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Early Childhood Outdoor Learning Assessment Instrument

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Abstrak

Penelitian ini berfokus pada pengembangan instrumen penilaian pembelajaran outdoor learning di RA Hafniratunnisa Namlea, yang bertujuan untuk menilai perkembangan anak usia dini dalam konteks pembelajaran di luar ruangan. Penelitian ini menggunakan model pengembangan berdasarkan pendekatan 4D (Define, Design, Develop, Disseminate) dan melibatkan ahli penilaian untuk validasi instrumen. Fokus utama dari penelitian ini adalah pada pengembangan instrumen yang komprehensif dan fungsional, bukan pada metode atau strategi pembelajaran outdoor learning itu sendiri. Instrumen penilaian yang dihasilkan dirancang untuk menilai perkembangan kognitif, kreativitas, dan aspek perkembangan anak lainnya melalui kegiatan belajar sambil bermain di alam. Penelitian ini juga mempertimbangkan batasan masalah untuk menjaga fokus dan mendapatkan hasil yang lebih terarah. Instrumen yang dikembangkan diharuskan mudah dipahami oleh anak usia dini dan relevan dengan hasil belajar kreativitas. Hasil akhir dari penelitian ini adalah instrumen penilaian yang valid dan dapat digunakan oleh pendidik untuk menilai perkembangan anak dalam konteks pembelajaran di luar ruangan. Instrumen tersebut meliputi petunjuk penggunaan, sub instrumen untuk setiap aspek perkembangan, lembar observasi dan catatan lapangan, serta lembar wawancara. Validasi instrumen dilakukan melalui analisis ahli dan uji coba terbatas pada beberapa lembaga pendidikan anak usia dini di wilayah tertentu. Kesimpulan yang dapat diambil dari penelitian ini adalah instrumen penilaian yang dikembangkan telah divalidasi oleh para ahli dan layak digunakan untuk menilai perkembangan anak usia 5-6 tahun dalam konteks pembelajaran di luar kelas. Instrumen ini disyaratkan harus sesuai dengan tujuan pembelajaran dan menggunakan bahasa yang mudah dimengerti oleh anak.

Abstract

This study focuses on the development of outdoor learning assessment instruments at RA Hafniratunnisa Namlea, which aims to assess early childhood development in the context of outdoor learning. This study uses a development model based on the approach (Define, Design, Develop, Disseminate) and involves assessment experts for instrument validation. The main focus of this research is on the development of comprehensive and functional instruments, not on the outdoor learning method or strategy itself. The resulting assessment instrument is designed to assess cognitive

development, creativity, and other aspects of children's development through learning activities while playing in nature. This study also considers the limitations of the problem to maintain focus and get more targeted results. The instruments developed are required to be easy to understand by early childhood and relevant to creativity learning outcomes. The final result of this study is a valid assessment instrument that can be used by educators to assess children's development in the context of outdoor learning. These instruments include instructions for use, sub-instruments for each aspect of development, observation sheets and field notes, and interview sheets. Instrument validation is carried out through expert analysis and limited trials to several early childhood education institutions in certain regions. The conclusions drawn from this study show that the assessment instruments developed have been validated by experts and are suitable to be used to assess the development of children aged 5-6 years in the context of outdoor learning. This instrument is required to be in accordance with the learning objectives and use language that is easy for children to understand.

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INTRODUCTION

Outdoor learning has become an increasingly important approach in the field of education, especially for early childhood. Fundamentally, this type of learning utilizes the natural environment as a learning resource, providing more contextual and meaningful learning experiences for children. This aligns with the constructivist views of Jean Piaget (2002), who stated that direct experiences with the surrounding environment can aid in the cognitive development of children (Cherry Kendra, 2019).

Outdoor learning as a learning environment has the potential to empower children to let their imagination and bodies explore freely, transforming their surroundings to create and innovate. Additionally, a vast array of natural materials can provide significant opportunities for children's creative play (Kiewra and Veselack, 2016).

An ideal condition in early childhood education is to provide a holistic and multidimensional learning program, where children can express themselves and develop in various aspects, including cognitive, affective, and psychomotor.

Outdoor learning is an effective method to support these goals. According to Dillon et al. (2017), outdoor learning significantly enhances children's cognitive and motor development and provides better continuity in learning (Dillon et al., 2017).

