

## Implementation of Green Therapy in Inclusive Education at Nature Schools

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### ABSTRACT

This study explores the implementation of green therapy in the context of inclusive education and its impact on the well-being of students with special needs. The research method used is a qualitative case study in a nature school that implements green therapy as part of their inclusive approach. This research was conducted at Darul Istiqamah Maros Natural School. The study population consisted of students with special needs, teachers, school staff, and parents. The sampling technique used was purposive sampling, where three students with special needs were selected to participate in this study. Data collection was conducted through in-depth interviews with students, teachers, and parents; participant observation during Green Therapy activities; and document analysis related to the inclusion program and Green Therapy activities. The findings indicated that Green therapy in inclusive education positively impacts the physical, emotional, and social well-being of students with special needs, as shown by the study results. Students experienced improved social relationships with classmates, increased self-confidence, and engagement in learning. Green Therapy provided a meaningful and enjoyable learning experience for students, reflected in higher motivation and increased participation in school activities. Challenges in implementing green therapy include managing the natural environment, training teaching staff, and adapting activities to individual student needs. Collaboration between schools, parents, and experts is crucial for successful green therapy implementation in inclusive education. This study makes a valuable contribution to the development of more effective and sustainable inclusive education practices.

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## 1. INTRODUCTION

Inclusive education aims to ensure that all students can learn together in the same educational environment, regardless of their abilities or special needs (Astell-Burt et al., 2014; Florian, 2019). Diversity in the classroom can enrich the teaching and learning process. Every child has the right to a quality education. This is the main principle of inclusive education (Berman et al., 2008; Woodcock et al., 2022). Inclusive education

emphasizes modifying teaching methods, materials, and environments to meet the needs of all students, including those with disabilities and from diverse backgrounds (Wells & Evans, 2003; Evans et al., 2021). Inclusive education seeks to develop a culture of acceptance and appreciation of differences, ensuring accessibility and active participation for all students in school (Taylor et al., 2002; Hajisoteriou & Sorkos, 2023). Inclusive education aims to create a fairer education system despite challenges like limited resources, unsupportive attitudes, and curriculum adjustments. It does this by providing support for students and teachers. Inclusive education prioritizes fairness and equality through funding, assistive devices, and trained teaching staff, being both an educational policy and a philosophy. Schools lack resources and respect for human diversity (Roe et al., 2013).

Green therapy is a new therapeutic method needed to address the complex problems facing inclusive education (Danylchuk et al., 2025). Limited resources and facilities are a challenge for supporting students with special needs, including accessible classrooms and assistive technology. Attitudes and perceptions toward inclusive education from the community, teachers, and parents are often unsupportive. There is a debate about whether students with special needs should be placed in special schools or integrated into the general learning environment. The development of inclusive education can be hindered by this view, creating an unsupportive environment for students (Ohly et al., 2016; Kamran et al., 2023).

A major challenge is curriculum adjustment. Significant adjustments are often required because standard curricula do not meet each student's individual needs (Kuo, 2015). Developing flexible and inclusive teaching methods requires considerable time and effort for teachers. Korpela & Ylén (2007) highlight that additional workload is frequently not accompanied by sufficient training and support. The implementation of new therapeutic methods such as green therapy becomes relevant in addressing these challenges. Nature-based therapy, also known as green therapy, supports students' physical and mental well-being in an innovative way. Students can experience improved concentration, reduced stress, and enhanced emotional well-being through outdoor activities like gardening, walking in parks, or playing in green spaces (Gunn et al., 2022). For students with special needs, this therapy can help develop social and motor skills. Green therapy supports physical educational inclusion, creates a holistic learning environment, and promotes the well-being of all students (Šouláková et al., 2019). To ensure every child benefits fully, collaboration between schools, parents, and the community is necessary when implementing this therapy.

Nature-based therapy, also known as green therapy, is a significant innovation in inclusive education due to its various advantages. Green therapy improves students' physical and mental well-being. Outdoor activities like gardening, walking in parks, or playing in green spaces can improve concentration, reduce stress, and elevate mood (McCormick, 2017). Students with special needs often face additional challenges that impact their emotional and cognitive well-being, making these benefits particularly important for them. Green therapy can help develop social and motor skills, according to Mayer et al. (2009). Improving coordination, balance, and physical strength in

students can be achieved by interacting with the natural environment and engaging in outdoor physical activities. Group activities can strengthen communication and social cooperation skills. Additionally, they are often conducted in groups.

Green therapy creates a more inclusive and holistic learning environment. Green therapy offers a different approach from traditional teaching methods by bringing natural elements into education (Jeronen et al., 2016). It increases students' interest and engagement in the learning process by allowing them to learn in a more dynamic and interactive context. Green therapy is a flexible tool that can support various types of learning and special needs, as it can be adapted to individual needs (Louv, 2008).

Green therapy in inclusive education stands out for its integrative and multisensory approach. Green therapy combines the physical, emotional, and social aspects of learning in one integrated activity, unlike traditional therapy methods that may focus on a single aspect (Kwame Ameade et al., 2021). Creating deep and meaningful learning experiences for students is as important as providing physical therapy. Overcoming limitations in inclusive education, like limited resources and the need for curriculum adjustments, can be achieved with this approach.

