

Research Article

The Impact of Activity Book Based on Social Emotional Learning to Improve Teachers' Pedagogical Skills and Students' Numeracy Abilities

Ida Dwijayanti^{1*}, Aryo Andri Nugroho², Rizky Esti Utami¹, and Ismatul Khasanah²

¹Mathematic Education, Universitas PGRI Semarang, Indonesia

²Early Childhood Education, Universitas PGRI Semarang, Indonesia

ORCID

Ida Dwijayanti: <https://orcid.org/0000-0002-4244-4457>

Abstract.

Social emotional learning plays an important role in transformative education, especially in improving academic achievement, including numeracy skills. To understand its impact, further exploration is needed, especially in several PAUD POS. This study aimed to assess the impact of using activity books based on social emotional learning on POS PAUD learning. The development procedure used Borg and Gall's theory. The trials were conducted in three PAUD POS centers—Tunas Ceria, Tunas Bahagia, and Perintis—showed a significant increase in students' social emotional skills, particularly in cooperative behavior, tolerant attitudes, and emotional expression. The increase was seen in activity books that fostered positive interactions. The pedagogical competence of teachers increased after using the activity books. Therefore, the use of activity books based on social emotional learning can be an innovative solution in developing social emotional skills in PAUD.

Keywords: activity book, teacher competency, numeracy, social emotional learning

1. Introduction

The Programme for International Students Assessment (PISA) in 2022 showed that as many as 25% of male students and 30% of female students in Indonesia admitted to having experienced bullying. The number of students who were victims of bullying is far above the average for OECD member countries, which is only 22.7% [1]. The Ministry of Education and Culture has issued various policies intended to address this problem, one of which is the determination of the Pancasila student profile as the vision of Indonesian education in 2035 [2]. The practice of the Pancasila points in building children's characteristics is an effort to prevent a lost generation through the application of examples and habits [3]. Law No. 20 of 2003 Chapter 1 Article 14 mandates that Early

Corresponding Author: Ida

Dwijayanti; email:

idadwijayanti@upgris.ac.id

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Childhood Education is a development effort aimed at children from birth to six years of age by providing educational stimulation to help physical and spiritual growth and development so that children are ready to enter further education [4]. In addition, the Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 137 of 2014 Article 10 states that there are six aspects that need to be developed in early childhood, namely moral aspects and religious values, cognitive aspects, physical motor aspects, language aspects, social emotional aspects and art aspects [5]. The Ministry of Education and Culture has determined several themes that need to be implemented as an effort to ensure that the project to be carried out is in line with building the Pancasila Student Profile in early childhood [6]. In addition, another thing that can be done to overcome the problem of bullying in schools is by applying Social Emotional Learning.

Social emotional learning plays a very important role in liberating education because it contains skills that students must have to survive problems, the ability to find solutions and also how to be a good person. Social emotional learning contributes to increased academic achievement, including numeracy skills [7,8]. Numeracy also teaches simple problem solving and learning estimation [9]. In order to support this, it is necessary to have educators who have high qualifications, competence and dedication in carrying out their professional duties [10]. If educators are not prepared enough, it will have an impact on misperceptions of the process of capturing information obtained by students [11].

The initial study related to the competence of PAUD teachers has been conducted by researchers in collaboration with Division 2 of the Semarang City PKK TP which oversees all PAUD Posts in the Semarang City area. The study involved 88 educators from the total number of PAUD Post educators in the Semarang City. The following is the data from the results of the researcher's initial study.

TABLE 1: Results of the initial study of PAUD teacher competencies.