However, the current factual condition shows that the assessment of the effectiveness of outdoor learning is still not optimal, especially for early childhood. Several studies, such as those conducted by Puou Syaeful Rahmat (2019), emphasize that assessments in the education field often focus more on cognitive aspects, while other aspects such as social and emotional tend to be overlooked. In fact, for early childhood, comprehensive assessment is essential to support their overall development (Rahmat, 2019).

A literature review shows that assessment in outdoor learning has not received adequate attention. As stated by Brookhart and McMillan (2019), classroom assessments often tend to be summative and are less adaptive to outdoor activities (Brookhart & McMillan, 2019). This poses a challenge in developing assessment instruments that can evaluate children's performance and development holistically in the context of outdoor learning.

Furthermore, the lack of assessment standards that can measure all aspects of outdoor learning is a major obstacle. Therefore, developing assessment instruments that align with the characteristics of outdoor learning has become an urgent need. This is also highlighted by Stiggins (2017), who stated that good assessment should reflect the entire learning process, not just the final outcome (R. Stiggins, 2017).

Referring to previous research, there is evidence supporting the benefits of outdoor learning for early childhood. For example, a study conducted by Husamah (2013) showed that children involved in outdoor learning tend to have better spatial and kinesthetic intelligence (Husamah, 2013). Another study conducted by Oberle et al. (2021) also confirms that outdoor learning can enhance social and emotional skills in children, helping them interact better with their environment and peers (Oberle et al., 2021).

Given the above situation, developing assessment instruments for outdoor learning in early childhood needs to be taken seriously. The first step that can be taken is to formulate relevant assessment indicators that align with the objectives of outdoor learning. According to Waite et al. (2020), one of the important

indicators in assessing outdoor learning is children's ability to adapt to the environment, creativity, and active participation in group activities (Waite, S., Bølling, M., & Bentsen, 2020). These indicators need to be translated into an assessment format that is easy for teachers or educators to understand and implement.

For example, the development of assessment instruments that include direct observation by teachers, daily reports, and performance assessments can be an effective solution to measure the success of outdoor learning. This is demonstrated by the research conducted by Hartmeyer et al. (2016), who developed an activity-based assessment model in outdoor learning and successfully gained a more holistic understanding of students' development. (Hartmeyer et al., 2016).

In this context, it is important to involve experts and education practitioners in the process of developing assessment instruments. Collaboration between academics, educators, and other relevant parties will ensure that the instruments developed are not only theoretically relevant but also practical and easy to apply in the field. According to Gelfer et al. (2015), active participation of teachers in the development of assessment instruments can enhance the effectiveness and accuracy of the assessments (Gelfer et al., 2015).

Even though outdoor learning is increasingly recognized as a beneficial approach in early childhood education, its implementation is still limited and faces several challenges. One of the main challenges is the lack of valid and reliable assessment instruments to evaluate children's development during outdoor learning. (Iskania Nurlita, 2016). Assessment is an integral part of the learning process, including in the context of outdoor learning. Assessment helps teachers monitor children's development, identify their strengths and weaknesses, and design appropriate interventions or learning strategies (Soeprijanto et al., 2020; Yudha, 2020).

Developing valid and reliable assessment instruments for early childhood outdoor learning is crucial to ensure that children's development is accurately evaluated in the context of outdoor learning. A good assessment instrument should be able to measure various aspects of children's development during outdoor

learning, such as cognitive, physical, social-emotional, language, and relevant life skills (Pusmendik, 2021).

Therefore, this research aims to develop assessment instruments that can be used in early childhood outdoor learning. It is hoped that these instruments will provide a solution to the current limitations in assessment by combining traditional assessment approaches and technological innovations. Consequently, it is expected that outdoor learning will provide optimal benefits for the development of early childhood, as anticipated in the existing literature.

