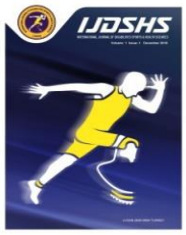

International Journal of
Disabilities Sports and Health Sciences

e-ISSN: 2645-9094

RESEARCH ARTICLE

Fun Game Based Learning Model to Enhance Fundamental Movement Skills (FMS) Children with Mild Intellectual Disability

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Abstract
Children with mild intellectual disabilities struggle with learning, particularly in movement skills. Limited support facilities not tailored to their needs. FMS learning model centered on "Getting to Know Flowering Plants", enhancing movement skills and incorporating cognitive tasks. The research methodology employed in this study follows Borg and Gall's Research and Development approach. Procedure basically consists of two main objectives, namely: (1) developing products and; (2) testing the effectiveness of the product to achieve the goal. Small group trial subjects included 13 students (7 boys, 6 girls 9-10 years old) and 4 teachers, while large group trial subjects involved 26 students (12 boys, 14 girls 9-10 years old) and 4 teachers in the 3 SLB in Palembang city. The CVR analysis results for model indicate a value of 0.6, falling within the range of 1 to -1. This signifies that the content of the FMS getting to know flowering plants is deemed appropriate, relevant, and of high content validity. Upon calculating the correlation coefficient between rater test data for getting to know flowering plants instrument across movement skills, cognitive aspects, fun elements, and attention focus aspects, it is observed that there is a strong positive relationship between the scores assigned by rater 1 and the overall rater scores. Similarly, there is a substantial positive correlation between the scores given by rater 2 and the total rater score. Additionally, the relationship between rater score 3 and the total scores among raters also exhibits a significant positive relationship ($p > 0.05$).

Keywords
Fundemental Movement, Play, Intellectual, Dissablity

INTRODUCTION

Mentally retarded children are still considered as children who are a burden on the family and society, because their limited intelligence abilities are below average, they cannot live like normal children and this will obviously hinder all their daily life activities in socializing, communicating and most importantly is his inability to receive academic lessons like children his age (Kemis dan Rosnawati, 2013). The child in his life needs the help of others in order to be able to develop his or her potential to the maximum and they cannot struggle independently to defend their rights and fulfil their responsibilities and have some limitations (Nurrahima & Ariyanti, 2021), herefore the closest people such as parents, teachers and families have a very important role in finding the right steps to optimize the development and discover the potential that exists in the child (Maulidiyah, 2020), So more independent and not a burden for the family in their daily lives, in principle behind the weaknesses or shortcomings that they have

Received: 21 December 2023 ; **Revised** ; 16 February 2024 ; **Accepted:** 08 March 2024; **Published:** 25 March 2024

How to cite this article: Kesumawati, S.A., Fikri, A., Ardianto, H., Sukmawati, N., Hardiyono, B., Fahritsani, H. and Muslimin, M. (2024). Fun Game Based Learning Model to Enhance Fundamental Movement Skills (FMS) Children with Mild Intellectual Disability. *Int J Disabil Sports Health Sci*;7(2):396-407. https://doi.org/10.33438/ijdshs.1407873

(Lee & Burke, 2020), the child tunagrahita still has a number of abilities or modalities that can be developed to help him live a life like other individuals in general (Prasetyaningrum & Faradila, 2019).

Good mental health is defined as the capacity to overcome barriers and challenges without undue suffering, as well as the absence of mental illness and the ability to participate completely and effectively in one's own communities and activities (Saxena & Setoya, 2014). On the other hand, abnormal moods, emotions, ideas, and cognitions caused by mental illness interfere with normal functioning in the areas of familial, interpersonal, professional, and larger community social connections. This results in aberrant behaviors and functional impairments (Eisfeld, 2014). Deficits in cognition hinder communication and have a detrimental effect on social functioning, friendship formation and maintenance, self-esteem, and loneliness and other emotional issues. Children and adults with intellectual disabilities are overrepresented in mental health comorbidities (Buckley et al., 2020).

Approximately 2% of kids have an intellectual disability (Glasson et al., 2020). Prenatal environmental variables, such as the fact that some individuals have encountered risk factors like premature delivery or inadequate intrauterine growth (Leonard et al., 2008), drug addiction and usage, and viral, metabolic, and genetic illnesses, can also result in intellectual deficiencies. With radioactive X (Fryers, 2019). Intellectual disability has a separate hereditary origin for a minority of people (Vissers et al., 2016; Song et al., 2022). It is not unexpected that intellectual disability can result from a genetic mutation that impairs protein function in the central nervous system (Vissers et al., 2016).

