Original Research Article

Development of Center Learning Model for Children's Metacognitive Stimulation in Kindergarten

ABSTRACT

The purpose of this research is to provide an overview of the center learning model that can stimulate metacognitive abilities in children. The problems discussed are related to obtaining a comprehensive understanding of the requirements of the prototype model in the form of a center learning model that can stimulate children's metacognitive abilities that are valid, practical and effective. This research is a research and development that uses the Borg and Gall development model. The subject of the research relates to students aged 5-6 years in kindergarten. The results of research and development show that the development of a center-based learning model to stimulate children's metacognitive skills is needed. This is because the average level of understanding of teachers is still lacking, resulting in low achievement of children. Therefore, a systematic center-based learning model syntax is needed, which integrates the science process approach to foster curiosity and creative thinking, as well as the 5E continuum approach to improve children's problem solving skills at each stage of play. The overall validity of the model consisting of model books, guidebooks, and research instruments obtained an average validity score that fell into the valid category, indicating feasibility for use. The level of practicality in trials 1 and 2 was successfully implemented, as evidenced by the teacher's response which showed practicality and student activity which was classified as active during the stimulation process. This model has been declared effective because it is proven those children's metacognitive achievement increases significantly when the center learning model is applied.

Keywords: *Center learning model, metacognitive, kindergarten.*

INTRODUCTION

Early childhood education has a crucial role in fostering the innate abilities of children from the time of their birth. Cognitive development is a prominent area of concentration in the study of child development, while also acknowledging the importance of attending to other facets of development[1]. The significance of cognitive development lies in its frequent correlation with children's intellectual abilities. Educational stimulation for early childhood is grounded in the legislation of the Republic of Indonesia, specifically Law No. 20 of 2003, which pertains to the National Education System. According to this law, cognitive development in early childhood is categorized into three distinct aspects: (a) learning and problem-solving, (b) logical thinking, and (c) symbolic thinking. The subsequent advancement pertaining to cognition involves the management and organization of cognitive talents in order to effectively adapt to various situations and issues. This aligns with the components of learning and problem-solving as outlined in the Early Childhood Education (ECE) Curriculum, encompassing the capacity to address uncomplicated challenges encountered in daily routines.

Naturally, cognitive facets do not operate in isolation, but rather necessitate control and regulation. When individuals engage their cognitive capacities, they must possess the capability to discern and govern the cognitive actions they employ. Hence, it is vital for a child to possess a cognizance of their cognitive capabilities and possess the capacity to effectively structure their thoughts. According to[2], scholars refer to this cognitive skill as metacognition.

In the context of early childhood development, it is imperative to engage children in enjoyable play activities that foster the regulation of their cognitive abilities. These activities should ideally entail the active participation of adults or parents. By doing so, children are provided with opportunities to encounter challenges during play and subsequently acquire problem-solving skills. It is noteworthy that the engagement of adults or parents in this process can be beneficial, as they can offer guidance and support to children as they navigate these challenges. This finding aligns with the research findings of Alexander, Fabricius, Fleming, Zwahr, and Brown, as reported in[1], which suggest that individuals with a substantial level of metacognitive knowledge and skills are more likely to

demonstrate successful problem-solving abilities. This phenomenon arises due to the influence of cognitive information on the choice of individual learning strategies and their use in problem-solving contexts.

Metacognitive abilities encompass the cognitive processes and developmental phases during which children engage in problem-solving activities to address their learning difficulties, ultimately leading to their attainment of developmental maturity. This aligns with the 2013 PAUD Curriculum, which emphasizes the significance of fostering children's curiosity and creative thinking skills during their early childhood development in kindergarten. The cultivation of metacognitive abilities in young children is deliberately facilitated through engaging and enjoyable play-based activities, with the aim of fostering advanced cognitive processes, enhancing metacognitive capabilities, and promoting successful learning. This aligns with the findings of a study conducted by [3], which posited that the indicators for the acquisition of problem-solving skills in preschool children encompass (1) the development of observational abilities, (2) the acquisition of skills related to data and information gathering, (3) the cultivation of skills pertaining to information processing, and (4) the development of skills associated with information communication.