METHODOLOGY

This research is a type of research and development (R&D). The educational research and development model used is the Four-D Model. The Four-D Research and Development Model was developed by Sivasailam Thiagarajan, Dorothy S. Semmel, and Melvyn I. Semmel (1974) with research stages including definition, design, development, and dissemination (Thiagarajan, 1974). The procedure developed by the researchers does not extend to dissemination; this research is only conducted to test the feasibility of the developed Outdoor Learning method for use in the learning process. Referring to the research and development procedure known as the Four-D Model, developed by Sivasailam Thiagarajan in 1974, the researchers simplified and limited the ten stages to seven stages. The Outdoor Learning method developed for students in Group B at RA Hafniratunnisa, Namlea District, Buru Regency, Maluku Province, follows the Four-D procedure, which has been limited as follows:

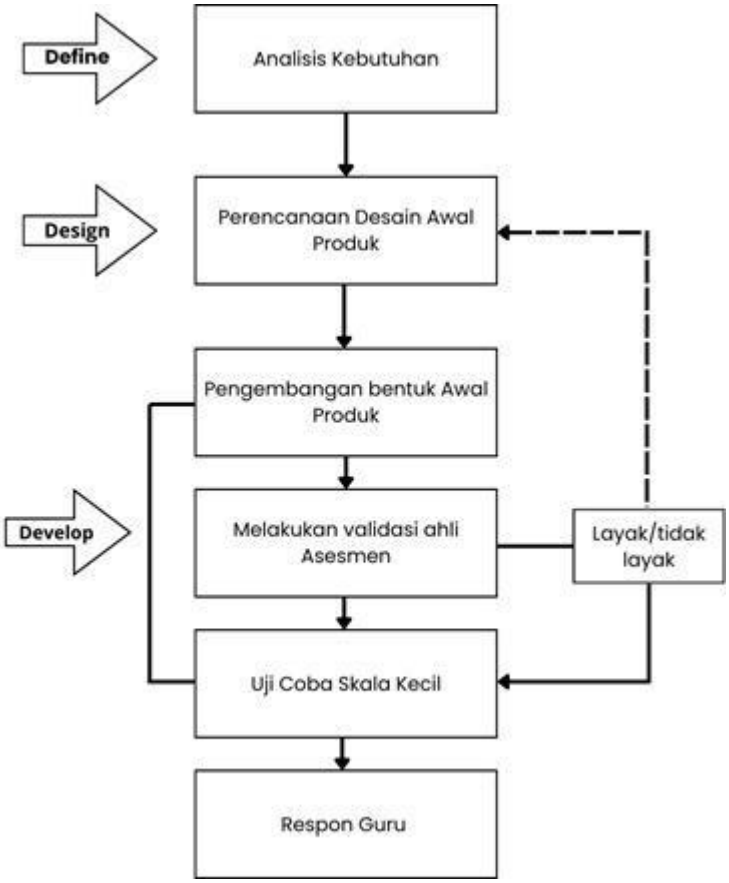

Figure 1. Modified Four-D Development Stages

The research subjects must be adjusted to the research needs (Yudha, 2020). The subjects in the development of assessment instruments for outdoor learning methods for early childhood are 4 teachers from RA Hafniratunnisa Namlea. The objects in this research are 10 children aged 5-6 years from Group B RA Hafniratunnisa Namlea.

The data collection technique used to evaluate the assessment instrument product for outdoor learning is validated by experts, using a Likert scale ranging from 1 to 5. Meanwhile, the assessment rubric and Likert scale are used to evaluate various aspects of outdoor learning, with a range of values from 1 to 4. The range of values from 1 to 4 is described as follows: not balanced (1), starting to be balanced (2), balanced according to expectations (3), and very balanced (4). If the percentage obtained exceeds 75%, the outdoor learning method is considered very suitable/very good for use with children. However, if the percentage obtained is

below 75%, the balanced outdoor learning method can be assessed as not suitable/less good for use in learning activities (Maslich, 2016).

RESULTS AND DISCUSSION

The development stage of assessment instruments for outdoor learning, based on expert validation and limited trial results, is very important. Since these assessment instruments for outdoor learning are used to evaluate the learning outcomes of early childhood education as part of their learning achievement process, the assessment coverage includes cognitive, physical, socio-emotional, language, environmental understanding, creativity, and independence (process) aspects during the learning activities**.**

Results

a. Define

During the needs analysis stage, information was obtained from interviews with four teachers at RA Hafniratunnisa Namlea regarding the challenges in developing assessment instruments for outdoor learning. Various obstacles in the implementation and assessment of outdoor learning were identified. The teachers highlighted that the main challenge lies in creating comprehensive and engaging outdoor learning materials. They desire materials that include nature exploration, physical activities, group cooperation, environmental observation, and artistic activities, but often struggle to integrate all these aspects effectively into a single learning program. This is exacerbated by limited resources and time available to design and implement outdoor activities that align with the curriculum and children's needs.

