, allowing them to engage in hands-on work, practical experimentation, and collaborative projects. This includes participation in team-based activities using modern technical methods and tools that promote interaction, role performance, and professional execution [40]. According to Hassan (2014), artistic experience is tied to the formative values that the artist seeks to achieve through the elements and foundations of visual composition, aiming to convey a specific intellectual or aesthetic message [41]. Mazouz (2016) emphasized that technical experience is developed as the learner practices different forms of art included in educational curricula, in order to acquire technical skills and performance abilities, such as manipulating environmental materials and exploring different methods of shaping them [42]. As also confirmed by Al-Hunaidi (2006), technical experience is an activity in which the child uses raw materials and various artistic tools, stimulated by different properties of these materials even if only through play and experimentation [43].

If aesthetic experience represents the highest and most refined level of experience, then it cannot be understood without first passing through more basic, everyday forms of experience. According to Dewey, the aesthetic experience cannot be grasped without understanding the simpler forms in which experience appears in its clearest and most straightforward state. He rejected the classical notion of knowledge as simply a match between a knowing subject and a known object. Instead, he emphasized that knowledge is an evolving method scientific in nature that develops as experience develops, and is therefore fluid and not static [44]. Thus, experience is measured by its ability to effect behavioral change and influence future experiences. Dewey stressed that every experience must serve to restructure and rebuild the next, which is why he asserted: "Education is for experience, through experience, and for the sake of experience" [19].

Dewey also defined aesthetic experience as the process that gives unity and coherence to scattered actions, emotions, and thoughts because in every cognitive experience or action, there is an aesthetic aspect that reflects the individual and their inner system [11].

Aesthetic experience involves engaging the recipient's emotional world through their perception and appreciation of beauty in the artwork. It arises from the formative values embedded in the artwork's shape and material, as well as from the expressive values conveyed through its subject matter, artistic approach, compositional style, and visual structuring [45].

Aesthetic experience is defined as the combination of technical qualities and descriptive features that, when explored, reveal aesthetic concepts and compositional values, leading to a sense of joy and satisfaction. The visual elements and their interpretive connotations form the most essential part of any artwork. Their value lies in the creative energy that manifests through the artist's imagination culminating in an aesthetic vision aligned with the artist's intent and expressive meaning [24].

Aesthetic experience also refers to the ability to make value judgments about artistic forms. This includes personal taste and the emotional responses that individuals feel while evaluating works of art. Such responses often stem from the interaction between the artist and the viewer via the artwork, and depend on how clearly the composition communicates its intended message [45].

According to Bertrand Russell, aesthetic experience not only includes everything we do for ourselves or what others do for us with the aim of elevating us or bringing us closer to perfection, but it also includes indirect effects that touch our morals, character, and human potential. Everything that contributes to refining human personality aligns with aesthetic values [46]. Likewise, Samuel Dufrenne emphasized that aesthetic experience is not a fixed concept with rigid rules or definitions; rather, it is the very experience through which beauty is realized via the artwork [47].

5.7 The art of assembly and its relationship with technical and aesthetic expertise:

Technically, assemblage art distinguishes itself from other artistic forms in its reliance on materials and neglected objects things that the artist pays special attention to, in contrast to their dismissal by others in the surrounding environment. This approach grants the artistic product a distinct character of novelty and originality. The resulting artwork becomes a combination of personal vision and technical experience, through which the artist creates a unique and innovative product [48].

Each of these materials and overlooked objects contributes to achieving the aesthetic value of the artwork when these elements are employed in ways that enhance their visual and expressive impact. The quality of the work is not determined by the diversity of materials alone, but rather by the level of technical expertise shown in composing and integrating them into a cohesive format that supports the content and strengthens the intended message. This, in essence, is the core of technology in the art of assemblage [49].

Assemblage techniques deepen the aesthetic and emotional experience for the student through direct sensory and tactile interaction with the elements used in the artwork elements that are often sourced from eco-friendly or reclaimed materials [50]. The nature of assemblage art requires the actual embodiment of components on the artwork's surface, which in turn provides students with opportunities to explore the aesthetics of different materials in terms of form, texture, and substance [51].

This experience is not limited to the artwork alone it extends to the recipient's physical interaction with the assemblage piece. The tactile nature of the materials offers the recipient a stronger sense of the structural and aesthetic relationships between the components used [52]. This self-awareness enhances the aesthetic experience and helps the student connect their body and senses to the artwork. It also provides students with the opportunity to express their feelings and personal interpretations of the work. When students control how they engage with the piece, they are able to create a unique artistic experience that reflects their aesthetic preferences and individual perspectives [53]. This capacity for personal interpretation and expression fosters a deeper sense of integration and aesthetic awareness in the student.

From all of the above, it becomes clear that the techniques of assemblage art depend on direct sensory and tactile engagement with the materials used in the artwork. This highlights the embodied nature of aesthetic experience, which requires the student's active physical participation. Such participation shifts the student from a passive viewer to a fully immersed participant achieving total sensory integration [32].