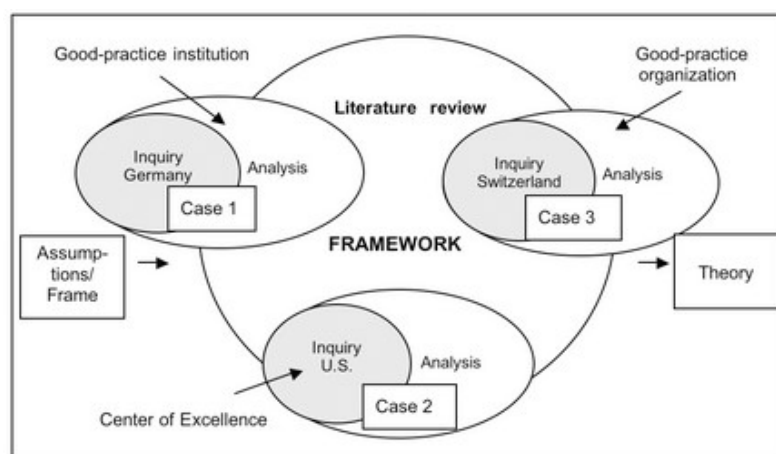
Green therapy supports students' holistic well-being and creates a more inclusive educational environment by utilizing the natural environment as a learning space (He et al., 2024). Collaboration between schools, parents, and the community is necessary to ensure every child can benefit from green therapy. Green therapy enriches inclusive education methods and introduces new ways of viewing and responding to students' needs in a broader and more diverse context (Blumer et al., 2012; Holt et al., 2019).

Darul Istiqamah Nature School is currently an alternative solution for providing stimulation to children with special needs through natural media (green therapy), as demonstrated by Hayati et al. (2023). Many researchers have applied green therapy in the past. Green therapy activities, such as farming, outbound activities, learning with nature, and educational demonstrations, can be implemented by schools to create a conducive learning environment (Risty et al., 2022). Managing inclusive classes through the learning with nature method fosters a greater love for nature, develops character, and instills a sense of responsibility (Haryanti, 2020). Green therapy is implemented in inclusive education to help children with special needs train their auditory senses through outdoor activities. Outdoor activities are optimized by not wearing footwear. This study explores the implementation of green therapy in the context of inclusive education and its impact on the well-being of students with special needs.

## 2. METHOD

A qualitative research method with a case study design is appropriate to examine the implementation of green therapy in inclusive education at nature schools. Researchers can explore how green therapy is implemented and its impact on students in the nature school environment. Nature schools implementing green therapy include all students, teachers, and staff in the study population. Three students with special needs will be selected for the research sample using a purposive sampling technique, where

individuals with relevant and in-depth information are chosen by the researchers. This research was conducted at Darul Istiqamah Maros Natural School.



**Figure 1.** Qualitative One with A Case Study Design

In-depth interviews, participant observation, and document analysis are used for data collection. Interviews will be conducted with students, teachers, and parents to gather their views on the benefits and challenges of green therapy. Questions in the interview will explore individual experiences, perceptions, and observed changes after green therapy implementation. Researchers will understand students' interactions and behaviors during green therapy sessions through participant observation, focusing on engagement, emotional responses, and the development of social and motor skills. To ensure data consistency and accuracy, these observations will be conducted repeatedly.

Document analysis involves examining school records, lesson plans, and student progress reports. The documents will provide information about the green therapy program's structure, learning objectives, and student achievement. Researchers will analyze collected data using thematic analysis techniques to identify, analyze, and report patterns or themes found in the data. The process involves open coding the data, identifying key themes, and explaining the findings through a narrative.

The research will provide a comprehensive overview of the effectiveness of green therapy in supporting inclusive education in nature schools. Identify factors contributing to its success or barriers to implementation. The research findings will offer valuable insights on how to maximize the benefits of green therapy for students with special needs, benefiting education practitioners, policymakers, and school communities.

### 3. RESULTS AND DISCUSSION

#### Results

The implementation of green therapy in inclusive education begins with the intervention design stage. The Green Therapy Intervention Design for Students with Special Needs is described as follows:

- a. Objective: Improve the physical, emotional, and social well-being of students with special needs through nature-based activities.

b. Population: Three students with special needs at a nature school selected through purposive sampling.

c. Intervention Duration: 12 weeks

1) Activity Frequency: Three times a week, each session lasting 90 minutes.

Activity Plan

Weeks 1-2: Orientation and Initial Assessment

2) Activities:

Introduction to green therapy and its benefits.

Initial assessment of students' physical and emotional well-being through observation and brief interviews with students and parents.

Objectives: Introduce students to the concept of green therapy. Identify students' initial needs and conditions.

Weeks 3-4: Basic Outdoor Activities

3) Activities:

A leisurely walk in the school garden.

Introduction to various types of plants and animals around the school.

Objectives: To increase student engagement with the natural environment. To increase student knowledge about nature.

Weeks 5-6: Gardening Activities

4) Activities:

Planting and caring for plants in the school garden.

Learning about the life cycle of plants.

Objectives: Developing fine and gross motor skills. Teaching responsibility and perseverance.

Weeks 7-8: Nature Art Activities

5) Activities:

Making crafts from natural materials (e.g., leaves, flowers, stones).

Painting a nature scene.