The implementation and fulfillment of the rights of persons with disabilities is based on: respect for dignity, individual autonomy, non-discrimination, full participation, humanity, equality of opportunity, equality, accessibility, growing capacity, inclusiveness and special treatment.and more protection (Hasti et al., 2021). Teachers need to be ready to embrace the diversity of abilities and potential that people with intellectual disabilities possess. People with intellectual disabilities face significant challenges while trying to integrate into society. Both cognitive and functional limits in areas like daily life, social skills, and communication are what define them (Gierczyk & Hornby, 2021). Significant limits in intellectual functioning as well as adaptive behavior, as demonstrated by conceptual, social, and practical adaptive skills, are characteristics of intellectual disability. The disability began before to turning eighteen (Schalock et al., 2021;Tamm et al., 2022).

There have been various documented obstacles to involvement for kids with intellectual disabilities, which probably accounts for the decreased levels of physical activity (Yazdani et al., 2013), communicative abilities (Dhondt et al., 2020). The absence of programs that are easily accessible, disinterest, behavioral issues, motor difficulties, lack of time, lack of a physical activity space, and transportation issues have been noted as obstacles to involvement for kids with intellectual disabilities (Stanish et al., 2019).

When it comes to their physical and motor traits, children with intellectual disabilities differ from those without intellectual disabilities the least. Compared with normally developing children, children with intellectual disabilities have some motor problems (Hekim et al., 2016). Preparation for enhancing motoric and psychological skills through exercise is a fundamental process (Fikri et al., 2022). Children with intellectual disabilities had deficiencies and developmental delays in FMS (also known as gross motor skills, fundamental motor skills, or competencies) (Maïano et al., 2019).

In general, the delay in reaching significant developmental milestones increases with the severity of intellectual disability (Unver & Erdem, 2019). The most prevalent symptoms seen in these children are intellectual disability, with many of them being nonverbal and having delayed motor milestones (walking usually occurring between the ages of two and seven) (Jacher et al., 2019). Special attention is required for students with disabilities, particularly those who are mentally impaired (Buchner et al., 2021). When challenging skills are modified as necessary, students with ID can often participate successfully in physical education and sport alongside peers particularly true for children with ID who have associated health or physical impairments who need extensive or pervasive supports (Cavanaugh, 2017).

The definition of intellectual disability is focused on context and function. This perspective has limits when it comes to comprehending the

dynamic nature of intellectual functioning and how it varies with age throughout the developmental process, although being helpful in identifying individual strengths and limitations in current performance. An approach to intelligence that is so developmental fosters efficient teaching and programming (Tassé & Grover, 2021). Piaget's vast work, which argued that children go through four periods of cognitive development-sensorimotor, preoperational thought, concrete operations, and formal operations-must be consulted in order to determine developmental orientation (Wattad & Chen, 2023;Babakr et al., 2019).

Based on the results of observations (2017) conducted by researchers in the three special schools education serving children with ID at the elementary school level, it was obtained data that the FMS, the data obtained are as follows;

Children with ID experience disturbances and obstacles in carrying out movements, experience difficulties in adapting and social interaction, especially those related to moving movement.

FMS and physical fitness level of children with mild and moderate ID at primary school special eduacation Palembang City are still low.

Physical education learning materials provided by teachers are still less varied because the teacher's ability to develop models is still inadequate.

Implementation of physical education has not become an optimal means of addressing problems or movement barriers for children with ID in primary school special eduaction Palembang City.

There is no collaboration between physical education teachers, class teachers, and teachers of other subjects to collaborate in making learning material as outlined in the physical activities of children with ID.

Based on the results of the preliminary study, the researcher and team developed a Physical Education learning model specifically designed for children with mild ID individuals who have an IQ of 55-69 (Sajewicz-Radtke et al., 2022), capable of learning (can still be given verbal and non-verbal instruction even though it has to be 3-4 repetitions of instruction (Sari & Natalia, 2018), physically the same as a normal child, but still requires exercise for coordination of movements (Martinus & Kesumawati, 2020), especially those related to FMS, because FMS are an asset for everyone without exception children with ID as a provision for carrying out daily activities without significant obstacles (Kesumawati et al., 2021).