5.8 The role of aesthetic experience in developing the ability to appreciate art

Aesthetic experience plays a fundamental role in developing the individual's ability to appreciate works of art. Through it, a person becomes capable of forming refined artistic taste, experiencing emotional engagement, and issuing value judgments about what they see and interact with. The aesthetic experience serves not only as a response to the external appearance of artworks but also as a way of exploring the expressive content and internal structure of a piece.

The more intense and interactive the aesthetic experience, the more capable the individual becomes of grasping the visual relationships between shapes, lines, colors, textures, and materials. This kind of perception depends on the sensitivity of the recipient to artistic values, and their ability to recognize and reflect on them emotionally and intellectually.

Aesthetic experience encourages contemplation, develops the imagination, and opens up broader horizons for understanding the visual language of art. It sharpens the individual's sense of proportion, harmony, and visual rhythm, and enables them to discern subtleties in artistic expression such as contrasts, balance, unity, and focal points.

Moreover, aesthetic experience reinforces the emotional connection between the viewer and the work of art. It creates a space for the individual to project their own feelings and memories onto the artwork, deepening the personal meaning they derive from it. This, in turn, leads to a greater appreciation of the artist's intention, and a heightened sensitivity to symbolic and cultural meanings embedded in the artwork.

Thus, the development of aesthetic experience is not limited to acquiring technical knowledge or learning the names of artistic styles. Rather, it is a holistic process involving the senses, emotions, memory, imagination, and

reasoning. It supports the development of visual literacy, which is essential for appreciating art in all its forms be it traditional, contemporary, or experimental.
Through repeated exposure to artworks and active engagement with them, individuals develop their ability to interpret, evaluate, and articulate their responses. This is the core of art appreciation: an evolving dialogue between the viewer and the artwork, driven by a maturing aesthetic awareness.

5.9Artistic and aesthetic experience through touch for the visually impaired
The sense of touch has gained increasing attention in both sensory studies and artistic practice. In recent years, there has been growing academic interest in moving beyond sight and vision. For instance, the Astronomy Exhibition for the Blind (2013) by South African artist Berco Wilsenach presents a broader critique of the dominance of the visual sense by inviting audiences to engage with artworks through touch. It is suggested that firsthand accounts of blind individuals' tactile experiences with art, combined with the insights gained from experiments conducted by artists who promote tactile interaction with their works, can enrich and expand our understanding of aesthetic experience as both visual and tactile [54].

People with disabilities often face challenges such as physical and functional barriers that limit participation. The environment and attitudes of others lead to inaccessibility and discriminatory barriers. [55]. Research exploring how blind and visually impaired individuals experience sensory environments including spatial and architectural elements has used in-depth interviews and participant observation. Results show that walls and windows are among the most impactful elements for people with visual impairments. Walls can act as tactile guides and produce echoic effects, while windows allow light to pass and provide spatial cues about external boundaries. The study revealed that blind individuals perceive temperature contrasts through open spaces, texture rhythm through wall surfaces, balance through furniture surfaces, and sound patterns through window positions [56].

6. Study Procedures

6.1 Study methodology
A quasi-experimental method was employed using a one-group experimental design to test the effectiveness of a teaching unit based on assemblage art for developing artistic and aesthetic experiences among visually impaired female students in the second grade of middle school. This was conducted through pre- and post-assessments of the experimental group. The teaching unit consisted of eight sessions, and each session was designed to include: (Session objective, Duration, Tools and materials used, Artistic activities, Technical applications, Instructional strategies) [2].

6.2 Study Population and Sample
The study community consisted of all female students with visual Facebook in the second grade of the intermediate stage in Riyadh in the Kingdom of Saudi Arabia, their number was (6) female students, and a council for small groups of studies was chosen for the new study, get to know the intentional research that consisted of (6) female students whose ages reached (14-16) years, and to verify the participants among the sample members before the start of the scientific committees, the Institute varied in age and level of Faris Al-Basri.

6.3 Study Tools
6.3.1 Technical Expertise Scale For the visually impaired
Purpose:
To measure the extent to which visually impaired female students acquire artistic experience using assemblage art techniques. The scale assesses their ability to distinguish materials, understand compositional relationships, and gain hands-on artistic practice.
Description:
The initial scale consisted of 17 items across three main dimensions:
Material Discrimination Experience (7 items):

The student's ability to distinguish between various unconventional materials (cloth, wood, plastic, etc.) by touch, in terms of texture, size, and shape.
Understanding Relationships (5 items):
The student's ability to perceive relationships among artwork components, including size, spatial position, and overall harmony.
Application of Techniques (5 items):
The student's ability to handle materials, apply techniques, and form coherent artistic compositions through repetition and practice.
Application:
Students received verbal instructions individually. Responses followed a three-point Likert scale: (3 = Always, 2 = Sometimes, 1 = Never). The total score ranged from 17 to 51 points.
Validity:
The scale was reviewed by 17 expert judges who confirmed its content validity. Their suggestions led to modifications and the final version retained 17 indicators.
Internal Consistency:
Tested using Pearson's correlation on a pilot sample. All item-total correlations were statistically significant.
The results are as shown in the following table:

Table 1. Pearson Correlation Coefficients for the Technical Expertise Scale:

Phrase Number	Correlation Coefficient	Phrase Number	Correlation Coefficient	Phrase Number	Correlation Coefficient
1	.531**	8	.364**	15	.533**
2	.401**	9	.563**	16	.558**
3	.565**	10	.518**	17	.564**
4	.648**	11	.394**		
5	.562**	12	.644**		
6	.681**	13	.625**		
7	.438**	14	.403**		

It is noted from the previous table that all values of the correlation coefficients between the score of each statement in the technical expertise scale and the total score are statistically significant, indicating the consistency of the scale statements with the scale as a whole.