The significance of children's metacognition in their developmental growth, particularly in kindergarten, is supported by empirical evidence and theoretical research. Consequently, it is crucial for educators to possess the necessary skills to identify and comprehend learning models, employ effective teaching strategies, and implement diverse interventions that foster the learning process and problem-solving abilities through various forms of play. The teacher can effectively facilitate the stimulation process by employing an engaging and enjoyable instructional style or model. The center learning paradigm is currently being employed by educators in Indonesia.

The Center Learning Model, also referred to as Beyond Centers and Circle Time (BCCT), has the following objectives: (1) to foster the development of multiple intelligences in children through guided play, (2) to establish an educational environment that encourages children to actively engage, exhibit creativity, and engage in critical thinking by exploring their personal experiences rather than solely adhering to instructions, imitating, or memorizing, and (3) to prioritize child-centered activities, with the teacher assuming the role of a facilitator, motivator, and evaluator. The primary characteristic entails the supply of first scaffolding to assess the quality of play activities. Scaffolding is employed as a pedagogical strategy to facilitate the development of children's conceptual understanding, rule comprehension, ideation, and knowledge acquisition. This model offers children the chance to engage in active and creative play inside designated learning areas, with the aim of facilitating their optimal development in accordance with their individual potential and interests. This center model aims to enhance children's capacity to effectively address problems in a systematic manner, while also fostering their creativity and active engagement. The teacher plays a crucial role in this process by stimulating children's ideas and prior knowledge, and subsequently facilitating their identification of problems with gradual assistance, tailored to each child's individual capabilities. To achieve this, the teacher employs a structured approach to speech patterns known as SPOK (subject, predicate, object, description). Simultaneously, it is possible to instruct youngsters to position themselves proportionally by engaging in role play activities, since they are being educated to assume various roles.

Several research studies have provided evidence supporting the efficacy of the center model in promoting various aspects of children's cognitive and language development. For instance, [4]conducted a study that demonstrated the successful implementation of center learning in RA Darul Falah. The findings revealed significant advancements in six different areas of child development, particularly in the cognitive domain within centers such as preparation centers and beam centers. Moreover, the findings of a study conducted by [5]indicate that the implementation of the center learning model has a significant impact on the development of children's science and speaking abilities. As a result, it is advisable for kindergarten institutions to adopt the center learning model as a suggested approach.

In light of the aforementioned, the author intends to construct a center learning model aimed at fostering children's metacognitive abilities through the cultivation of higher-order thinking skills. This model will commence by affording children opportunities to observe and assess their existing knowledge and actions, thereby instigating curiosity. Subsequently, children will be encouraged to reflect upon their observations, followed by engaging in a progression of activities ranging from simple to complex. Moreover, the model will seek to cultivate in children a propensity for inquisitiveness and the ability to address diverse inquiries within the context of their play activities. Lastly, children will be provided with occasions to identify and resolve problems encountered during their play endeavors.

