



Forest Fables:

A Nature-Based Programme for Children with Developmental Needs

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Overview

- Forest Fables, a nature-based intervention for children with developmental needs under six years old, was created to increase opportunities for them to practice functional and daily living skills in natural environments.
- The programme was piloted over 2 cycles, each with 4 weekly park-based sessions, involving a total of 14 children. Surveys and interviews were conducted with teachers to assess well-being outcomes for the children.
- The results were promising, with skill-building and an increase in positive behaviours being observed.

Context



Although children in Singapore grow up in a highly urbanised environment, they have easy access to community parks and gardens.



Children with developmental needs often have fewer opportunities to engage with nature compared to their typically developing peers (Dunst, 2020).



To address this, a cross-sector collaboration between Thye Hua Kwan Early Intervention for Children (THK EIC) Services and Muein—an arts and nature-based collective with expertise in Forest School training—was established to increase opportunities for nature engagement for these children

Principles

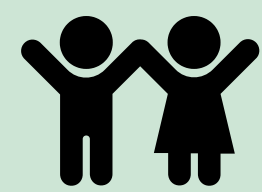


1 Nature-based learning (NBL) is an educational approach that engages children with the natural environment. It holds great promise for promoting engagement, participation, and developmental growth (Bradley & Male, 2017; Friedman et al., 2022).

2 Time spent in nature can enhance children's critical and creative thinking, attention, prosocial behaviour and language development (Chawla, 2015; Kuo & Jordan, 2019).



Implementation



Participants
14 children



Location
Community park situated near THK EIPIIC centre



Duration
• 4 weekly sessions
• 90 mins per session



Activities
• Story-based, with folklore elements
• Includes: Puppetry, art and craft, role-play, free play



Data Collection

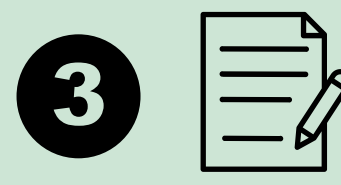
A mixed methods approach was used to collect data in the form of:



1 **Child Well-Being Survey (Pre/Post)**
• 7 statements



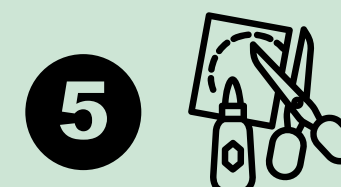
2 **Interviews**
• Conducted with children's teachers



3 **Researchers' observation field notes**



4 **Photographs & video recordings**

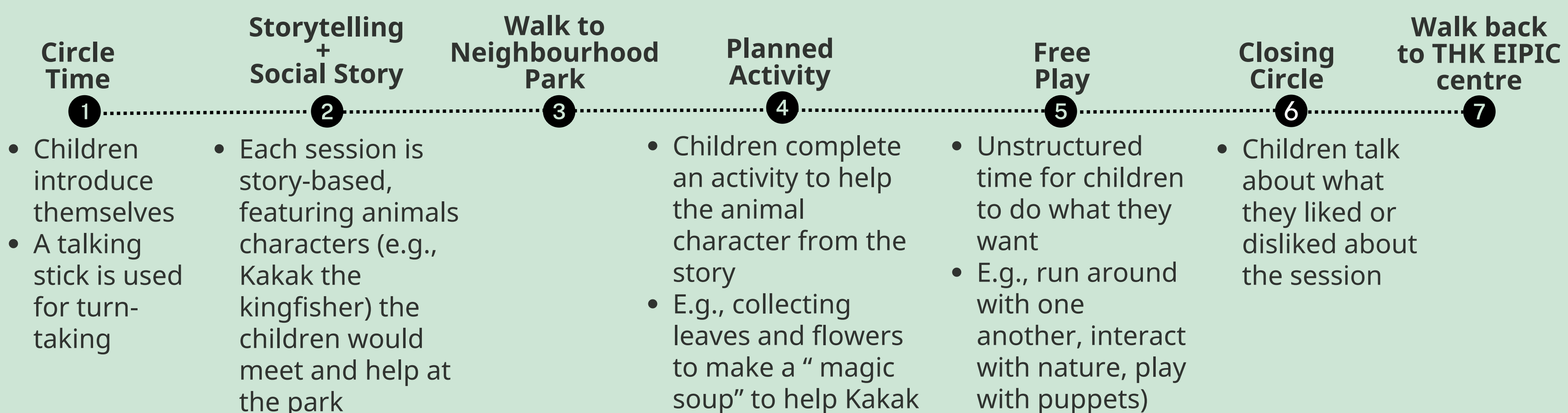


5 **Children's art and craft work**



Programme Flow

A session consists of:

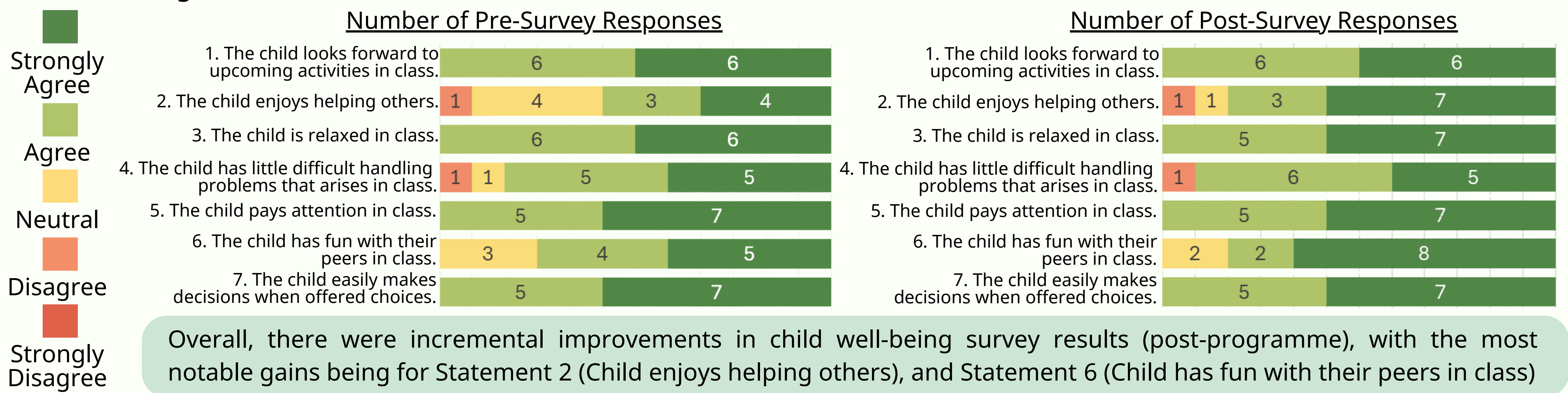


For more details on the activities used in the Forest Fables sessions, please scan this QR code:



Results

Child Well-being Outcomes - Class 1 and Class 2



Results

Case Studies

Based on data collected from observational and interview data



Child A



Child B

Background	Child A	Child B
Background	<ul style="list-style-type: none"> 5 years old Active child 	<ul style="list-style-type: none"> 4 years old Had a leg brace
During Forest Fables	<ul style="list-style-type: none"> Enjoyed free play a lot Happy to interact with classmates 	<ul style="list-style-type: none"> Liked picking up leaves Liked running around at the park
After Forest Fables	<ul style="list-style-type: none"> Initiated more helpful behaviour 	<ul style="list-style-type: none"> More confident climbing stairs

Data Analysis



- Based on data collected
 - Children made gains in:
 - Skill building (e.g., mobility)
 - Based on observational and interview data
 - Positive behaviours (e.g., helping their peers)
 - Based on pre-post survey and interview data
 - Children displayed joy from engaging with nature
 - Based on observational and interview data
- The post-survey responses indicated modest gains in children's well-being outcomes. The gains were slight possibly because:
 - Pre-survey responses were already mostly positive
 - Short programme duration (4 90-min weekly sessions for both cycles)

Challenges and Solutions

Challenges	Solutions
Safety concerns	<ul style="list-style-type: none"> Maintaining a 1:1 child-adult ratio Reinforcing safety rules and precautions using social stories
Collecting data from children with special needs	<ul style="list-style-type: none"> Using alternative methods like field observations, taking photos, recording videos and interviewing teachers

Learning Points and Reflections

Takeaways for educators

Learning points that emerged from the partnership between THK EIC staff and Muein facilitators:

- | | | |
|--|--|--|
| <p>THK EIC staff</p> <ul style="list-style-type: none"> Gained ideas for incorporating nature into their lesson plans Gained a better understanding of free play for children's development | | <p>Muein facilitators</p> <ul style="list-style-type: none"> Built understanding of children and their needs via early classroom observations Learnt about support strategies for children's needs, such as: <ul style="list-style-type: none"> Communication boards, visuals, social stories |
|--|--|--|



Future directions

- Changes to programme for future cycles:
 - Longer duration (over 6-8 weeks)
 - More focused structure
- Inclusive nature camps for both children with developmental needs and typically developing children
- Developing an NBL resource kit for educators

References

Bradley, K., & Male, D. (2017). 'Forest School is muddy and I like it': Perspectives of young children with autism spectrum disorders, their parents and educational professionals. *Educational and Child Psychology, 34*(2), 80-93. <https://doi.org/10.53841/bpsecp.2017.34.2.80>

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Friedman, S., Gibson, J., Jones, C., & Hughes, C. (2022). 'A new adventure': A case study of autistic children at Forest School. *Journal of Adventure Education and Outdoor Learning, 24*(2), 202-218. <https://doi.org/10.1080/14729679.2022.2115522>

Kuo, M., & Jordan, C. (2019). Editorial: The Natural World as a resource for learning and development: From schoolyards to wilderness. *Frontiers in Psychology, 10*. <https://doi.org/10.3389/fpsyg.2019.01763>

Acknowledgements

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If you have any questions or would like to find out more, please scan this QR code:



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