Scale stability:
The reliability of the scale was assessed using Cronbach's alpha. The coefficient was calculated for the entire scale as well as for each of its three dimensions. The results are presented in the table below.

Table 2. Cronbach's alpha reliability coefficient values for the scale Technical expertise.

Axes	Number of items	Cronbach's alpha
Material discrimination experience	7	0.732
Understanding relationships	5	0.718
Gain experience	5	0.756
Total	17	0.752

As shown in the table, the Cronbach's alpha values fall within an acceptable range, supporting the scale's reliability for the study's purposes. These results confirm the validity of the scale for practical application.

6.3.2 Scale of Aesthetic Experiences For the visually impaired:
Objective:

Due to the lack of tools to measure aesthetic experience among the visually impaired, this scale was developed to assess students' aesthetic awareness after engaging in assemblage-based artistic practice.
Development Steps:
Reviewing theoretical frameworks and prior tools [57], [58].
Defining three dimensions:
Aesthetic Awareness (7 items):
The student's ability to perceive and respond to beauty, tactile detail, and emotional effect.
Perception of Aesthetic Values (11 items):
The ability to identify unity, balance, rhythm, and harmony in the artwork.
Realization of Aesthetic Values (8 items):
The student's skill in applying spatial and tactile aesthetic values through touch.
Validity:
Confirmed through expert review. Internal consistency verified on a pilot sample.

Table 3.: Pearson Correlation Coefficients for the Aesthetic Experience Scale

Phrase Number	Correlation Coefficient	Phrase Number	Correlation Coefficient	Phrase Number	Correlation Coefficient
1	.510**	10	.384**	19	.528**
2	.421**	11	.623**	20	.518**
3	.567**	12	.616**	21	.544**
4	.628**	13	.354**	22	.518**
5	.624**	14	.544**	23	.394**
6	.645**	15	.626**	24	.644**
7	.455**	16	.403**	25	.565**
8	.506**	17	.403**	26	.503**
9	.503**	18	.623**		

Internal Consistency of the Scale:
The correlation coefficients between each item's score and the total score of the Aesthetic Experiences Scale were all statistically significant ($p < 0.01$). This indicates strong consistency between the individual statements and the overall scale, confirming their relevance and coherence.

Scale Reliability:
Reliability was assessed using Cronbach's alpha, yielding a coefficient of 0.715 for the full scale. This value falls within the acceptable range, demonstrating good internal consistency and confirming the scale's stability and validity for measurement purposes.
Scale Structure and Scoring
The finalized scale consists of 26 items, distributed across three key dimensions:
- Aesthetic Awareness and Perception
- Aesthetic Values
- Aesthetic Taste

Responses were recorded using a 3-point Likert scale (3 = Always, 2 = Sometimes, 1 = Never). Thus, the total score ranges from 26 to 78, with higher scores indicating stronger aesthetic experiences.

6.4 Building and Applying the teaching unit to the experimental group
The teaching unit was built after referring to some related studies. Then, a survey was prepared for the opinions of experienced arbitrators about the items of the teaching unit and its general objective, the number of sessions, their arrangement, the time period allocated for each session, the methods and techniques used, and the objectives of each session. The teaching unit in its final form consisted of (8) sessions, and was presented at a rate

of two sessions per week, and the duration of each session ranged (45) minutes. The general objective of this unit was determined, from which a group of procedural objectives branched out that are easy to monitor and measure.

6.4.1 Methods and techniques for processing non-traditional materials used in the teaching unit

Through research studies that dealt with artworks based on the art of assembly, the quantities and plastic treatments of non-traditional materials can be monitored through the following Table (4):

Table 4.: Plastic Techniques and Treatments Used in the Teaching Unit

No.	Technique	Definition / Concept
1	Assembly	Creating artworks from pre-existing materials or remnants.
2	Synthesis	Harmonizing diverse materials not typically found together in nature; materials coexist without conflict [59].
3	Pasting	Placing flat materials (paper, fabric, environmental objects) together to form a surface composition [60].
4	Twisting (Controversy)	Binding two or more threads/wires and twisting the ends in alternating directions.
5	Bending (Tenderness)	Moving a flexible object by fixing part of it while rotating another part in various directions.
6	Rotating (The Wheel)	Fixing one end of a material and rotating the other at a set angle repeatedly.
7	Wrapping	Rotating material in one direction in a continuous and uniform pattern.
8	Braiding	Fixing three ends and bending the remaining ends inward in a repeating pattern.
9	Wrinkling	Creating folds in fabric to produce tactile effects.
10	Weaving	Interlacing warp and weft threads at right angles [61].