Previous research on games with grahita tuna kid like multimedia of educational game (Hardiyanti & Azizah, 2019), with videogame (Contreras et al., 2019) elearning model is named activities in the morning (Kesumawati et al., 2021), train concentration through fishing games (Sari & Natalia, 2018), using game learning analytics (Cano et al., 2018). In this study, the model development focuses on enhancing Fundamental Movement Skills (FMS) for children with mild ID. This is achieved through the modification of equipment, game rules, and movement activities, tailored to the specific characteristics and needs of these children. The approach involves incorporating play activities to create a specialized learning model for the development of FMS.

Children with ID exhibit cognitive behavior differences compared to their typically developing peers of the same age. The severity of the disability is inversely proportional to the cognitive level, meaning that a higher level of disability correlates with a lower cognitive level. Additionally, these children often face challenges such as a limited capacity to generalize information, a brief attention span, and difficulties understanding abstract concepts. Furthermore, students' performance or ability levels are closely linked to their challenges in controlling attention.

Building upon the background of the problem and the initial investigations conducted by the researchers, a fundamental movement learning model was formulated for children with mild ID. This model, centered around play activities, was aligned with the theme of the 2013 curriculum, specifically focusing on the theme of " Getting to Know Flowering Plants." The model comprises three distinct game stations, each featuring unique movement tasks, media, and equipment.

MATERIALS AND METHODS

Participant

Research and development procedures by Borg and Gall basically consist of two main purposes: (1) developing a product, or commonly referred to as a validation function, and (2) testing the effectiveness of a product to its objectives, or

as commonly known as an efficacy test function. Research and development procedures do not have to be followed, but each developer chooses or modifies measures that are tailored to the constraints and conditions faced by researchers in carrying out their research. This research and development consists of five major procedural steps (Randhawa, 1973):

(1) developing products and; (2) testing the effectiveness of the product to achieve the goal. Small group trial subjects included 13 students (7 boys, 6 girls 9-10 years old) and 4 teachers, while large group trial subjects involved 26 students (12 boys, 14 girls 9-10 years old) and 4 teachers in the 3 SLB in Palembang city.

The research and development phase employed a pre-experimental approach with a single one-shot case study design to assess the product trial. The participants included Physical Education (PE) teachers and first-grade students with mild intellectual disabilities at SLB Palembang. This study followed ethical standards and received approval from the National Paralympic Committe Indonesia Sumatera Selatan, Indonesia with reference number (No:180/NPC-SS/II/2023). Participant provided informed consent, with the volunteer form covering research details, risks, benefits, confidentiality, and participant rights. The research strictly adhered to the ethical principles of the Declaration of Helsinki, prioritizing participant's rights and well-being in design, procedures, and confidentiality measures.

The Data Collection Technique

Fun Game Based Learning Model

The motor skills learning model, designed around play activities, aligns with the 2013 curriculum theme. The theme of this game is "Getting to Know Flowering Plants." The model consists of three game stations, each with different movement tasks and using different media and tools. In Station 1, participants engage in rolling movements on a carpet. Upon reaching the finish line, they open and close zippers, buttons, and fasteners on prepared clothing items. In Station 2, participants run as fast as they can to move a ball along a carpet path. In Station 3, participants execute kicking movements to aim the ball towards a target.

The objectives of this game are to: (1) Improve rolling movements on a carpet, (2) Enhance running skills while following a designated path, (3) Improve ball-kicking skills, (4) Enhance cognitive abilities, enjoyment, and focus. By creating a fun and varied experience, the game aims to stimulate the physical and cognitive development of participants while fostering an interest in getting to know flowering plants.

The Fun Game Model Getting to Know Flowering Plants Post 1

Playing activities in post 1, using the following equipment: (1) 10 pieces of colorful Evamatt carpets with numbers 0 to 9, (2) A task board shaped like a shirt, modified with buttons, zippers, and snaps, (3) tape, (4) whistles.

The implementation of playing activities in post 1 by way of child sound of the whistle, the student immediately performs rolling movements on the Evamatt carpet while counting the rolls. (3) Once at the finish line, the child completes the task of opening and closing zippers, buttons, and fasteners. (4) Upon completion, the child promptly exits the play area.