Objectives: Stimulating creativity and self-expression. Enhancing sensory awareness and appreciation for nature.

Weeks 9-10: Group Activities

6) Activities:

Group games outdoors (e.g., nature riddles, treasure hunts).

Group project: creating a miniature garden.

Objectives: Enhancing social and cooperation skills. Strengthening relationships among students.

Weeks 11-12: Evaluation and Reflection

7) Activities:

Final evaluation of students' physical and emotional well-being.

Reflection session with students, teachers, and parents.

Exhibition of work and presentation of experiences during green therapy.

Objectives: To assess the development and impact of green therapy. To provide an opportunity for students to share their experiences and achievements.

After the green therapy design was carried out, the therapy implementation stage was continued for 3 students, which is described as follows in Table 1-6.

**Table 1.** Therapy Implementation Stage was Continued for Students (Week 1-2)

Activities/C hildren	Child's Response		
	Cindy	Keisya	Alfa
<i>Week 1-2: Orientation and Initial Assessment</i>			
Introduction to green therapy and its benefits	Cindy showed great enthusiasm when introduced to the concept of green therapy. During the session, Cindy seemed very interested in the explanation of the various activities that would be carried out outdoors. She frequently asked questions about the plants and animals they would encounter, demonstrating her keen curiosity. In a brief interview, Cindy stated that she truly enjoys outdoor activities and is looking forward to starting to garden. Initial observations indicated that Cindy has a high energy level and a tendency to be active, making green therapy a perfect fit for her.	Keisya, who is typically shy and tends to be quiet in class, appeared somewhat anxious at the beginning of the orientation session. However, after a while, she began to feel more comfortable when the researcher explained that the green therapy activities would be conducted in stages and in small groups. When asked what she wanted to try most, Keisya quietly stated that she wanted to try planting flowers. Keisya's response indicated hope that through this activity, she could learn something new in a calmer and more supportive environment. Initial observations noted that although Keisya appeared anxious at first, she began to show interest after learning that she would not have to do it alone.	Alfa, who has difficulty concentrating and hyperactivity, showed mixed responses. He was excited to hear that there would be lots of physical activities like walking in the park and playing outside. However, when he was explained about gardening activities that require patience and regular maintenance, Alfa appeared somewhat impatient and interrupted the explanation several times. In a brief interview, Alfa said that he was mostly looking forward to playing and running in the park. Initial observations indicated that Alfa has a strong interest in activities that involve physical movement and exploration but may require a special approach for activities that require more focus and persistence.
Conclusion	The responses of the three special needs students during the orientation and initial assessment revealed varying levels of interest and readiness for green therapy. Ardi was enthusiastic and curious, Budi displayed anxiety that gradually subsided with the right approach, and Cindy was enthusiastic about physical activities but required special guidance for activities requiring concentration. These initial findings will serve as important guidelines for designing and adapting green therapy activities to optimally meet the needs and interests of each student.		
Initial assessment of students' physical and emotional well-being through brief observations with students and parents	Cindy is a hyperactive student who often has difficulty concentrating. Brief observations revealed that Cindy has a very high energy level and tends to have difficulty sitting still for long periods of time. Cindy's parents revealed that she often feels frustrated in a traditional classroom environment due to the monotony of activities.	Keisya is a quiet student who often feels anxious in social situations. Brief observations indicate that Keisya tends to avoid direct interaction with her peers and prefers to observe from a distance. Keisya's parents stated that she often feels	Alfa is a student with attention deficit hyperactivity disorder. Brief observations revealed that Alfa often struggled to stay focused on a single task for extended periods and was easily distracted by stimuli around him. Alfa's

Activities/C hildren	Child's Response		
	Cindy	Keisya	Alfa
	Emotionally, Cindy often experiences rapid mood swings and feels anxious if there is not enough physical activity to channel her energy. Cindy's parents also mentioned that she really enjoys outdoor activities, especially those involving play and exploration, which help calm her and improve her mood.	anxious and has difficulty actively participating in group activities at school. However, Keisya shows an interest in activities that are structured and have a clear routine. Emotionally, Keisya feels more comfortable and confident when in a supportive and less crowded environment. Her parents also mentioned that Keisya shows a strong interest in plants and animals, which could be a good starting point for green therapy.	parents noted that he struggled with self-regulation and frequently exhibited impulsive behavior. Emotionally, Alfa easily became frustrated when faced with challenging tasks or tasks that required repeated effort. However, Alfa's parents noted that he greatly enjoyed physical activity and outdoor play, which helped reduce his anxiety and improve his mood.
Conclusion	An initial assessment of the physical and emotional well-being of the three students with special needs (ABK) revealed diverse needs and characteristics. Cindy needed activities that could channel her energy positively and calm her volatile moods. Keisya needed a supportive and structured environment to reduce her anxiety and increase her confidence in social interactions. Meanwhile, Alfa needed physically engaging activities to help him manage impulsive behavior and improve concentration. These findings will provide an important basis for designing green therapy interventions tailored to each student's individual needs, maximizing their physical and emotional well-being.		
Short interviews with students and parents	Interview with Cindy: Question: What do you like most about doing outdoors? Cindy's response: "I like playing and running in the park. I also like climbing trees and watching small animals." Question: How do you feel when you're playing outside? Cindy's response: "I feel happy and free. I don't get bored like I do in the classroom."	Interview with Keisya: Question: What do you like about plants or animals? Keisya's response: "I like taking care of plants and watching them grow. I also like feeding the birds in the garden." Question: How do you feel when you're in a garden or park? Keisya's response: "I feel calm and happy. I love hearing the birds and seeing the flowers bloom."	Interview with Alfa: Question: What do you like most about playing outside? Alfa's response: "I like running, climbing, and playing ball. I also like looking for bugs and seeing them up close." Question: How do you feel when you play outside? Alfa's response: "I feel very happy and energetic. I don't get bored and can move around as much as I want."
	Interview with Cindy's Parents: Question: What do you notice about Cindy's behavior when she's active outdoors? Parent's response: "Cindy is calmer and less agitated after playing outside. She also sleeps better and is happier after an active day in nature." Question: Are there any significant changes in Cindy's behavior or mood after outdoor activities? Parent's response: "Yes, we notice Cindy is able to concentrate better on her tasks after playing outside. She also seems more relaxed and has fewer emotional outbursts."	Interview with Keisya's Parents: Question: How does Keisya interact with the natural environment? Parent's response: "Keisya really loves plants and animals. She can spend hours taking care of plants or observing insects without getting bored."	Interview with Alfa's Parents: Question: How does Alfa respond to outdoor physical activity? Parent's response: "Alfa is very active and always finds ways to move. He seems more focused and less hyperactive after playing outside."