Additionally, the objectives for using assessment instruments are often unclear and vary among different teachers. Some teachers find it difficult to establish specific and measurable goals for each outdoor learning activity, which impacts the effectiveness of the assessment instruments used. Different assessment methods, such as direct observation, worksheets, anecdotal records, and art assessments, are often not applied consistently, resulting in assessment outcomes that are not always accurate and reliable.

The use of assessment instruments also faces technical and practical challenges. Teachers report that observation sheets, motor balance checklists, reflection notes, and journals are often difficult to complete accurately and promptly during outdoor activities. They also face challenges in managing and analyzing data obtained from various instruments, given the diversity of activities. This results in less optimal utilization of assessment results for curriculum improvement and balance.

Overall, the challenges in balancing assessment instruments for outdoor learning at RA Hafniratunnisa Namlea include issues in creating comprehensive materials, defining clear assessment objectives, maintaining consistent assessment methods, and using effective and efficient instruments. Therefore, further efforts are needed to overcome these obstacles through professional training and development for teachers, as well as providing adequate resources and support to create better and more integrated outdoor learning programs.

b. Design

The next step is the preparation of the assessment instrument grid. The instrument developed for this research is an assessment instrument for outdoor learning, aiming to evaluate cognitive, physical, social-emotional, language, and environmental understanding aspects, as well as independence during outdoor learning. The preparation of the assessment instrument grid for outdoor learning refers to learning outcomes.

With this approach, educators can effectively observe and evaluate children's progress in a dynamic and enjoyable learning context. The learning outcomes related to these aspects not only include academic balance but also holistic development, including physical, cognitive, social, and emotional balance. Implementing structured assessment ensures that each child benefits maximally from outdoor learning activities, ultimately supporting their optimal growth.

Table 1. Grid of Outdoor Learning Assessment Instrument

No.	Aspect Assessed	Indicators of Learning Outcomes	Types of Instruments	Assessment Scale
1	Gross Motor Skills	Children can walk on a balance beam.	Observation	1-4
2	Fine Motor Skills	Children can collect and categorize leaves.	Observation	1-4
3	Cognitive	Children can identify various types of plants.	Observation	1-4
4	Socio-Emotional	Children can collaborate with peers.	Observation	1-4
5	Creativity	Children can create artworks from natural materials.	Observation	1-4
6	Environmental Understanding	Children can explain the importance of maintaining environmental cleanliness.	Observation	1-4
7	Language	Children can tell stories about their outdoor play experiences.	Observation	1-4
8	Independence	Children can make simple decisions while playing.	Observation	1-4

c. Develop

The main focus during the preparation stage of the initial draft of outdoor learning assessment instruments is to create tools that are comprehensive and functional for tracking various aspects of children's development. This preparation

process includes several important elements, such as expert validation, limited-scale trials, and teacher feedback.

After designing the assessment instruments, the next step is expert validation. At this stage, the designed instruments are consulted with expert lecturers. The generated instruments are evaluated to determine whether their format is appropriate, as well as the relevance of the assessment content and language aspects. Instrument validation is carried out using validation sheets by four experts. The validation results from the four experts, namely two assessment experts and two early childhood education experts, are presented in Table 2.

Tabel 2. Hasil Validasi Instrumen Asesmen Outdoor Learning

Aspects Observed	Statement Items	Validator				Total	Percentage	Categories
		1	2	3	4			
Alignment with Learning Achievements	Instruments in Line with Children's Motor Skill Learning Achievements	4	4	5	4	17	85	Good
	Instruments in Line with Children's Cognitive Learning Achievements	5	3	4	4	16	80	Good
	Instruments in Line with Children's Socio-Emotional Learning Achievements	4	4	5	4	17	85	Good
	Instruments in Line with Children's Creativity Learning Achievements	5	4	5	3	17	85	Good
	Instruments in Line with Children's Environmental Understanding Learning Achievements	3	3	4	4	14	70	**Fairly Good**
	Instruments in Line with	4	4	4	4	16	80	Good