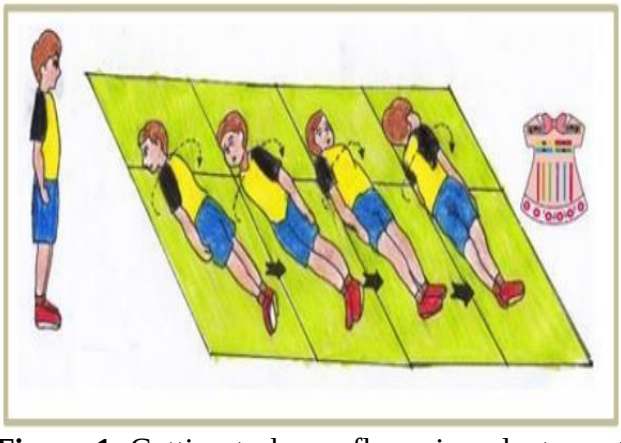

Figure 1. Getting to know flowering plants post 1 (Kesumawati et al., 2018)

Guidelines for Assessment Model Getting to Know Flowering Plants Post 1

Movement Skills Aspect

Score 4, if the student can perform the task without assistance from others.

Score 3, if the student can perform the task with minimal assistance from others.

Score 2, if the student can perform the task with full assistance from others.

Score 1, if the student requires special guidance to perform the task.

Cognitive Skills Aspect

Score 4, if the student can accurately count the number of sideways rolls they perform.

Score 3, if the student attempts to count the number of sideways rolls they perform, even if not entirely correct.

Score 2, if the student can count the number of sideways rolls they perform with minimal guidance from the teacher.

Score 1, if the student can count the number of sideways rolls they perform with full assistance.

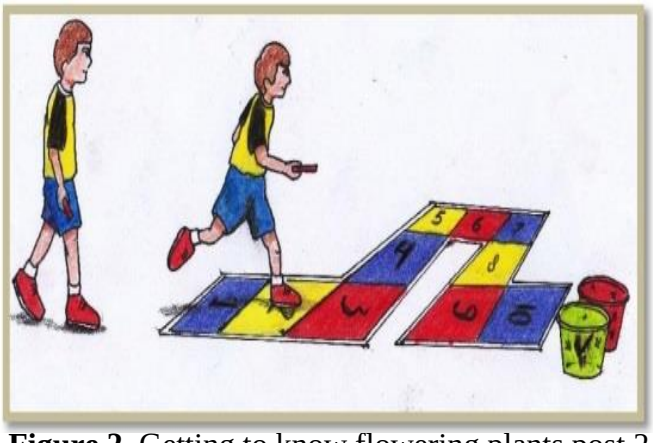

Figure 2. Getting to know flowering plants post 2 (Kesumawati et al., 2018)

Fun Aspect

Score 4, if the student displays a cheerful facial expression and sometimes accompanies it with joyful laughter.

Score 3, if the student shows a cheerful facial expression and occasionally smiles broadly while enjoying the activity.

Score 2, if the student does not express happiness (engages in movements arbitrarily and carelessly).

Score 1, if the student does not seem happy (frowns and appears reluctant while performing movements).

Focus Attention Aspect

Score 4, if the student is highly focused during the movement (from start to finish) and is not distracted by the surroundings.

Score 3, if the student's focus is occasionally disrupted, sometimes looking to the left and right.

Score 2, if the student is not focused and often stops during the movement task.

Score 1, if the student is extremely unfocused and unable to complete the movement task.

Table 1. Assessment rubric of model getting to know flowering plants post 1

No.	Student Name	Aspect				Total score
		Movement Skill	Cognitive Skill	Fun	Focus Attention	
1.						
2.						
e.g						

The Fun Game Model Getting to Know Flowering Plants Post 2

Playing activities in post 2, using the following equipment: (1) 10 colorful Evamatt carpets with numbers 0 to 9, (2) true or fals flashcard, (3) A basket in red and yellow colors, (4) Flower-themed flashcards, (5) coloring tape, (6) cone, and (7) whistle.

The implementation of playing activities in post 2 by way of: (1) The child stands ready behind the starting line, (2) Upon the teacher's whistle, the child moves, running along the Evamatt track, placing 5 flower-themed flashcards in the correct positions one by one, (3) After placing one flashcard in the right spot, the child walks back to the starting line, then runs again to move the second through fifth flashcards, (4) Once finished, the child leaves the playing field and proceeds to the next station.