6.4.2 Validation of the Teaching Unit Content

The content validity of the teaching unit was verified prior to its implementation by presenting its initial draft to a group of specialized and experienced judges in curricula and art education. They were asked to evaluate the unit in terms of its suitability for the purpose for which it was developed and the target group, the appropriateness of the number and sequence of teaching sessions, their duration, the appropriateness of the methods and techniques used, and to add any other observations they deemed necessary. Based on the comments and opinions expressed by the judges, the wording of some objectives was modified to become procedural, some tools were added, the sequence of sessions was modified, and some techniques used were modified. The researchers conducted three (90)-minute preliminary sessions, during which the technical and aesthetic experience scales were administered to the experimental group (pre-test) and the artistic pre-test.. Attached are pictures of the forms of the works resulting from the pre-test in Table (6). Below are Tables (5) that show a summary of the content of the teaching unit and the techniques used.

Table 5.: Plastic techniques & treatments for non-traditional materials used in the teaching unit.

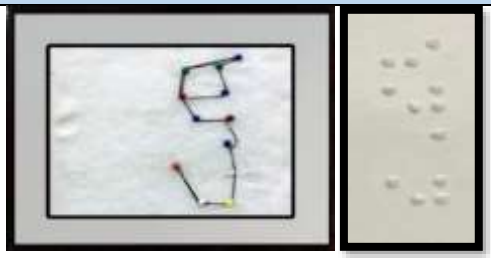
Session	Session Objectives	Tools & Materials	Activities & Strategies	Time
1	Develop ability to distinguish between shapes, sizes, and textures of materials	Variety of fabrics, woods, foams, plastics, cardboards, etc., in different shapes and textures	Students explored each material by touch, comparing their physical properties and organizing them by shape, texture, and size	45 min
2	Develop perception of part-whole relationships	Game pieces: dolls, camels, trees, animals	Students touched and described toy parts and their functions; compared multiple toys to understand structural relationships	45 min
3	Develop spatial awareness and perspective	Relief models (paper pulp, plastic)	Students explored spatial depth by touching different relief models and describing perspective relationships	45 min

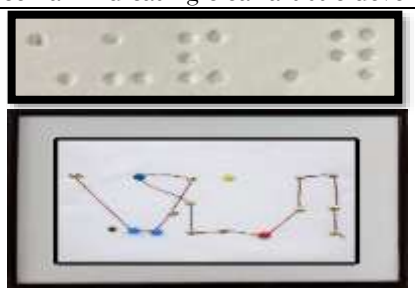
Session	Session Objectives	Tools & Materials	Activities & Strategies	Time
4	Learn plastic processing methods used in assemblage	Pliers, nails, combs, glue, magnets, unconventional materials	Examined sample assemblage artworks, described tools and techniques (assembly, bending, braiding, scraping, etc.)	45 min
5	Apply simple assemblage techniques to create a drawing	Drawing pens, glue, nails, mixed media	Created contour-line drawing (e.g. rose/heart), filled spaces using materials and techniques learned	45 min
6	Practice aesthetic appreciation of assemblage artworks	Peer work, graduate examples	Students viewed each other's work, practiced aesthetic judgment and discussion, learned analytical critique	45 min
7-8	Post-test: Apply learned techniques in final artwork	Same materials as Sessions 1 & 5	Students implemented an artwork using assemblage techniques, evaluated against previous skills	90 min

6.4.3 Steps to follow to conduct the (post-test):
Same steps were followed as in the pre-test, but this time incorporating:
- Application of assemblage art techniques
- Use of materials and experiences gained during the sessions
- Implementation instructions:
  - Write first name in Braille as a starting design element
  - Use pins and threads to connect points on the board
  - Construct a visual idea inspired by Braille characters
  - Choose from a variety of unconventional materials to build a complete artistic form

Each student created a unique piece based on their understanding of form, composition, symbolism, and technique. Detailed descriptions and analysis of the six artworks and their development were recorded in Table 6.

Table 6. Post-Test Student Artwork Analyses for the experimental group and Activities and techniques followed with each student.

Job Number And Student Name	The artwork is produced (Post-test)	Formulating the idea of the artwork with threads	The artwork is produced (Pre-test)
First work Student Hanan	 **Fig .12**. First post–work For the student Hanan	 **Fig . 11**. Stages of Formulating the First Initial Work Concept	 **Fig . 10**. The first preliminary work of the student Hanan
	Activities and arts | Raw materials (first work) post-test output: After the student wrote and connected the pins that represent the letters of her name to the thread, it was placed vertically. Figure (11); The student described the shape, at the top a square resembling a head and the diagonal line connecting the red pin to the blue resembling a neck,		