Activities/Children	Child's Response		
	Cindy	Keisya	Alfa
		Question: Do outdoor activities have a positive impact on Keisya's anxiety? Parent's response: "We notice that Keisya becomes calmer and less anxious after spending time in the garden. It helps her feel more secure and confident."	Question: Do you notice any changes in Alfa's behavior or concentration after playing outside? Parent's response: "Yes, after playing outside, Alfa is calmer and can sit longer to do his schoolwork. He also seems happier and less irritable."
Conclusion	Responses from brief interviews with students and parents indicated that green therapy has significant potential in supporting the physical and emotional well-being of students with special needs. Cindy felt freer and happier when playing outside, which helped reduce her anxiety. Keisya felt calm and happy in natural environments, which reduced her anxiety and boosted her self-confidence. Alfa demonstrated improved focus and decreased hyperactivity after engaging in outdoor physical activity. These positive experiences demonstrate that green therapy can be an effective intervention to improve the overall well-being of students with special needs in an inclusive education context.		

**Table 2.** Therapy Implementation for Students (Week 3-4)

Activities/Children	Child's Response		
	Cindy	Keisya	Cindy
	Week 3-4: Basic Outdoor Activities		
		Question: What do you like about walking in the park? Keisya's response: "I love hearing the birds and looking at the beautiful plants. It feels peaceful here."	Question: What do you like most about walking in the park? Alfa's response: "I like running and climbing trees. It's so much fun to play outside!"
A leisurely walk in the school garden.	Question: What do you like most about walking in the park? Cindy's response: "I love seeing butterflies and flowers. It feels good to run around and play outside." Question: How do you feel after a walk in the park? Cindy's response: "I feel happy and energized. I don't get bored and want to keep playing in the park."	Question: How do you feel after walking in the park? Keisya's response: "I feel relaxed and at peace. It feels like there's nothing to worry about." Keisya appeared calm and enjoyed the atmosphere during her leisurely stroll through the park. She walked slowly, stopping frequently to observe the plants and listen to the birdsong. Keisya appeared completely focused and enjoyed every moment in the park.	Question: How do you feel after a walk in the park? Alfa's response: "I feel really happy and not bored. I want to play again tomorrow!" Alfa displayed high energy during his leisurely walks in the park. He frequently ran around the park, climbed small trees, and chased insects. Alfa seemed very energetic and enjoyed the freedom of being outdoors.
Observation results	During a leisurely stroll through the school garden, Cindy appeared very enthusiastic. She walked briskly, often jogging to chase butterflies and other insects. Cindy displayed a keen sense of curiosity, frequently stopping to observe the flowers and insects around the garden.		



Activities/Children	Child's Response		
	Cindy	Keisya	Cindy
Conclusion	The responses of the three children with special needs during the introduction to various types of plants and animals around the school showed that they benefited significantly from this intervention. Cindy showed enthusiasm and interest in caring for plants, Keisya felt calm and happy with activities related to plants and animals, while Alfa demonstrated a high level of curiosity and enthusiasm for exploring nature. This activity not only increased their knowledge of the natural environment but also positively impacted on their emotional well-being and engagement in learning activities.		
Introduction to various types of plants and animals around the school.	During the introduction session to the various types of plants and animals around the school, Cindy was very enthusiastic and engaged. She frequently asked questions about the plants and animals on display. Cindy seemed particularly interested in insects and flowering plants, frequently stopping to observe them closely.	Keisya seemed very interested in the plant and animal introduction session. She walked slowly, carefully observing each plant and animal, and listened attentively to the explanations. Keisya showed particular interest in fragrant plants and small, slow-moving animals.	Alfa showed great enthusiasm during the plant and animal introduction sessions. He often ran among the plants, holding and curiously observing small animals. Alfa seemed particularly interested in fast-moving animals like lizards and flying insects.
Conclusion	The responses of the three children with special needs during the introduction to various types of plants and animals around the school showed that they benefited significantly from this intervention. Cindy showed enthusiasm and interest in caring for plants, Keisya felt calm and happy with activities related to plants and animals, while Alfa demonstrated a high level of curiosity and enthusiasm for exploring nature. This activity not only increased their knowledge of the natural environment but also positively impacted on their emotional well-being and engagement in learning activities.		