Guidelines for Assessment Model Getting to Know Flowering Plants Post 2

Movement Skills Aspect

Score 4, if the student can perform the task without assistance from others.

Score 3, if the student can perform the task with minimal assistance from others.

Score 2, if the student can perform the task with full assistance from others.

Score 1, if the student requires special guidance to perform the task.

Cognitive Skills Aspect

Score 4, if the student can correctly place the flashcards in their designated positions

Score 3, if the student attempts to place the flashcards, even if not in the correct positions.

Score 2, if the student can place the flashcards in their designated positions with minimal guidance from the teacher.

Score 1, if the student can place the flashcards in their designated positions with full assistance from the teacher.

Fun Aspect

Score 4, if the student displays a cheerful facial expression and sometimes accompanies it with joyful laughter.

Score 3, if the student shows a cheerful facial expression and occasionally smiles broadly while enjoying the activity.

Score 2, if the student does not express happiness (engages in movements arbitrarily and carelessly).

Score 1, if the student does not seem happy (frowns and appears reluctant while performing movements).

Focus Attention Aspect

Score 4, if the student is highly focused during the movement (from start to finish) and is not distracted by the surroundings.

Score 3, if the student's focus is occasionally disrupted, sometimes looking to the left and right.

Score 2, if the student is not focused and often stops during the movement task.

Score 1, if the student is extremely unfocused and unable to complete the movement task.

Table 2. Assessment rubric of model getting to know flowering plants post 2

No.	Student Name	Aspect				Total score
		Movement Skill	Cognitive Skill	Fun	Focus Attention	
1.						
2.						
e.g						

The Fun Game Model Getting to Know Flowering Plants Post 3

Playing activities in post 3, using the following equipment: (1) 3 fabric balls with a diameter of 15 cm, (2) 15 colorful plastic cups, (3) coloring tape, and (4) whistle.

The implementation of playing activities in post 3 by way of: (1) The child stands ready behind the starting line. (2) Upon receiving instructions from the teacher (whistle sound), the child promptly kicks the ball towards the target. (3) Each child is given three chances to kick the ball. After each kick, the child counts the number of targets (plastic cups) that fall to the floor. (4) Once finished, the child exits the play area.

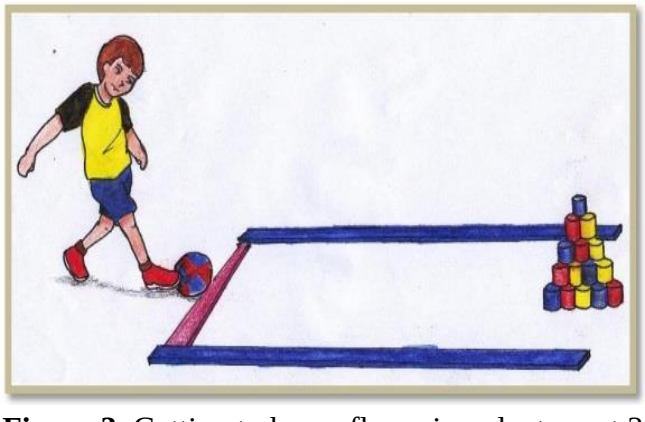

Figure 3. Getting to know flowering plants post 3 (Kesumawati et al., 2018)

Guidelines for Assessment Model Getting to Know Flowering Plants Post 3

Movement Skills Aspect

Score 4, if the student can perform the task without assistance from others.

Score 3, if the student can perform the task with minimal assistance from others.

Score 2, if the student can perform the task with full assistance from others.

Score 1, if the student requires special guidance to perform the task.

Cognitive Skills Aspect

Score 4, if the student can correctly count the number of plastic cups that fell to the floor.

Score 3, if the student attempts to count the number of plastic cups that fell to the floor, even if not entirely correct.

Score 2, if the student can count the number of plastic cups that fell to the floor with minimal guidance from the teacher.

Score 1, if the student can count the number of plastic cups that fell to the floor with full assistance from the teacher.