	Children's Environmental Understanding Learning Achievements Instruments in Line with Children's Independence Learning Achievements	4	4	4	3	15	75	Good
Language	Language Used in Instruments is Easy for Educators to Understand	5	5	4	4	18	90	Fairly Good
	Language Used in Instruments Does Not Lead to Ambiguity	4	5	5	4	18	90	Fairly Good
	Language Used in Instruments is Appropriate for the Developmental Stage of Early Childhood	4	5	5	4	18	90	Fairly Good
	Language Used in Instruments is Clear and Concise	5	5	5	5	20	100	Fairly Good

Based on Table 2, the researcher selected 4 experts from different perspectives and with different criteria, according to the researcher's choice, but they were consistent in terms of relevance and relation to the validated variables, both from academic, practitioner, and content perspectives**.**

The evaluation results from the four evaluators on the outdoor learning performance assessment instruments are summarized in Table 2. The assessment aspects include alignment with existing learning achievements and language aspects.

In Table 2, it can be seen that overall the validation results from the four evaluators on the outdoor learning assessment instruments can be considered valid based on expert assessment scores. The highest score of 20 was obtained in the language aspect. The lowest score was found in the indicator related to children's environmental understanding, with a score of 14 or 70%, which falls into the "fairly

good" category. Overall, this instrument has the potential to effectively measure learning achievements outdoors, but with some revisions suggested by expert validators, it can become more effective and representative in assessing children's overall development.

This small group trial was conducted with 10 students from Group B RA Hafniratuinnisa Namlea. The researcher observed and recorded the reactions and responses of the children while using the outdoor learning method. Here is the summary of the small-scale trial results: After a series of outdoor learning activities, a group of children was assessed based on their performance in various aspects that were monitored. This evaluation was designed to measure how well the children understood and applied the knowledge and skills they acquired through outdoor learning.

According to Table 3, the assessment results of the 10 evaluated children are as follows: Two children (20%) fall into the category of *Very Good Balance (BSB)*, showing very good performance with a total score above 8706. This indicates that they have demonstrated a deep understanding and good skills in outdoor learning activities. Two other children (20%) fall into the category of *Balanced as Expected (BSH)*, with scores ranging between 766 and 8705. They also show good performance, although slightly below the BSB group. The majority of children, five (50%), fall into the category of *Starting to Balance (MB)*, with scores between 6614 and 765. This indicates that most children have a fairly good understanding and adequate skills in outdoor learning activities. One child (10%) falls into the category of *Not Yet Balanced (BB)*, with a score below 6613. This indicates that the child needs more assistance and guidance to improve their understanding of the material taught through outdoor learning. With some revisions suggested by expert validators, this instrument can become more effective and representative in assessing the overall development of children.

This categorization provides an overview of the effectiveness of outdoor learning in balancing children's knowledge and skills. Although the majority of children show good understanding, there are still some children who require

additional attention to ensure they also benefit from learning in an open environment.

Table 3. Small Scale Categorization Results of Outdoor Learning Assessment Instruments

Cateigory	Inteirval class	F	%
BSB	> 87.06	2	20
BSH	76.6 - 87.05	2	20
MB	66.14 -76.5	5	50
BB	< 66.13	1	10
Total		10	100

The reason for involving classroom teachers in the outdoor learning assessment instruments is because they have previously used these instruments for classroom assessment. If you have specific data or details you'd like included in Table 4, please provide them, and I'll be happy to help you draft it further:

Table 4. Teacher Response Results

No.	Questions	Teacher				Total	Percentage	Category
		1	2	3	4			
1	If you have more content or specific points you'd like translated or included in this section, please provide them, and I'll be happy to help you draft it further.	4	5	4	5	18	90	Very Good
2	I feel that assessment instruments are effective in evaluating children's understanding of the natural environment.	5	5	5	4	19	95	Very Good
3	I feel that assessment instruments are effective in evaluating children's understanding of the natural environment..	4	4	4	4	16	80	Good
4	Assessment instruments help me observe children's social interactions during group activities in outdoor environments.	5	5	4	4	18	90	Very Good