METHOD

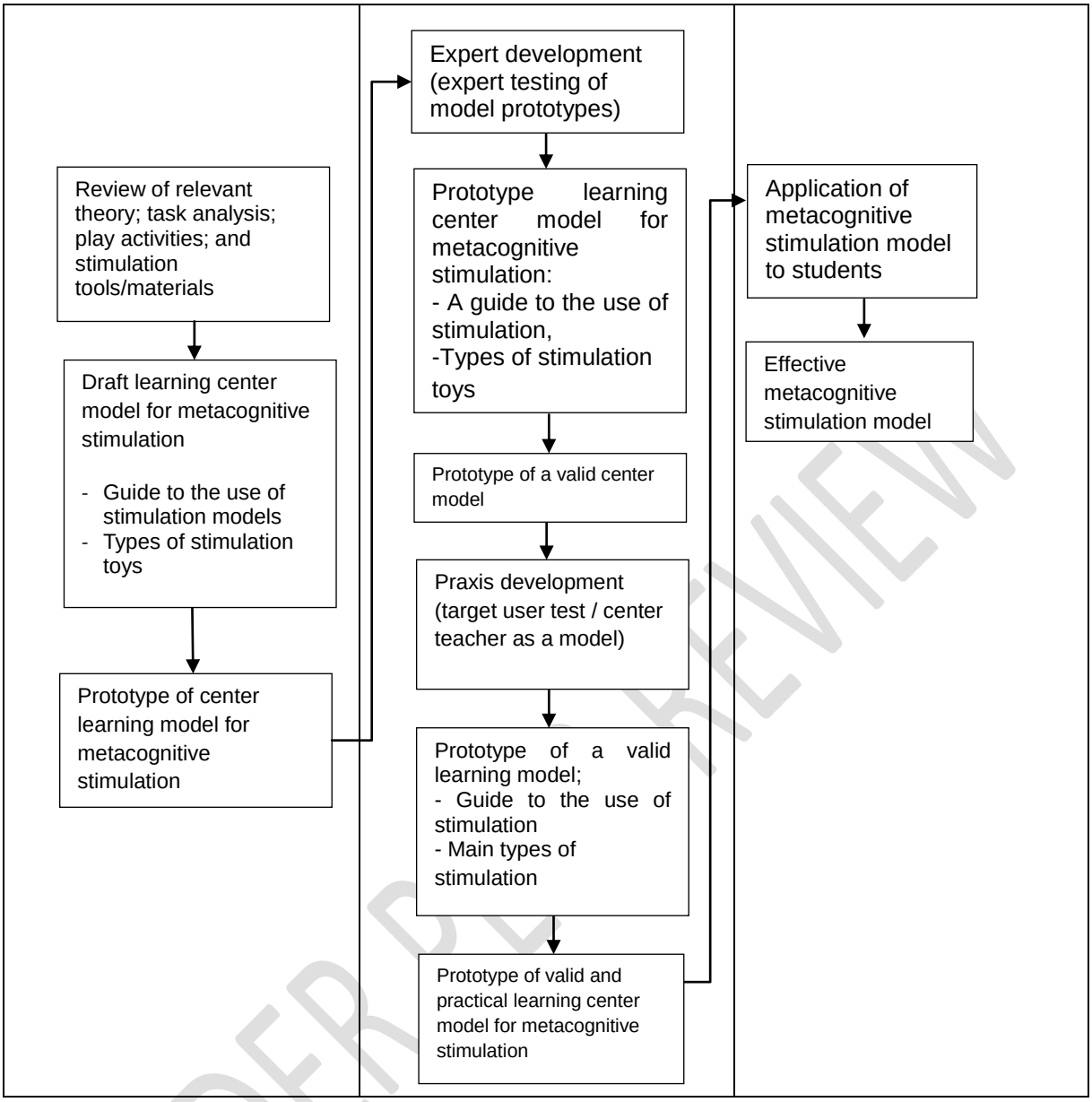
This study employs the Research and Development (R&D) approach, utilizing the Borg and Gall in[6]research model framework comprising ten stages: (1) preliminary study, (2) design, (3) design development, (4) limited trial, (5) revision of limited trial results, (6) wider trial, (7) revision of wider trial, (8) feasibility test, (9) final product revision, and (10) final product dissemination and implementation (Borg and Gall, 1989: 782) as cited in [7].

When these research stages are integrated, they can be condensed into four primary stages while maintaining the original ten steps. These stages include: (1) preliminary studies, which involve conducting a needs analysis, (2) the design stage, where a model prototype is developed, (3) the design development stage, which encompasses trial and revision of the prototype to evaluate its effectiveness, and (4) the wider trial stage, which involves further trial revisions, feasibility testing, final product revisions, and dissemination to assess the overall effectiveness of the research.