Table 3. Assessment rubric of model getting to know flowering plants post 3

No.	Student Name	Aspect				Total score
		Movement Skill	Cognitive Skill	Fun	Focus Attention	
1.						
2.						
3.						
4.						
e.g						

Fun Aspect

Focus Attention Aspect

Score 4, if the student displays a cheerful facial expression and sometimes accompanies it with joyful laughter.

Score 3, if the student shows a cheerful facial expression and occasionally smiles broadly while enjoying the activity.

Score 2, if the student does not express happiness (engages in movements arbitrarily and carelessly).

Score 1, if the student does not seem happy (frowns and appears reluctant while performing movements).

The researcher evaluated the "getting to know flowering plants" learning model activities with insights from four experts: an expert in adaptive PE materials, an educational psychologist, an expert in planning learning for children with special needs, and a special education PE teacher. During this phase, the activities are assessed and, if necessary, modified. The expert assessment utilizes a rating scale structured according to a predetermined grid that aligns with the research objectives. Experts and practitioners provide ratings from a scale of 1 to a scale of 4, For further clarification, please refer to the table 4.

Table 4. Instructional rating scale assessment for experts

No.	Scale	Assesment Description
1.	4	very suitable/very precise/very safe/very easy/very practical/highly optimizing.
2.	3	appropriate/precise/safe/easy/practical/can optimize.
3.	2	inappropriate/inappropriate/unsafe/not easy/impractical/unable to optimize.
4.	1	very inappropriate/very imprecise/very unsafe/very not easy/very impractical/ very unsafe.

After receiving assessments from the four experts, the next stage includes analyzing the acquired data to determine the validity of the "getting to know flowering plants" model using the Content Validity Ratio (CVR) table 5 below:

Table 5. Instrument of assessment expert validation

No.	Indicator Assessment	Rating Scale			
		1	2	3	4
1.	The suitability of the game model developed with competency standards and basic competencies and indicators				
2.	The suitability between indicators and subject matter and assessment				
3.	The accuracy of the contents of the FMS learning model developed for SLB students with intellectual disabilities.				
4.	The accuracy of the contents of the FMS learning model developed with the characteristics of the SLB students with intellectual disabilities.				
5.	The safety of the FMS learning model developed.				
6.	Ease of the developed FMS learning model.				
7.	Practicality of the developed FMS learning model.				
8.	The FMS learning model developed can increase the activeness of children with ID in SLB.				
9.	The FMS learning model developed can optimize the (cognitive) knowledge of children with ID in SLB.				
10.	The FMS learning model developed can optimize the FMS of children with ID in SLB				

Statistical Analysis

The validation of the getting to know flowering plants learning model was conducted by correlating the scores of the observed items with the total scores. A trial was performed to determine the magnitude and direction of the relationship. Values range from 0 to 1 or 0 to -1. The positive and negative signs indicate the direction of the relationship. The trial was conducted by means of an inter-rater test, using Thorndike's Anova-General Multifacet Model data analysis namely testing two variables of the type ordinal and scale with normal / parametric distribution using SPSS. The next step is the reliability test. There are two types of inter-rater reliability tests, if the number of raters is 2 people, the reliability test uses the inter-rater agreement correlation coefficient test, and if the number of raters is more than 2 people, the reliability test uses the correlation coefficient test between classes Intra class Correlation Coefficients (ICC).

In this study, three raters were employed, and the correlation coefficient test, specifically the Intraclass Correlation Coefficient (ICC), was utilized to assess the relationship between classes. The reliability of the instrument was examined through a test involving 13 students and 4 teachers participating in the small group trials, and 26 students and 4 teachers in the large group trials, all conducted in a 3rd primary school special education (SLB) in Palembang city. Both qualitative and quantitative data were utilized in this study. A questionnaire was employed as an instrument to gather teachers' opinions, while non-test techniques such as observation (rubric assessment) were used to collect data on learning outcomes. The data analysis involved the application of the t-test and the Wilcoxon test.