<table>
<tr><td></td><td colspan="3">and at the bottom the body and legs. Then the materials were shown to her and she was asked to choose and implement. She chose a plastic cover for the head, and a cardboard box for the body. Then she used the limbs of the doll, the hands and feet. Then she used the braiding technique to craft the hair, then she put on the shoes, then she asked for wooden sticks, cardboard, threads, a group of herbs, dried roses and cloth to craft a road. Then she wanted the background to be old buildings in the Kingdom of Saudi Arabia, through a group of three-dimensional images (relief) by touch, including the Diriyah Palace and the Masmak. Then she asked to add a small flag as in Figure (12). Then she was asked to touch the work and describe the techniques she used and the aesthetic values of the work. She explained her joy in achieving the perspective with the presence of the girl in her large size in the foreground of the work in contrast to the elements in the background, and this indicates the student's artistic experience.</td></tr>
<tr><td rowspan="2">Second work
Student Rana</td><td> 
Fig . **15**. The second post–test for student</td><td> 
Fig . **14**. Stages of Formulating the Second Initial Work Concept</td><td> 
Fig.**13**. The second preliminary work of the student Rana</td></tr>
<tr><td colspan="3">**Activities and arts | Raw materials (second work) post-test output:**
After writing her name and connecting the pins using thread (Figure 14), she was asked to describe the shape after rotating the board several times. She was allowed to move or replace some pins. She said: "It looks like a head... then the neck... this square is the body".
When asked: "Whose body is this?", she replied: "Maybe a duck... or a goose".
She was asked how she could tell. She said: "The goose has a long neck; the duck has a short one." This showed artistic understanding of the physical features of animals.
She chose cardboard for the neck and body, arranged the elements, and requested feathers, which she distributed around the form.
When asked what else she needed, she asked for a carrot and sponge circles for eyes. A range of materials was offered, and she selected from them, demonstrating her understanding of textures.
She created a lake using blue paper, which she tore and reshaped to simulate waves a technique she had practiced during the sessions (Figure 15).
She was then asked to touch the artwork and describe the techniques and aesthetic values. She discussed the contrast between the goose and the lake, the integration of visual elements, and the emotional coherence of the piece all indicating clear artistic development.</td></tr>
<tr><td>Third work
Student Aisha</td><td> 
Fig . 18. The third dimensional work of the student Aisha</td><td> 
Fig . 17. Stages of Formulating the Third Initial Work Concept for the student Aisha El Baadi</td><td> 
Fig . 16. The third preliminary work by student Aisha</td></tr>
</table>

Activities and arts | Raw materials (third work) post-test output:
After writing her name and connecting the pins using thread (Figure 17), she was asked to describe the form. She said: "This shape is complex".
When asked to elaborate, she said: "Part of it looks like an upside-down cup, below it is a line, and to the left there's a vase with roses".
She used a plastic box, a paper cup, and a ball of sponge placed inside the vase. She cut the sponge in half and attached it to the board.
She added paper, threads, shells, beads, feathers, and started creating roses using wrapping, twisting, and wrinkling techniques.
She fixed the elements in place (Figure 18) and was then asked to compare this work to her pre-test version. She said the new work had balance, unity, and rhythm, especially due to the repetition and variation of the vases. She showed recall of session content and clear artistic advancement.

Fourth work
Student Lamia

Fig . 21. Fourth dimensional work For the student Lamia

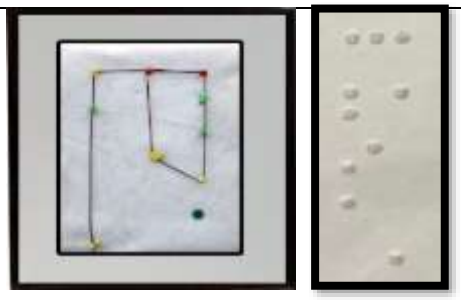


Fig.**20**. Stages of Formulating the Fourth Initial Work Concept

Fig . 19. The fourth preparatory work for the student Lamia

Activities and arts | Raw materials (fourth work) post-test output:
After writing her name and connecting the pins using thread (Figure 20), she was asked to describe the form. She said: "At first, there was a pin I didn't connect with thread because I had connected it earlier and I liked how it looked, so I removed the thread and changed the composition."
When asked to describe the result, she said: "The square is like a door, and the line is the wall of the house."
She said she wanted to use wood, palm fronds, and wooden sticks. She was given palm fronds, broke and shaped them to resemble a palm tree, and used sticks in two different sizes to create a door.
She glued the elements in place, raised the door slightly to create perspective, and added cardboard and layered papers to support the background.
Then she used paper tissues and cutouts to complete the composition. She changed the direction of the door to achieve a more effective perspective, compared to her earlier version (Figure 19).
She added rose-shaped beads, placing smaller ones near the house and larger ones at the front of the artwork to reinforce the sense of depth. The result is shown in Figure 21.