In order to assess the validity, practicality, and effectiveness of a model, as outlined by Akkerand Nievenin [8], this study has developed several instruments. These instruments include: a) a validity instrument utilizing a research instrument validation sheet and a model assessment sheet, b) a practicality instrument employing a model implementation sheet and a teacher activity sheet, and c) an effectiveness instrument utilizing a child activity observation sheet and a child development achievement assessment sheet. The efficacy of the model is evaluated using a realistic method, which is substantiated by the examination of data pertaining to two specific criteria that must be satisfied. The criteria for evaluation include two main aspects. Firstly, the level of development of the student's primary process should be achieved, with a minimum of 70% of students reaching the expected level of development of learning outcomes. Secondly, positive feedback from teachers is required for each aspect of the learning model, specifically the guidebook. This feedback should be obtained from at least 80% of the total four teacher responses.

Figure 1 :The technique is depicted in a schematic manner.

1. NEEDS ANALYSIS **Preliminary study to describe the need for a center learning model for children's metacognitive stimulation in kindergarten**		
2. DESIGN	**3. DEVELOPMENT AND EVALUATION**	**4. EFFECTIVENESS TRIAL**



RESEARCH RESULT

Based on the results of research and development contains an explanation of the theoretical and empirical studies of the research findings and development of the Center learning model for Metacognitive stimulation of students. Sequentially the research findings are presented as follows: (1) the need for the development of center learning models for metacognitive stimulation of students, (2) the design of center learning models for metacognitive stimulation of students, (3) the level of validity and practicality of the model, and (4) the level of effectiveness of the development of center learning models for metacognitive stimulation of students.

1. Needs for Development of Center Learning Model

Based on the results of documentation, questionnaires, interviews and observations at the needs analysis stage, it can be described that the teacher's ability to stimulate children's metacognition: 1) Teachers' ability to understand the center learning model is still lacking, 2) The teacher's understanding of how to stimulate children to think creatively while working is still lacking, 3) The teacher's ability to make interventions in stimulating children's problem-solving processes is still lacking, 4) The way the teacher organizes the play environment in each center is still lacking, 5) The teacher's language skills in developing children's curiosity and creative attitudes are still lacking, and 6) The teacher's ability to stimulate children to be able to express their needs/desires/interests appropriately is still lacking.

For more details about educators' understanding of the center learning model for metacognitive stimulation is shown in the following table.

Table 1. Results of Data Analysis of Educators' Understanding of the Model

No	Indicator	Average	Categorize
1	Understanding of the center learning model	1,4	Lack of familiarity
2	Understanding of the preparation of RPPM and RPPH	1,9	Lack of familiarity
3	Understanding the arrangement of the play environment	2,4	Lack of familiarity
	Understanding of pre-play footing	1,9	Lack of familiarity
	Understanding footing during play	1,7	Lack of familiarity
	Understanding of footing after play	2,4	Lack of familiarity
4	Understanding of assessment	1,8	Lack of familiarity

Based on the findings derived from the analysis of the questionnaire administered to a sample of four teachers, it is evident that there exists a deficiency in the proficiency to execute the center learning model across the four stages for the purpose of stimulating children's metacognitive abilities. This inadequacy is visually represented in the subsequent table.

Table 2. Results of Teacher Questionnaire

NO	STAGES	TEACHERS ACTIVITIES	AVERAGE RESPONSE
1	Structuring the Play Environment	Structuring the play environment according to the center formula	no response
2	SteppingBefore Play	Tells the theme, sub-theme, and topic using the book	reduced or intermittent
		Ask children closed questions related to the topic	reduced or intermittent
		Develop the topic by asking children more difficult closed questions	reduced or intermittent
		Provide opportunities for children to discuss the topic	no response
3	Stepping During Play	Teacher motivates with positive questions	reduced or intermittent
		Teacher uses 5 continuums to stimulate children's metacognition in problem solving (if problems occur)	reduced or intermittent
		Teacher motivates children to work together in groups	reduced or intermittent
4	Stepping After Play	Facilitate the inclusion of additional children in the questioning process directed at the child engaged in the process of recalling.	reduced or intermittent