RESULTS

In this research, a rating scale instrument was utilized to appraise the feasibility of the initial Fundamental Movement Skills (FMS) development model during play activities with children experiencing mild intellectual disabilities (ID). The study utilized Adaptive Physical Activities and employed a rating scale for the expert validation of a developed model. Prior to conducting small group trials, the research focused on assessing the feasibility of the model. This evaluation engaged both experts (four specialists) and practitioners (teachers implementing the model). The purpose of the expert validation test was to determine the validity level of the learning model getting to know flowering plants, as evaluated by the four experts. The assessments made by the experts and the results of the data analysis using the Content Validity Ratio (CVI) and Content Validity Ratio (CVR) at table 6 were as follows:

Table 6. CVI and CVR test results for learning model "getting to know flowering plants"

No.	E1	E2	E3	E 4	ne	N	N/2	ne-(N/2)	CVR	Criteria
1	4	4	4	3	3	4	2	1	0.5	Valid
2	3	4	3	3	1	4	2	-1	-0.5	Valid
3	4	4	4	4	4	4	2	2	1	Valid
4	4	4	4	4	4	4	2	2	1	Valid
5	4	4	4	4	4	4	2	2	1	Valid
6	4	4	4	4	4	4	2	2	1	Valid
7	4	3	4	4	3	4	2	1	0.5	Valid
8	4	3	4	4	3	4	2	1	0.5	Valid
9	4	3	4	4	3	4	2	1	0.5	Valid
10	4	3	4	4	3	4	2	1	0.5	Valid
Total	39	36	39	38			Amount		6	
Mean	3.9	3.6	3.9	3.8			Average		0.6	Valid
Average			3.8							

CVR scores on each item ranged 1 to -1 Information: ne: Total Essential Subject Matter Expert (SME), N : Total of Subject Matte Expert V : Valid

The CVR analysis results for learning model "Getting to Know flowering Plants" (table 6) indicate a value of 0.6. This suggests that the content of the FMS learning model "Getting to Know flowering Plants" for children with mild ID are appropriate or relevant or good, and also have high content validity, so that it can be continued to be tested for empirical validation. Refer to table 7 for the outcomes of the validity test analysis of learning model "Getting to Know flowering Plants"instrument. By analyzing the correlation coefficients among the rater test data for learning model getting to know flowering plants instrument, considering movement skills, cognitive aspects, fun aspects, and attention focus aspects, it becomes apparent that there is a robust positive correlation between the assessments made by rater 1 and the overall rater scores.

Likewise, a noteworthy positive correlation is observed between the evaluations of rater 2 and the total rater score, along with a significant positive relationship between the assessments of rater 3 and the overall scores assigned by all raters.

The researcher conducted an evaluation of the learning model getting to know flowering plants reliability using the Intra-class Correlation Coefficient (ICC) test, which engaged three raters. The corresponding data is outlined in the following table (Table 8).

Based on the results of the ICC test 3 rater, it can be concluded that the reliability value of the four aspects is estimated using the Alpha coefficient, with data analysis using the Anova General Multifacet Model, showing the coefficient value and coefficient value between rater is high. After the results of the data analysis of the getting to know flowering plants instrument were declared valid and reliable, the researchers proceeded to the empiric test (field trials) on the products developed, namely by conducting small group trials and large group trials to determine the effectiveness of the product being developed.

Table 7. Instrument validity test results for learning model "getting to know flowering plants"

Aspect	Rater Score	Coefficient Correlasion	P	Status
Movement Skill	Rater 1 - score total rater	0,747	0,05	Valid
	Rater 2 - score total rater	0,798	0,05	Valid
	Rater 3 - score total rater	0,755	0,05	Valid
Cognitive Skil	Rater 1 - score total rater	0,754	0,05	Valid
	Rater 2 - score total rater	0,816	0,05	Valid
	Rater 3 - score total rater	0,770	0,05	Valid
Fun	Rater 1 - score total rater	0,516	0,05	Valid
	Rater 2 - score total rater	0,762	0,05	Valid
	Rater 3 - score total rater	0,520	0,05	Valid
Focus Attention	Rater 1 - score total rater	0,777	0,05	Valid
	Rater 2 - score total rater	0,683	0,05	Valid
	Rater 3 - score total rater	0,773	0,05	Valid

Table 8. Instrument Reliable Test Results for Learning Model Getting to Know Flowering Plants

Aspect	Coefficient	Coefficient Inter Rater	Status
Movement Skill	0,779	0,638	Reliabel
Cognitive Skill	0,762	0,615	Reliabel
Fun	0,784	0,644	Reliabel
Focus Attention	0,827	0,705	Reliabel

DISCUSSION

How information is presented to students with intellectual disabilities often makes the difference between success and failure. In general, learning enhanced if it is fun, ensures success, and keeps the student active. Because students with intellectual disabilities need more time and opportunities to learn new skills, good teachers plan an active class and provide many opportunities for students to practice targeted skills. They also carefully select teaching methods to match the students' level of cognitive development.