**Table 3.** Therapy Implementation Stage for Students (Week 5-6)

Activities / Children	Child's Response		
	Cindy	Keisya	Alpha
Week 5-6: Activities Gardening			
Planting and caring for plants in the garden school.	During the activity planting and caring for plants in the garden school, Cindy shows high enthusiasm. He with like heart dig land, plant seeds, and watering plants. Cindy seemed very interested in the whole gardening process, often asking about methods to nurse plants with Good.	Keisya shows calm and careful attitude during planting activity and caring for plants. He was very careful in planting seeds and ensuring every plant got enough water. Keisya looks like she is enjoying the treatment process of the plants, especially the moment when she sees the plants starting to grow.	Alpha shows high energy and enthusiasm during activity planting and caring for plants. He is very enthusiastic in digging land and planting seeds, as well as always enthusiastic about water plants. Alfa seemed to really enjoy it. physical activity involved in gardening.
Conclusion	Response from third students with special needs during activity planting and caring for plants in the garden school shows that they got significant benefits from this intervention. Cindy shows enthusiasm and pride, Keisya feels serenity and pleasure, while Alfa shows enthusiasm and positive energy. This activity not only increases their knowledge about plant care methods but also provides a positive impact on their emotional welfare and their involvement in physical activity. Planting and caring for plants help build a sense of responsibility, strengthen attachment with nature, and improve their self-confidence in an inclusive educational environment.		

Activities / Children	Child's Response		
	Cindy	Keisya	Alpha
Study about cycle life plant	Cindy was very enthusiastic during the Study session about the life cycle of plants. He quickly catches the draft from seed until the plant matures and flowers. Cindy often submits questions about the process of photosynthesis and its root role in absorbing nutrition.	Keisya shows deep interest in the details of every stage of a plant's life cycle. He listened carefully and took notes important bullet points about plant development from seed to maturity. Keisya seems very interested in the process of flower and fruit formation.	Alpha shows enthusiasm and high desire for tofu during Study about plant life cycle. He is very interested in stage growth beginning and how plants change from seeds to shoots. Alpha also often observes plants in the garden school to see their growth stage.
Conclusion	Response from third students with special needs during activity Study about plant life cycle shows that they got a good understanding about the growth process of plants. Cindy shows enthusiasm and attention to the details of the process of photosynthesis and maintenance of plants. Keisya shows deep interest in stage flowering and fruit formation. Alpha shows Spirit in observing change from seed to shoots.  This activity gives positive impact not only in terms of academic understanding about plant biology but also increases their interest in the environment and involvement in gardening activities. Understanding about plant life cycles helps students develop a sense of responsibility and connection with nature, as well as strengthen their abilities in observation and scientific analysis.		

**Table 4.** Therapy Implementation Stage for Students (Week 7-8)

Activities / Children	Child's Response		
	Cindy	Keisya	Alpha
Week 7-8: Nature Art Activities			
Make craft from material nature (for example, leaves, flowers, stones).	During the activity making craft from natural materials, Cindy shows extraordinary creativity and perseverance as usual. He chose leaves, flowers, and stones carefully and organized it into a beautiful collage. Cindy seemed to really enjoy the process of selecting and arranging the natural ingredients.	Keisya shows great interest in the activity of making crafts from natural materials. He chose ingredients carefully and made symmetrical patterns using flowers and leaves. Keisya looks very thorough and enjoys every step in the process of manufacturing crafts.	Alpha shows high spirits during activity make craft from natural materials. He selected stones and leaves with enthusiasm, composing them into forms animals and other creative objects. Alfa seemed to really enjoy it. physical activity involved in gathering natural ingredients.
Conclusion	Response from third students with special needs during activity make craft from natural materials show that they get significant benefits from this intervention. Cindy shows extraordinary creativity and perseverance as usual, enjoying the process of selecting and arranging natural ingredients. Keisya shows great interest and thoroughness in making symmetrical patterns, feeling serenity and happiness. Alpha shows high spirits and creativity in compile forms animals, feel fun and positive energy.  This Activity Not only increases their fine motor skills and creativity but also provides a positive impact on their emotional welfare. Making crafts from natural materials helps students develop a sense of appreciation for nature, improve focus and calmness, as well as strengthen their attachment to the environment around them.		