The findings derived from surveys and questionnaires indicate that educators possess limited comprehension regarding the various stages of the center learning model. Additionally, teachers lack the necessary skills and strategies to effectively address issues encountered by children. Consequently, the development of children's curiosity, as well as their ability to foster an inquisitive mindset and creativity, has not progressed as anticipated. The findings indicate that educators engage in intervention throughout stages 2, 3, and 4. This observation suggests that educators may not sufficiently facilitate problem-solving, foster creativity aligned with individual ideas, and cultivate decision-making skills among children.

2. Overview of Prototype Learning Center Model for Stimulating Children's Metacognition in Kindergarten

The researchers developed an instructional framework, known as the center learning model, with the aim of enhancing children's metacognitive abilities. This model comprises a model book and a teacher's guide, both of which were designed based on the findings of a requirements analysis. The outcomes of implementing the Center Learning Model to enhance students' metacognitive abilities, as indicated by the model's syntax, are presented in the subsequent table:

Table 3. The findings of the Center Learning Model's design

Model Syntax	Scientific Stage	Teacher Activity	Teacher Objectives	Achievement of Basic Competencies
Teacher preparation		The selection of tools or items to be organized within the play area is determined by the teacher.	One potential benefit of utilizing a motivational tool for children is that it facilitates their acquisition of knowledge pertaining to a specific theme.	
Stage 1 **Structuring the play environment**	Observing	The design of the play environment in the central area should incorporate a diverse range of literacy materials, including letters, numbers, and books that promote reading, all of which align with the overarching theme. Prior to the child's arrival, the instructor makes necessary preparations by organizing and arranging the materials and play items in accordance with the predetermined plan and schedule of activities.	Offer opportunity for children to engage in many forms of play and actively observe these different play experiences.	1. Children engage in the act of observing the density of play that has been intentionally organized by the teacher within their own centers. 2. Children have the ability to perceive, audibly perceive, respire, experience tactile sensations, and physically interact with the form of play. 3. At this developmental period, children do not possess the necessary skills to engage with the play instruments that have been organized by the teacher.
Stage 2	Observing,	In this step, the	Facilitate an	Students sit in a

Foothold before play	Inquire	teacher and children sit in a circle, the teacher greets and asks how the children are, takes attendance and asks the children in turn to lead the prayer. - Conveying the theme associated with the child's life, - Read the story according to the theme, - Ask the content of the story to the child, - Linking the content of the story with play activities - Introducing the place and tools of the game - Presenting the rules of the game - Choosing friends and play tools - Explaining how to use the playground equipment, when to start and end and tidy up the playground equipment that has been used.	environment that encourages children to engage in active questioning, responding to inquiries, generating ideas, selecting companions, and selecting play materials.	circle, follow the opening activity by answering questions from the teacher. Children pray before doing the activity. - Children can ask about the theme - The child can answer the teacher's questions about the theme, sub theme, and sub sub theme. - The child can choose a playmate in the group - The child can ask about how to use the playground equipment.
Stage 3 **Footholds during play**	Experiment/seek information, Association or reasoning.	- Controlling children who are playing, - Motivating with positive questions, - Motivating students to learn & work thoroughly, - Motivating for cooperation in completing tasks - Teachers use 5 continuums to stimulate children's metacognition in problem solving.	1. The teacher can control the class with children's play activities. 2. The teacher can facilitate children to experiment or prove cause and effect. 3. Teachers can achieve children's metacognitive outcomes	- Children acquire knowledge while engaging in play activities with the playground equipment. - The youngster engages in play activities, experimenting with various types of toys. - The youngster engages in a discussion and presents the findings of their experiment, subsequently drawing conclusions. - The child