Development of children with mild intellectual disabilities emphasized the mutual relationships between many environmental components and how they affect children's development, it is true that a school classroom has an impact on kids' growth (**Smogorzewska et al., 2019**). Low FMS performance in children with ID is probably caused by poor cognitive capacities (Vuijk et al., 2010). Development used by trainers or PE teachers to create specific treatments to advance FMS (Kavanagh et al., 2023). Children with mild mental retardation are quite adept at running, jumping and rolling (Alesi et al., 2018). Motor ability for controlling items and moving around, especially kids with mild intellectual disabilities. Even while sprinting, leaping, and throwing, lower outcomes are attained, with significant individual variations. The development of motor skills in children with intellectual impairments (ID) is a priority to assist their inclusion in school, as only a small percentage of these children exhibit motor outcomes comparable to normal ones (Mocanu & Gavrila Udrea, 2021). Children with mild intellectual disabilities engage in physical activity, their FMS increases (Wang et al., 2022).

Saying the names of flowers that are found on colorful items is how my research attempts to train cognitive abilities. Nearly identical to (Russell, 2017): "people get together to converse and discuss a variety of topics while seated in a circle, including their favorite colors, animals". Children with modest intellectual disabilities showed notable gains in attentional performance measures, specifically visual attention (García-Redondo et al., 2019). Let's color play to be displayed on things like tiny balls, cones, circles, stripes, balloons, and scarves

(Regaieg et al., 2020). It's given kids the chance to engage their imaginations (Roberts-Yates & Silvera-Tawil, 2019). Learning children with mild ID must be carried out with simple instructions and accompanied by direct and concrete demonstrations to make it easier for children with ID to accept. Because Children with ID are Children affected by this condition experience a variety of challenges related to learning, communication, social skills, and independent functioning (Wolan-Nieroda et al., 2023). Verbal instructions with examples of the correct movements will be easier to imitate by children with ID, therefore the teacher places more emphasis on practicing the movements that the child must do.

FMS learning model for activities in the morning designed based on the needs of children with mild ID. After being validated by experts, analyzed and getting relevant results this model will be tested in the small and large scale trial stages on teachers and students in primary school special education in Palembang City. Significant gains in fine motor accuracy, fine motor integration, hand dexterity, bilateral coordination, balance, speed and agility, upper limb coordination, strength tests, and all dimension scores for quality of life were identified in the motor skill tests of the children with intellectual disabilities (Özkan & Kale, 2023).

Conclusion

(1) The CVR analysis results for model indicate a value of 0.6, falling within the range of 1 to -1. This signifies that the content of the FMS getting to know flowering plants is deemed appropriate, relevant, and of high content validity.

(2) Upon calculating the correlation coefficient between rater test data for getting to know flowering plants instrument across movement skills, cognitive aspects, fun elements, and attention focus aspects, it is observed that there is a strong positive relationship between the scores assigned by rater 1 and the overall rater scores. Similarly, there is a substantial positive correlation between the scores given by rater 2 and the total rater score. Additionally, the relationship between rater score 3 and the total scores among raters also exhibits a significant positive relationship ($p > 0.05$).

The outcome of this research is a learning model comprising activities designed to enhance fundamental movement skills, cognitive abilities, enjoyment, and attention focus in children with mild intellectual disabilities, aged 8-10, irrespective of gender. The model employs safe, affordable, educational, and entertaining media tailored for children. It is suggested for adoption not only by educators in special schools but also by parents with children who have special needs, particularly those with mild intellectual disabilities or facing challenges in movement-related learning.

Conflict of interest

The authors declare no conflict of interest. No financial support was received.

Ethics Statement

Ethical clearance (No:180/NPC-SS/II/2023) for this research was obtained from the Research Ethics of National Paralympic Committe Indonesia Sumatera Selatan, Indonesia.

Author Contributions

Study Design, SAK, AF and HF; Data Collection, SAK, NS, HA and M; Statistical Analysis, HA, NS and BH; Data Interpretation, HA, NS and BH; Manuscript Preparation, AF, BH, and M; Literature Search, SAK and AF. All authors have read and agreed to the published version of the manuscript.

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