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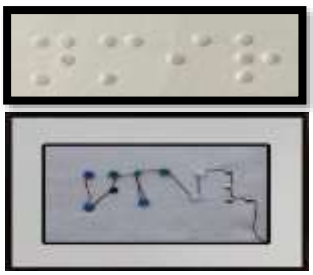
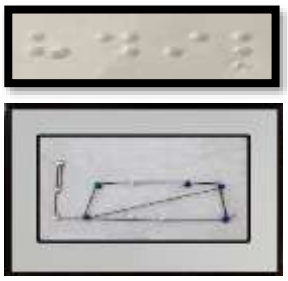
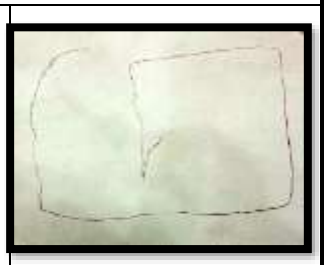
<table>
<tr><td>Fifth work
Student Namir</td><td> 
Fig . 24. Fifth dimensional work
For the student Tamir</td><td> 
Fig . 23. Stages of Formulating the Fifth Initial Work Concept</td><td> 
Fig . 22. The fifth preparatory work for the student Namir</td></tr>
<tr><td></td><td colspan="3">**Activities and arts | Raw materials (fifth work) post-test output:**
After writing her name and connecting the pins using thread (Figure 23), she was asked to describe the shape. She said: “I put some pins close together and others far apart so I could draw with thread. Then I changed some pin positions.”She said: “The triangle looks like a head. Below, there’s a line it could be arms. Another triangle forms the legs. A square at the back could be a tail. It looks like a horse.”
She was encouraged to continue. She said: “I want it to be a horse in the desert.”
She chose textured cardboard and colored papers to represent sand dunes, using her prior training to match colors by smell and texture.
She placed a horse figure in the center and glued it down. Then she added stones and dried plants, repositioned the thread, pinned the horse’s tail (Figure 24).
When comparing to the pre-test (Figure 22), she said: “I couldn’t tell what I was drawing before. Now I can feel and recognize elements like a horse, and I can build harmony and rhythm in the background.” Her artistic experience had clearly developed.</td></tr>
<tr><td>Fifth work
Student Hadeel</td><td> 
Fig . 27. The sixth dimensional work</td><td> 
Fig . 26. Stages of Formulating the Sixth Initial Work Concept</td><td> 
Fig . 25. The fifth preparatory work for the student Hadeel</td></tr>
<tr><td></td><td colspan="3">**Activities and arts | Raw materials (sixth work) post-test output:**
After writing her name and connecting the pins with thread (Figure 26), she was asked to describe the shape. After repositioning the board, she said: “It looks like a truck a transport truck driving down a road.”
She used materials identified by touch: rectangular plastic toy remnants for the truck body, with beveled shapes for the front, and circular solids for the wheels.She mounted a row of rectangles on top to represent cargo, and added threads and pins to create a road beneath the truck.
She used the weaving technique with warp and weft to build visual texture.
When asked to describe the work and its aesthetic values, she said she was proud to have created a foreground-background composition, using texture contrast and well-distributed materials. She compared it to her pre-test version (Figure 25), noting it had lacked meaning and structure. Her post-test (Figure 27) showed clear improvement in both technical and aesthetic experience.</td></tr>
</table>

Summary Observations:
Across all six cases, the teaching unit’s effectiveness was reflected in:
• Increased tactile confidence

- Greater expressive clarity
- Correct application of artistic techniques
- Ability to make aesthetic judgments and talk about form, balance, unity, and material

All post-test works demonstrate a measurable improvement in the artistic and aesthetic experiences of the visually impaired students through the applied assemblage art techniques.

7. Presentation and Discussion of the Study Hypotheses

7.1. Results of the first hypothesis:

Hypothesis:

"There is a statistically significant positive correlation between studying the methods and techniques of material processing in assemblage art and the development of artistic and aesthetic expertise among visually impaired female students."

Table 5. Correlation between the scores of the Technical Experience Scale and the Aesthetic Experience Scale

Variable	n = 7	Correlation coefficient	Significance level
Aesthetic Experiences		0.685	0.01
Technical Expertise			

7.1.1 Discussion of the First Hypothesis Results

The results of the first hypothesis reveal a significant positive correlation between familiarization with and training in methods and techniques for processing materials in the fields of art in general, and assembly art in particular, and the development of artistic and aesthetic expertise. The results of this hypothesis are partially consistent with the studies of Hashem [62], Jabr [39], and Tobshi et al. [63], which addressed artistic expertise, as well as the studies of Muhammad and Imran [12], and Marjan [64], which addressed aesthetic expertise and its relationship to the level of artistic expertise and the development of artistic taste. Artistic expertise is linked to the values of formation as a goal or purpose. Artistic expertise is also achieved through the learner's practice of the various art forms prescribed in the curricula, which equips them with the technical and performance skills that enable them to control the use of environmental materials and the methods of shaping them. Aesthetic experiences, such as reading paintings, are linked to an understanding of the materials that constitute the elements of the artwork, and that aesthetic experience involves an aesthetic preference for the structural relationships within the artwork [65]. It is also essential that each experience be a means of reorganizing the next experience and of feeling the aesthetic meanings that deserve appreciation as an idea and its expressive significance [24]. Aesthetically valuable objects and real-life phenomena are reflected in aesthetic acceptance, which can be represented through touch or hearing. Accordingly, aesthetic value is embodied in reality through art, which gives the subject a specific sensory form. Translating it into reality enables others to perceive it and sense its beauty [66]. There is no doubt that the artistic experience presented to the blind study sample, which included the following dimensions: the experience of distinguishing materials and employing them appropriately, the experience of perceiving relationships, and the experience of employing techniques and shaping materials, was positively correlated with the dimensions of aesthetic experience and its related dimensions: aesthetic awareness and perception, aesthetic values, and aesthetic experience after training in producing artwork using and applying the methods and techniques of the art of assembly. This is confirmed by the results of the second and third hypotheses.