				performs the task.
Stage 4 **Foothold after play**	Report	- Motivate children to tidy up the playground equipment, - Motivate children to identify the game tools when cleaning up - Motivate children to convey things that have been played in the form of stories/recalling, movements, or by showing the results of their work.	- Teachers can instill an attitude of responsibility to children - Can facilitate children to retell their play activities and provide opportunities for children to show their work.	- The child classifies toys by type and then stores them in the toy bin according to their classification. - Places the toy box in the cupboard according to its place - The child retells/recalls, or performs movements, or shows the work of the activities that have been carried out.

The aforementioned learning phases can be implemented across many centers, including the preparation center, beam center, natural material center, and role play center. The play activities are tailored to the specific characteristics of each center, taking into account the Basic Competencies (KD) that need to be completed in a given lesson plan. The author intends to provide a comprehensive description in a guidebook designed specifically for kindergarten teachers. This guidebook aims to support the effective implementation of metacognitive stimulation for children. The guidebook will include four main sections, namely the Preparation Center Learning Guide, Block Center Learning Guide, Natural Material Center Learning Guide, and Role Play Center Learning Guide.

3. An overview of the book validity and practicality of the center learning model for stimulating children's metacognition in kindergarten.

The average validity value of the center learning model's outcomes has been deemed valid as a learning model. This determination is supported by the validation results of expert validators in their respective domains, who have pronounced all components of the instrument preparation as "Valid." The validity of the central learning model for metacognitive stimulation of students is strongly linked to the state-of-the-art model proposed by Joyce et al. (1992). This model outlines five essential components that describe a learning model: syntax, social system, reaction principles, support system, and instructional impact. Additionally, the model emphasizes the accompanying impact, which refers to the outcomes achieved when implementing the central learning model for metacognitive stimulation of students.

The following section will present the outcomes of the validation process, which involved determining the components of the model through scientific learning steps and five continuums in the interaction between teachers and students. Subsequently, the syntax or stages of the center learning model for stimulating children's metacognition will be described. Similar to other forms of learning, the central learning model encompasses various components, including syntax (learning sequence), rules of reaction, social systems, support systems, and associated effects. The use of syntax, reaction principles, and social systems is utilized in the implementation of learning, with the evaluation of learning success focusing on the assessment of the support system and its associated influence.

Table 4. Results of tabulation of all instruments of the Center Learning Model for metacognitive stimulation of students

No	Assessment Indicator	Validator Score		Description
		V1	V2	
1	Center Learning Model Book	3,85	3,73	Valid/Reliable
2	Teacher's Manual	4,00	3,77	Valid/Reliable

3	Teacher response questionnaire to the model	3,84	3,72	Valid/Reliable
4	Teacher observation questionnaire of the model	3,88	3,68	Valid/Reliable
5	Child activity observation instrument	4,00	3,80	Valid/Reliable
6	Weekly learning implementation plan (RPPM)	3,9	3,9	Valid/Reliable
7	Daily learning implementation plan (RPPH)	4,00	3,83	Valid/Reliable
8	Tools and materials sheet	4,00	3,86	Valid/Reliable
Average		3,93	3,78	Valid/Reliable

The practicality of the learning model can be assessed by examining the application of the center learning model. As depicted in Table 5the center learning model was implemented in a restricted experiment (trial I) and achieved a score of 3.55, indicating successful implementation. Based on the initial trial aimed at assessing the teacher's response, there are several technical issues identified by observers that require attention. These issues pertain to enhancing tactics, structures, and processes in the implementation of center-based learning. The implementation of this center model encompasses various aspects, including syntax, social system, principles, reactions, and support systems.