Activities / Children	Child's Response		
	Cindy	Keisya	Alpha
Paint view natural	During the activity painting view nature, Cindy shows extraordinary artistic and creative talent as usual. He chose for paint view mountain with sunset. Cindy looked very focused and enjoyed the process of painting, choosing bright colors to describe natural beauty.	Keisya shows calm and attention to the details during painting view nature. He chose for paint view forest with the flowing river. Keisya seemed to be enjoying it very much drawing trees and water, using calm and natural colors.	Alpha shows high energy and enthusiasm during activity paint view nature. He chose for paint view beach with waves and birds flying. Alfa uses bright and dynamic colors, showing enthusiasm in every paintbrush sweep.
Conclusion	<p>Response from third students with special needs during activity paint view natural show that they got significant benefits from this intervention. Cindy shows artistic and creative talent, feeling happiness and peaceful moment painting. Keisya shows attention to detail and tranquility, finding peace in activity art. Alpha shows enthusiasm and high energy, enjoy the creative process and results full ending color.</p> <p>This Activity Not only increases their fine motor skills and artistic expression but also provides a positive impact on their emotional welfare. Painting a natural view helps students develop abilities To observe and appreciate natural beauty, improve focus and calm, as well as express their feelings through art.</p>		

**Table 5.** Therapy Implementation Stage for Students (Week 9-10)

Activities / Children	Child's Response		
	Cindy	Keisya	Alpha
Week 9-10: Activities Group			
Game groups in nature open (for example, games) riddles about natur , competition look for treasure treasure nature)	During the game riddles about nature and competition to look for treasure treasure nature, Cindy shows enthusiasm and active involvement. He Work The same with his friends for answer question about nature and search clues are hidden around the game area.	Keisya show thoroughness and good cooperation during game group. He really enjoyed it challenging look for treasure treasure nature and answer riddles about various element nature. Keisya Work with calm and effective in his team.	Alpha shows high energy and enthusiasm during game groups in nature open. He was very excited in answering riddles about nature and discovering treasure treasure together his team. Alfa often run and search instruction with full Spirit.
Conclusion	<p>Response from third students with special needs during activity game groups in nature open show that they get significant benefits from intervention this. Cindy shows enthusiasm and involvement active, enjoying Work The same team and challenges. Keisya shows accuracy and good cooperation, finding peace and joy in activity team. Alfa shows energy and enthusiasm high, enjoy challenges and fun in Work The same with friends.</p> <p>Activity This Not only increases social skills and cooperation but also provide positive impact to welfare emotional they. Game groups in nature open help students develop ability For Work same, increase trust yourself, and add knowledge about nature. Activities This also strengthens the sense of responsibility to answer environment and enrich experience Study they are outside class.</p>		
Project group makes miniature park.	During the activity project group make miniature garden, Cindy shows creativity and	Keisya shows serenity and dedication during project group. He is very thorough in choose	Alpha shows high spirits and energy during project group. He was very excited in

Activities / Children	Child's Response		
	Cindy	Keisya	Alpha
	leadership. He with enthusiastic planning the layout garden, choose plants, and directing his friends in planting. Cindy is also very meticulous in ensure every plant gets appropriate place.	plants and ensure they planted with That's right. Keisya also helped his friends with patience, explaining method nurse plant with Good.	dig land and planting plants. Alfa also enjoys decorating mini garden with stones and accessories natural other.
Conclusion	<p>Response from third students with special needs during activity project group make miniature park shows that they get significant benefits from intervention this. Cindy shows creativity and leadership, feel satisfied and proud with results Work team. Keisya show serenity and dedication, finding peace and happiness in nurse plants. Alpha shows enthusiasm and energy high, enjoy activity physical and decorative in project the.</p> <p>Activity This Not only increase fine motor skills and creativity they but also provide impact positive to welfare emotional and social they. Project group make mini gardens help students develop ability For Work same, increase sense of responsibility answer, and strengthen attachment they with nature. Activities this also enriches experience Study they with give context practical and relevant for learning environment.</p>		

**Table 6.** Therapy Implementation Stage for Students (Week 11-12)

Activities / Children	Child's Response		
	Cindy	Keisya	Alpha
	Week 11-12: Evaluation and Reflection		
Evaluation end welfare physical and emotional student.	During the evaluation end welfare physically and emotionally, Cindy shows change significant positively. He looks more believe yourself and be happy. Cindy also became more active in activity physical and shows more interest big in outdoor activities room.	Keisya show significant improvement in physical and emotional welfare. He looks calmer and more capable of managing stress better. Keisya is also better often involved in interaction social positive with his friends.	Alpha shows significant developments in welfare physical and emotional. He looks more energetic and enthusiastic in every activity. Alpha is also Better in Work equal and share with his friends.
Conclusion	<p>Response from third students with special needs during evaluation end welfare physical and emotional show that they get significant benefits from various school activities nature. Cindy shows improvement in trust self and involvement active in activity physical and social. Keisya show greater calm and ability Good in managing stress, as well as interaction positive social. Alpha shows high energy and enthusiasm, with improvement in cooperation and creativity.</p> <p>Activities at school natural give significant impact positive to welfare physical and emotional they, help student develop skills social, improving happiness, and strengthen attachment they with nature. Evaluation end This show that green therapy intervention through activity outside room can give benefit holistic for students with special needs, improve quality life they in a way overall.</p>		
Session reflection together students, teachers, and parents	During the session reflection together, Cindy shows ability For express his feelings with better. He with full	Keisya looks calm and reflective during session reflection. He listen with carefully when other people are talking	Alpha shows high enthusiasm during session reflection. He speak with Spirit about his experiences and