7.2 Results of the second hypothesis:

Hypothesis:

"There is a statistically significant difference at the (0.05) level between the mean ranks of the students' scores in the Technical Experience Scale before and after applying the assemblage art methods and techniques, in favor of the post-test."

Due to the small sample size, the Wilcoxon signed-rank test was used.

Table 6. Wilcoxon test results for the significance of differences between the mean ranks of the study sample's scores in the pre- and post-measurements of the technical experience scale.

Technical Expertise:						
Dimension	Direction	Number of Students	Average Rank	Total Ranks	Z-Value	Significance Value
Aesthetic awareness	Positive ranks	6	3.5	21	-2.226	0.026
	Negative ranks	0	0	0		
	Ties	0				
	Total	6				
Perception of aesthetic values	Positive ranks	5	3	15	-2.203	0.043
	Negative ranks	0	0	0		
	Ties	0				
	Total	5				
Achieving aesthetic values	Positive ranks	5	3	15	-2.203	0.043
	Negative ranks	0	0	0		
	Ties	0				
	Total	5				

It is clear from Table 6 that:

- There is a statistically significant difference at a significance level of (0.05) between the average ranks of the students' scores in the pre-test and post-test in the dimension (experience in distinguishing materials). The table shows that the average ranks in the pre-test is (zero), while the average ranks in the post-test was (3.5) and the total ranks were (21). The value of Z was (-2.226), which is a statistically significant value at a significance level of (0.05), as the significance value was (0.026), which is a value smaller than (0.05).
- There is a statistically significant difference at a significance level of (0.05) between the average ranks of the students' scores in the pre-test and post-test in the dimension (experience of perceiving relationships). The table shows that the average ranks in the pre-test is (zero), while the average ranks in the post-test was (3) and the total ranks amounted to (15). The value of Z also reached (-2.203), which is a statistically significant value at a significance level of (0.05), as the significance value reached (0.043), which is a value smaller than (0.05).
- There is a statistically significant difference at a significance level of (0.05) between the average ranks of the students' scores in the pre- and post-tests in the dimension (experience in employing technologies and forming materials). The table shows that the average ranks in the pre-application is (zero), while the average ranks in the post-application was (3) and the total ranks amounted to (15). The value of Z also amounted to (-2.203), which is a statistically significant value at a significance level of (0.05), as the significance value amounted to (0.043), which is a value smaller than (0.05).

7.2.1 Discussion of the Second Hypothesis Results:

The results of the second hypothesis can be interpreted in light of theoretical frameworks, previous studies, and the results of the post-test as follows:

Distinguishing between various textured materials, rough and smooth, describing their aesthetic characteristics, and identifying the surfaces of various flat and curved materials, provides students with diverse artistic experiences regarding the uses of these materials. Furthermore, students can classify materials by type and size, visualize the final form of an artwork composed of various materials, and understand the relationship between the parts of an artwork and the missing parts of any artwork by describing prominent artistic models. Students can also understand the relationships between the components of an artwork by describing the skill used in the artwork

(composition, assembly, synthesis, weaving, twisting, etc.), as shown in the post-test results in Table (6). Through dealing with unconventional and prominent textured materials, students gain artistic experience with continuous training, processing materials, and employing them in a beautiful artwork. By gaining artistic experience, the student can write a poem about her hunger and learn to deal with things in multiple ways and methods, and a poem about her feelings, as it helps the student to transform her feelings towards desire through the experimental activity of new materials [67]. Thus, the sessions (the teaching unit) lead to members of the main parliaments for multiple and varied experiences.

7.3 Results of the third hypothesis:

Hypothesis:

"There is a statistically significant difference at the (0.05) level between the mean ranks of students' scores in the Aesthetic Experience Scale before and after the application of assemblage art methods and techniques, in favor of the post-test."

Table 7. Wilcoxon test results for the significance of differences between the mean ranks of the study sample's scores in the pre- and post-tests of the aesthetic experience scale.