Table 5. Implementation of the Center Learning Model for Metacognitive Stimulation Students in Trial I

In trial I, the meeting was conducted-	**Implementation of Center Learning Model Components**				
	Syntax	**Social System**	**Reaction Principle**	**Support System**	**Averages**
1	3,72	3,65	3,54	3,6	3,63
2	3,65	3,72	3,3	3,2	3,47
3	3,60	3,75	3,39	3,54	3,57
Averages	3,65	3,70	3,41	3,44	3,55

The outcomes of enhancements observed in the initial pilot study were then incorporated into the broader-scale investigation. The center learning model was evaluated during the extensive trial (II) as indicated in table 6, resulting in a score of 3.7, which is classified as "Very Good." The data obtained from this observation indicates a notable rise in the adoption of the center learning model between trial I and trial II. Additionally, the management of the model was deemed to be highly effective, as evidenced by the rating of "Very Good" or practical.

Table 6. Implementation of the Learning Center Model for Metacognitive Stimulation of Students in Trial II

In trial II, the meeting was conducted-	**Implementation of Center Learning Model Components**				
	Syntax	**Social System**	**Reaction Principle**	**Support System**	**Averages**
1	3,76	3,71	3,65	3,86	3,74
2	3,76	3,72	3,78	3,33	3,64
3	3,81	3,78	3,58	3,63	3,7
Averages	3,77	3,73	3,67	3,60	3,7

The study examined the efficacy of implementing the center learning model as a means to enhance students' metacognitive abilities. The analysis of 7 teacher responses, as presented in Table 7, revealed that the center learning model was successfully implemented, achieving an average score of 93.71%. Furthermore, the majority of teachers reported a favorable response, categorizing the implementation as either "very well implemented" or "practical". The qualitative application of the model in face-to-face activities is conducted as a means of supporting theoretical frameworks, with a focus on each aspect of the center learning model being applied.

Table 7. Implementation of Center Learning Model based on Teacher Response

No	**Assessment Indicators of the Center Learning Model**	**Teacher's Response (V_1-V_7)**	**Description**

Syntax Model			
1	Scientific Stages of Observing	3,8	Excellent
2	Scientific Stages Questioning	3,6	Excellent
3	Scientific stages Experimentation / finding information, association or reasoning	3,8	Excellent
4	Scientific Stages Reporting	3,8	Excellent
Social System			
5	Facilitate children to be able to show activities that are exploratory and investigative in nature.	3,8	Excellent
6	Multi-directional interaction (communication) between teachers and teachers, children with teachers, and children with other students.	3,8	Excellent
7	Children develop a creative attitude in problem solving using a 5 continuum approach.	3,8	Excellent
8	Children can show initiative in choosing games and working together in their play group.	3,8	Excellent
9	Developing children's ability to understand simple problems and to complete tasks despite difficulties	3,8	Excellent
10	Facilitate children to be able to plan activities that will be carried out.	3,8	Excellent
Reaction Principle			
11	The teacher communicates well in a multidirectional manner using structured language and SPOK patterns	3,2	Good
12	The teacher is able to invite children to use structured language or SPOK patterns	3,8	Excellent
13	Teacher as a facilitator to develop creative attitude in problem solving by using 5 continuum approach	3,8	Excellent
14	Teachers provide and manage learning tools and materials in their centers that can support the smooth learning process.	3,2	Good
15	Prioritize students' ability in simple problem solving	3,8	Excellent
16	Teachers do scaffolding when facilitating children in constructing their knowledge	3,8	Excellent
17	Teachers are able to collaborate with other center teachers in preparing learning tools and discussing students' scores.	3,8	Excellent
Support System			
18	Learning Tools	3,2	Good
19	Learning Aids	3,8	Excellent
Instructional and accompanying impacts			
20	For students	3,4	Excellent
21	For the teacher	3,8	Excellent
Average		3,68	Excellent
Percentage		93,71%	**Positive**

Similarly, the implementation of the model based on students' activities in table7 shows that during the learning process students are classified as active in carrying out learning activities that are able to stimulate children's metacognition with a high frequency of occurrence at all stages of learning.