5	I feel that assessment instruments are quite flexible for measuring children's creativity in creating works from natural materials.	4	5	4	4	17	85	Good
6	I feel that assessment instruments help me evaluate children's ability to maintain environmental cleanliness.	4	5	5	4	18	90	Very Good
7	Assessment instruments help me observe the balance of children's language abilities while they narrate their outdoor experiences.	4	4	3	3	14	70	Fairly Good
8	I feel that assessment instruments provide a clear picture of children's independence in making decisions while playing outdoors.	4	4	4	4	16	80	Good
9	These assessment instruments are relevant and aligned with the goals of outdoor learning.	4	4	4	4	16	80	Good
10	These assessment instruments are easy to apply in everyday outdoor practices.	4	5	5	5	19	95	Very Good

Based on the teachers' responses to the use of the outdoor learning assessment instrument, the descriptive results show that teachers generally give very positive evaluations of the effectiveness of the instrument. The average success percentage for all questions is 87.5%, placing the assessment instrument in the "Very Good" category. Teachers confirmed that this instrument is very helpful in observing and evaluating children's gross motor and fine motor balance, with percentages of 90% and 95% respectively. Additionally, this instrument is considered effective in evaluating children's understanding of the natural environment (80%) and social interactions during group activities outdoors (90%). The instrument's flexibility in capturing children's creativity (85%) and their ability to maintain environmental cleanliness (90%) is also appreciated by teachers. Despite a slightly lower percentage (70%), this instrument is still considered

adequate for observing children's language balance when telling outdoor experiences. Overall, the assessment instrument is approved by teachers due to its relevance to outdoor learning objectives (80%) and its ease of application in daily outdoor practice (95%).

Discussion

The assessment instrument that has been developed has been validated by several validators and tested on a small scale involving a few children. The findings show that this instrument aligns with the desired learning outcomes, including motor skills, cognitive development, socio-emotional aspects, creativity, environmental understanding, and children's independence. This is consistent with previous research findings indicating that outdoor learning can facilitate children's development in various aspects. (Luchs & Fikus, 2018).

Research in the last decade also shows that the use of valid and reliable assessment instruments is crucial for accurately assessing children's development. (Brookhart & McMillan, 2019). These research findings indicate that the instrument used has met these standards, thereby reinforcing the importance of a scientific approach in the development of assessment instruments.

Additionally, results from the small-scale trial show variations in children's development, in line with existing literature that indicates each child has a different pace of development. (Jean Piaget, 2002; Vygotski, 1978). This study provides further insights into how assessment instruments can be used to monitor individual children's development and ensure that each child receives the necessary support for optimal growth.

Teachers' responses to the assessment instrument are also very positive, with the majority of teachers considering the instrument to be very good in helping them observe and evaluate children's development. This reinforces the importance of teacher involvement in the assessment process and how the right instrument can enhance educators' effectiveness in assessing children's development (R. J. Stiggins, 2010; Wiliam, 2008).

Overall, the findings of this research indicate that the outdoor learning assessment instrument developed is valid and can be practically implemented in teaching. These findings contribute significantly to the literature on early childhood

education and demonstrate that the outdoor learning approach can become an integral part of a broader educational strategy to support holistic child development.

In a broader context, this research also provides an understanding of the importance of a holistic approach in early childhood education. This approach not only focuses on cognitive development but also integrates motor, socio-emotional, and creative aspects into the learning process. This aligns with the educational paradigm that emphasizes the importance of experiential learning and interaction with the natural environment (Bell, 2010).

In the global context, outdoor education has become part of a broader nature-based education movement, which aims to promote understanding and appreciation of the natural environment (Lindgren, 2009). This research provides empirical evidence that well-designed assessment instruments can support these goals and ensure that outdoor learning is not only enjoyable but also effective in supporting holistic child development.

CONCLUSION

The assessment instrument for outdoor learning has been successfully developed and adapted for the educational context at RA Hafniratunnisa Namlea. This instrument is designed to assess various aspects of children's development, including motor skills, cognitive development, socio-emotional aspects, creativity, environmental understanding, and independence. The developed assessment instrument has been validated, and the results show that it has good validity. Validators rated this instrument as aligned with learning objectives and relevant to the competencies needed for early childhood. Teachers' responses to the use of the outdoor learning assessment instrument are very positive. The teachers involved in this study consider this instrument to be a very good tool in helping them observe and evaluate children's balance during outdoor learning activities.

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