Aesthetic experience:						
Dimension	Direction	Number of Students	Average Rank	Total Ranks	Z-Value	Significance Value
Aesthetic awareness	Positive ranks	6	3.5	21	-2.214	0.027
	Negative ranks	0	0	0		
	Ties	0				
	Total	6				
Perception of aesthetic values	Positive ranks	6	3.5	21	-2.207	0.027
	Negative ranks	0	0	0		
	Ties	0				
	Total	6				
Achieving aesthetic values	Positive ranks	5	3.0	15	-2.041	0.041
	Negative ranks	0	0	0		
	Ties	0				
	Total	5				

It is clear from Table 7 that:

There is a statistically significant difference at a significance level of (0.05) between the average ranks of the students' scores in the pre-test and post-test in the dimension of (aesthetic awareness). The table shows that the average ranks in the pre-test is (zero), while the average ranks in the post-test was (3.5) and the total ranks were (21). The value of Z was (-2.214), which is a statistically significant value at a significance level of (0.05), as the significance value was (0.027), which is a value smaller than (0.05). There is a statistically significant difference at a significance level of (0.05) between the average ranks of the students' scores in the pre-test and post-test in the dimension (experience of perceiving aesthetic values). The table shows that the average ranks in the pre-test is (zero), while the average ranks in the post-test was (3.5) and the total ranks were (21). The value of Z was (-2.207), which is a statistically significant value at a significance level of (0.05), as the significance value was (0.027), which is a value smaller than (0.05). There is a statistically significant difference at a significance level of (0.05)

between the average ranks of the students' scores in the pre-test and post-test in the dimension (experience in achieving aesthetic values). The table shows that the average ranks in the pre-test is (zero), while the average ranks in the post-test was (3) and the total ranks were (15). The value of Z was (-2.041), which is a statistically significant value at a significance level of (0.05), as the significance value was (0.041), which is a value smaller than (0.05).

7.3.1 Discussion of the results of the third hypothesis

The results of the third hypothesis indicate the impact of the teaching unit on providing students with aesthetic experience in its three dimensions (aesthetic awareness, experience of perceiving aesthetic values, experience of achieving aesthetic values), given that the teaching unit contains activities that develop aesthetic experience. The results of this hypothesis are consistent with the studies of Muhammad and [12], and Marjan [64],

The most important values that may result from the interaction between artist and recipient through artworks based on the art of assembly are the interactive values resulting from the artistic experiences of experimenting with unconventional materials, and the innovative values represented by (creativity and originality), in addition to the societal values, the values of recycling, environmental conservation, and a sense of the economic value of the artwork, as well as the objective values such as the ease and clarity of the meaning of the composition in the artwork of assembly [45]. The teaching unit presented to the study sample played a role in enhancing aesthetic experience by achieving dimensions (perspective) through arranging the different sizes of materials in the artwork, as in work No. (4) by student Lamia. The experience of enjoying the artwork after experiencing it through touch, and perceiving the beauty of the artwork's design, including balance, coherence, unity, and rhythm, was also enhanced through touching the pieces of fabric. This perception of their quality and beauty, as well as the decorations they contain related to heritage, was also realized through touching the pieces of fabric, as in work No. (1) by student Hanan. This prompted the students to consider designing artworks characterized by harmony and consistency between the artwork's parts simply by touching them. The activities of the teaching unit also played an important role in developing artistic and aesthetic experience, favoring the use of three-dimensional materials with a focus on the beauty of their components (through touch), and acquiring the skill of recycling waste into beautiful artworks created from simple materials. This, coupled with a sense of pride and satisfaction after completing the artwork, affirms the identity of the visually impaired students.

8.Study results

- The application of material processing methods using assemblage art helped visually impaired students gain diverse artistic experiences across various performance styles.
- Assemblage art enabled students to achieve creative visions in both form and surface structure, as evidenced by the post-test.
- Using industrial and neglected materials from the environment (e.g. wood, plastic, cloth, ash residues) enhanced students' awareness of environmental sustainability.
- Employing three-dimensional materials allowed for multiple compositional levels, fostering deeper artistic understanding of form and texture.
- Expressing themselves using unconventional and environmentally friendly materials of varied textures and sizes helped develop their ability to achieve perspective and spatial depth.
- The variety of textures and sizes in non-traditional materials developed aesthetic experience in achieving balance, unity, and rhythm.
- This diversity also helped students achieve aesthetic contrast on the artwork's surface.
- Using scrap and consumer waste refined technical expertise in material properties and expression through innovative forms.
- The plastic techniques and treatments used in the unit included:

Assembly, synthesis, pasting, twisting, bending, rotation, wrapping, braiding, wrinkling, and weaving as shown in the post-test results.

- The unit's strategies and exercises proved highly effective in developing artistic and aesthetic expertise among visually impaired female students.

9. Study recommendations

- Integrate art education practices to develop creativity and enhance thinking among visually impaired students.
- Conduct studies focused on improving technical expression through assemblage art for students with visual impairments.
- Hold practical workshops to train teachers and specialists on assemblage techniques and teaching strategies.
- Offer training programs for parents to empower their children and foster self-expression through artistic practices in daily life.
- Encourage researchers to design training programs based on assemblage art that are applicable to other educational areas.
- Organize artistic activities targeting both parents and teachers, enhancing their ability to support the creation of meaningful artwork for visually impaired students.
- Strengthen the independence and empowerment of visually impaired female students by providing continuous opportunities for creative self-expression.
- Include assemblage art as a formal topic in the middle school art education curriculum for visually impaired female students.

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