Activities / Children	Child's Response		
	Cindy	Keisya	Alpha
	Spirit share experience and learning gained during school activities nature. Cindy looks comfortable and confident self-speaking in front of teachers, friends, and parents .	and with calm share her experience. Keisya convey his views with clear and indicative appreciation to activities that have been followed.	looked very happy share with other people. Alfa also shows ability For recognize and express feeling as well as his thoughts.
Parent	Cindy 's parents observe that after follow activity this, Cindy becomes more open and easy to communicate. He is also more active involved in activities at home and show improvement in trust self.	Parent Keisya take notes that after activity, Keisya become more patient and thorough in do tasks at home. He is also more often invite family For do activity outside room together.	Alfa 's parents reported that after activity this, Alfa becomes more active and creative in playing outside house. He also showed more interest big in Study about nature and environment.
Teacher	Teacher Cindy took notes that Cindy showed improvement in skills social and trust herself. Cindy became braver For participate in discussion class and interact with his friends.	Teacher Keisya take notes that Keisya show improvement in patience and attention to detail. He is also more often involved in activity group and show ability more leadership Good.	Teacher Alfa took notes that Alfa shows improvement in Spirit learning and interaction social. He more often participates in activity class and show more attitude positive to Study.
Conclusion	<p>Response from third students with special needs during session reflection together show that they get significant benefits from school activities nature. Cindy shows improvement in trust self and abilities communication. Keisya show patience and skill Work the same better. Alpha shows high enthusiasm and ability For express his feelings with clear.</p> <p>Session reflection together help students, teachers, and parents understand impact positive from activity school natural to welfare physical and emotional students. Activities This No only increase skills social and knowledge about natural but also provide encouragement significant to trust self and happiness students. Through session reflection all of these party can see development and change positive that has been happened and get outlook about importance sustainability of similar programs in the future.</p>		
Session reflection together students, teachers, and parents	During the session reflection together, Cindy shows ability For express his feelings with better. He with full Spirit share experience and learning gained during school activities nature. Cindy looks comfortable and confident, self-speaking in front of teachers, friends, and parents.	Keisya looks calm and reflective during session reflection. He listen with carefully when other people are talking and with calm shares her experience. Keisya conveys his views with clear and indicative appreciation to activities that have been followed.	Alpha shows high enthusiasm during session reflection. He spoke with Spirit about his experiences and looked very happy to share with other people. Alfa also shows ability For recognize and express feeling as well as his thoughts.
Parent	Cindy 's parents observe that after follow activity this, Cindy becomes more open and easier to communicate. He is also more active involved in	Parent Keisya take notes that after activity, Keisya become more patient and thorough in do tasks at home. He is also more often invite	Alfa 's parents reported that after activity this, Alfa becomes more active and creative in playing outside house. He also showed more

Activities / Children	Child's Response		
	Cindy	Keisya	Alfa
Teacher	activities at home and show improvement in trust self.	family For do activity outside room together.	interest big in Study about nature and environment.
	Teacher Cindy took notes that Cindy showed improvement in social skills and trust herself. Cindy became braver For participate in discussion class and interact with his friends.	Teacher Keisya takes notes that Keisya show improvement in patience and attention to detail. He is also more often involved in activity group and show ability more leadership Good.	Teacher Alfa took notes that Alfa shows improvement in Spirit learning and interaction social. He more often participates in activity class and show more attitude positive to Study
	Response from third students with special needs during session reflection together show that they get significant benefits from school activities nature. Cindy shows improvement in trust self and abilities communication. Keisya show patience and skill Work the same better. Alfa shows high enthusiasm and ability For express his feelings with clear.		
	Session reflection together help students, teachers, and parents understand positive impact from activity school natural to welfare physical and emotional students. Activities This No only increase skills social and knowledge about natural but also provide encouragement significant to trust self and happiness students. Through session reflection all these party can see development and change positive that has been happened, and get outlook about importance sustainability of similar programs in the future.		
Exhibition results work and presentation experience during green therapy	Exhibition of Works: Cindy with proud show mini park that has he help create, explain with details every existing element and how plants the has grown with Good.	Exhibition of Works: Keisya display with proud results his work, shows mini park that has He help create with neat. Although rather embarrassed, he explains with clear every detail about the park.	Exhibition of Works: Alfa with proud show off mini park that has He helped create, while explaining every detail with enthusiasm. He also showed several craft hands that have He for from material nature.
	Presentation Experience: In her presentation, Cindy with full Spirit shares his experience during green therapy. He emphasized importance interaction with nature and how matter That has increase trust herself. Cindy also shared story about how it's fun Work The same with his friends and take care of plant.	Presentation Experience: In her presentation, Keisya with calm shares his experience during green therapy. He explained How activity the has help him become more patient and respectful nature. Keisya also expressed her gratitude on chance for participating in activity the.	Presentation Experience: In his presentation, Alfa specifically enthusiastic shares his experience during green therapy. He emphasized how fun and useful Work with nature and his friends. Alfa also shared story about How activity the has help him feel more believe self and involvement in the learning process.
	Cindy's parents are very proud of the achievements and progress shown by Cindy during exhibition. They take notes that Cindy has become more	Parent Keisya express pride they on ability Keisya For display results his work and speaking in front of public. They observe that Keisya has show	Alfa's parents are very proud of the presentation and results work demonstrated by Alfa. They observe that Alfa has display ability strong and demonstrated

Activities / Children	Child's Response		
	Cindy	Keisya	Alpha
	open and easier communicate after follow activity this , and they like see improvement in trust himself.	improvement in ability communication and respect chance For learning in nature open.	communication high enthusiasm during exhibition. Alfa's parents are happy see improvement in trust Alfa's self and involvement in activity school nature.
Conclusion	Response from Cindy, Keisha, and Alfa during exhibition results work and presentation experience if green therapy shows various level engagement and communication skills. They are all proud to show results, work them and share valuable experience during activity said. Parents from third students also observe a positive change in trust self and involvement student in activity school nature. This confirms that green therapy does not only give benefit to the development of physical and emotional students but also improves social and presentation skills they.		