The effectiveness of the center learning model for students' metacognition can be seen based on the instructional impact and the accompanying impact. Based on the results of the effectiveness data analysis by implementing the center learning model in table 8, it is found that the center learning model for metacognition is able to increase students' learning activities by 0.71 (N-Gain) with a "high" improvement category. Based on this, the center learning model developed is a pattern created in the form of structured activities centered on a playground that aims to build all the potential of students to achieve high improvement.

Table 8. Improvement of Students' Metacognitive through Center Learning

No	**Students' Name**	**Metacognitive**		**Post-Pre**	**100-Pre**	**Gain**
		Pre	Post			

1	X1	70	91	21	30	0,70
2	X2	60	85	25	40	0,63
3	X3	64	84	20	36	0,56
4	X4	77	97	20	23	0,87
5	X5	66	86	20	34	0,59
6	X6	70	90	20	30	0,67
7	X7	75	97	22	25	0,88
8	X8	40	82	42	60	0,70
9	X9	68	90	22	32	0,69
10	X10	72	94	22	28	0,79
11	X11	55	88	33	45	0,73
12	X12	80	95	15	20	0,75
13	X13	74	92	18	26	0,69
14	X14	72	92	20	28	0,71
15	X15	60	89	29	40	0,73
Total		1003	1352	349	497	10,67
Average		66,86	90,13	23,26	33,13	0,71

The educational influence on the center learning paradigm has the potential to enhance students' metacognitive capacities, such as 1) Children may exhibit behavioral tendencies indicative of an inquisitive disposition through the cultivation of a questioning habit. 2) Children may exhibit behavior indicative of a creative disposition in various activities, including both play and work. 3) Children possess the capacity to acquire knowledge and engage in problem-solving activities, demonstrating their ability to effectively address modest challenges encountered in their daily lives. They exhibit adaptability and adhere to socially accepted norms while employing their acquired knowledge and experiences to navigate novel situations. 4) It has been observed that children possess the cognitive ability to engage in logical thinking, enabling them to identify, comprehend, and communicate the attributes and functions of objects in their immediate environment. 5) It has been observed that children possess the cognitive ability to engage in symbolic thinking, as evidenced by their capacity to identify, articulate, and employ numerical symbols ranging from 1 to 10, demonstrate proficiency in recognizing the alphabet, and depict diverse objects through pictorial representations. 6) It has been observed that children possess the ability to identify and articulate their needs, desires, and areas of personal interest in a manner that is considered suitable and socially acceptable. 7) Educators possess the ability to comprehend and implement the sequential phases of the center learning model in accordance with its syntactical structure. 8) Educators has the ability to effectively foster children's metacognitive development by employing scientifically validated instructional strategies. 9) Educators have the capacity to offer students with opportunity to address their challenges in accordance with stage 5 of the continuum. 10) Educators have the opportunity to enhance their questioning techniques by employing the prevalent question classifications within the framework of the Socratic Method.

CONCLUSION

This study aims to design a center learning model for children's metacognitive stimulation by providing an overview of the necessary requirements. The model will consist of four centers, namely the preparation center, beam center, natural materials center, and role play center. These centers will be structured to facilitate children's metacognitive activities through specific interventions, including the organization of the play environment, establishing a foothold before, during, and after play. The validity of the model book, guidebook, and instruments is found to be moderately valid, encompassing the valid category. This indicates that their utilization is feasible. Additionally, the level of practicality is demonstrated by the successful implementation observed in the first and second trials. The teacher's response aligns with the practical category, while the students' engagement during the process of stimulating children's metacognition is classified as active. The efficacy of the model demonstrates that the learner-centered model is a viable approach for instructional purposes, as it has the potential to enhance students' engagement in the learning process. Furthermore, the effectiveness of children's metacognitive development can be further optimized through the implementation of the learner-centered model, resulting in a more substantial improvement in line with the syntactical framework of this instructional approach.

Consent

As per international standards or university standards, respondents' written consent has been collected and preserved by the author(s).

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