Inclusive education benefits from the effective implementation of green therapy, which involves a series of steps to ensure a positive impact on participants. Select an appropriate environment with supportive facilities like a park or large open area, various plants, and hands-on activity facilities. When planning a green therapy program, consider participants' needs, abilities, and preferences. Activities such as gardening, planting, nature exploration, or nature-based art projects are developed based on clear learning objectives. Involving parents and teachers in the planning process is important to align the program with participants' needs and expectations.

The next step after designing a green therapy program is its systematic and structured implementation. Organizing necessary resources and logistics includes providing guidance and training materials for educational staff and facilitators. During implementation, ensure outdoor activities are conducted safely by supervising and monitoring participants for their safety. Facilitating positive interactions between participants, addressing any special needs, and providing necessary support throughout the activity is important.

Evaluation and reflection are crucial after completing the green therapy activity. Evaluation is conducted to assess the achievement of learning objectives, assess the activity's impact on participants, and identify areas for improvement or adjustment for the future. Joint reflection among participants, teachers, staff, and parents can provide valuable insights into participants' experiences and allow for sharing discoveries and lessons learned during the activity. Successful strategies, challenges, and recommendations for the future development of the Green Therapy program can be identified through this reflection.

## Discussion

To ensure the success and positive impact of green therapy in inclusive education, a holistic, collaborative, and sustainable approach is required (Rijal, 2025). Green Therapy programs can effectively promote the physical, emotional, and social well-being of participants, as well as strengthen their engagement in learning and personal

development by considering individual needs, involving stakeholders, and conducting thorough evaluation (Jung et al., 2015).

Green Therapy in inclusive education at nature schools is based on psychological and educational theories. Individuals interact with their environment at several levels according to Bronfenbrenner's ecological systems theory: the micro (family and school), mezzo (interpersonal relationships), and macro (society and culture) environments (Nieuwenhuis et al., 2014; Guy-Evans, 2020; El Zaatari & Maalouf, 2022). Nature schools implement green therapy to use the natural environment as a learning tool that can enhance students' physical, emotional, and social development. Students strengthen their social skills through collaboration in activities such as planting, caring for plants, and maintaining a clean environment by interacting directly with nature.

Supporting individuals' basic needs for autonomy, competence, and relatedness is crucial for achieving intrinsic motivation and psychological well-being, as emphasized by self-determination theory (Pretty et al., 2007; Evans et al., 2024; Grenier et al., 2024). Students in Green Therapy enhance their social connectedness through collaboration on group projects, strengthen their sense of competence by caring for plants, and are encouraged to take initiative in nature activities. Green Therapy implementation can increase students' motivation to learn by meeting basic needs and providing a psychologically satisfying experience.

Albert Bandura's social learning theory brings to light the importance of observation, imitation, and reinforcement in learning (Rumjaun & Narod, 2025). In Green Therapy, students can observe and imitate positive behaviors from peers and teachers, like caring for nature and cooperating in group projects. Motivation and learning can be boosted by recognition for their work or plant care. Furthermore, positive reinforcement is key (Bratman et al., 2019). Constructivism theory emphasizes student-centered learning where knowledge is constructed through direct experience and reflection in the context of inclusion (Krahenbuhl, 2016). Green Therapy implementation provides practical experiences in nature for students to actively construct their understanding of nature. Reflection sessions with students, teachers, and parents strengthen understanding of the interconnectedness between the natural environment, individual well-being, and inclusive learning.

The implementation of green therapy in nature schools supports students' physical, emotional, social, and cognitive development by providing meaningful learning experiences through integrating psychological and educational theories. Green Therapy can effectively support inclusive education by focusing on student needs and promoting their overall well-being through a holistic and integrated approach.

#### 4. CONCLUSION

Green Therapy is a significant step in supporting inclusive education by using the natural environment to improve participants' physical, emotional, and social well-being. The Green Therapy program is effective in achieving learning objectives by ensuring it is relevant to participants' needs through a holistic, collaborative, and structured implementation process. Participants have the opportunity to expand their knowledge of the



environment, strengthen social skills, and develop a sense of engagement in learning through direct interaction with nature. Evaluation and reflection help refine and develop the Green Therapy program, leading to a broader impact in supporting inclusive education.

Continuing to develop collaboration between schools, parents, and the local community is important to increase the effectiveness of the Green Therapy program. To ensure appropriate accommodations, involve all stakeholders in program planning and implementation. Expanding our network of collaborations with environmental organizations and relevant experts can provide additional resources and support for the Green Therapy program. Furthermore, continuing research and evaluation of the Green Therapy program will help us understand its impact more deeply and identify effective strategies for improving the quality of inclusive education in the future. We can ensure that Green Therapy remains a valuable tool in supporting the well-being and learning of participants in inclusive education contexts with these steps.

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