Assessment criteria	Amount	Percentage
High Pedagogy-High Professional	35	39,8%
High Pedagogy-Low Professional	10	11,4%
Low Pedagogy-High Professional	11	12,5%
Low Pedagogy-Low Professional	32	36,3%
Amount	88	100%

Based on the table, efforts are needed to improve the competence of POS PAUD teachers which have an impact on the growth and development of the PAUD students'

Pancasila student profile. Various efforts have been made to develop the character of PAUD students, including the use of regional songs [12], the use of animated videos [13] various collaborative activities [14] and the creation of humanistic-based learning designs to improve student character [15,16]. Meanwhile, various efforts that have been made to improve teacher competence have been carried out by various researchers, including Dwijayanti et al. who developed a teaching module based on student errors [11], Mentoring and training in making media [17] and developing media or learning assessments [18, 19], including developing activity books for PAUD based on social emotional learning [20]. However, information mining related to the development of activity books based on social emotional learning needs to be seen in order to see the impact of its implementation in several POS PAUD to realize the theme that has been set by the Ministry in realizing the profile of Pancasila students integrated with teaching media and evaluation tools. The novelty of the research can be seen from the main target of the research, namely the development of POS PAUD teaching human resources. In addition, the taking of content originating from the PAUD education participant environment as shown in the activity book image is a novelty in the preparation of teaching resources. Based on the facts above, the purpose of this study is to see the impact of using activity books based on social emotional learning on POS PAUD learning.

2. Method

The research is a further development research with a focus on the impact of using activity books based on social emotional learning which is expected to improve the pedagogical and professional competence of PAUD teachers. The development procedure uses the theory of Borg and Gall, namely (a) analysis of the product to be developed [12]; (b) developing the initial product; (c) expert validation and revision; (d) readability test; (e) small-scale field trials and revisions. This research only focuses on Expert Validation and Revision which includes Media Validation, Material Validation, and Readability Test and small-scale Field Trial. Media Validation consists of general aspects and learning presentation aspects. Expert Validation of the Main Material which includes general aspects, content aspects, usability aspects and graphic aspects is included in the readability test.

3. Result and Discussion

3.1. Expert Validation and Revision

The initial draft of the activity book development results was then validated by material experts and media experts. The initial expert plan was presented by practitioners and academics. From practitioners (potential users) were the administrators of Pokja 2 PKK Semarang City and representatives of POS PAUD teachers in Semarang City. While academics were colleagues of lecturers at UNS. To increase validity, research partners (potential users) offered to add members of Pokja 2 PKK Semarang City and 2 POS PAUD teachers. So the total validators were 6 people from Practitioners. The indicators that were validated included

3.1.1. Media Expert Validation

General Aspects (This activity book media is an interesting media development, This media is designed to be interesting and easy to understand, This media can improve students' critical thinking, This media can have advantages compared to conventional media), Learning Presentation Aspects (The title and front cover already use the material to be studied, The use of media is easy to understand, This activity book contains activities to recognize numeracy, This activity book contains activities to recognize various types of emotions, This activity book contains activities for character building, This activity book makes it easier for teachers to plan learning, This activity book makes it easier for teachers to implement learning, This activity book makes it easier for teachers to develop learning content/materials, The systematic presentation of learning in the media is presented sequentially).

3.1.2. Material Expert Validation

General Aspects (This activity book media is in accordance with the existing syllabus, This media is designed to be attractive, concise, and clear, This media can be useful for all who receive the material, This media is a new innovation in learning media), Material Substance Aspects (This activity book is in accordance with the introduction of numeracy, The use of terms is in accordance with the level of knowledge of students, Topics in the material are delivered clearly, The order of the material is arranged systematically),

Learning Aspects (The use of this activity book facilitates the learning process, The use of this activity book makes it easier for teachers to deliver material, The material presented is in accordance with learning objectives, This activity book can facilitate students to learn independently, Example questions are in accordance with learning objectives and stimulate students to think critically, This activity book can help students in learning, With the teacher’s explanation, students better understand the material presented), Benefit Aspects (Can be used as an alternative learning, Able to help make it easier for students, Provides an interesting learning atmosphere to eliminate learning boredom, This learning media can facilitate students to learn independently, This media can be reused or to develop other learning media).

The validation results generally stated that the activity book developed had met the standards of teaching materials both in terms of general aspects, learning presentation aspects, material substance, learning aspects and usefulness aspects. This is in line with Nugroho that aspects of teaching materials that are packaged innovatively and validly will help students in learning [21]. In addition, Wulantina conveyed that devices that have been said to be feasible and valid can be implemented in class [22]. Specifically, researchers highlighted several indicators that have high relevance to the research title. Among them are the following.

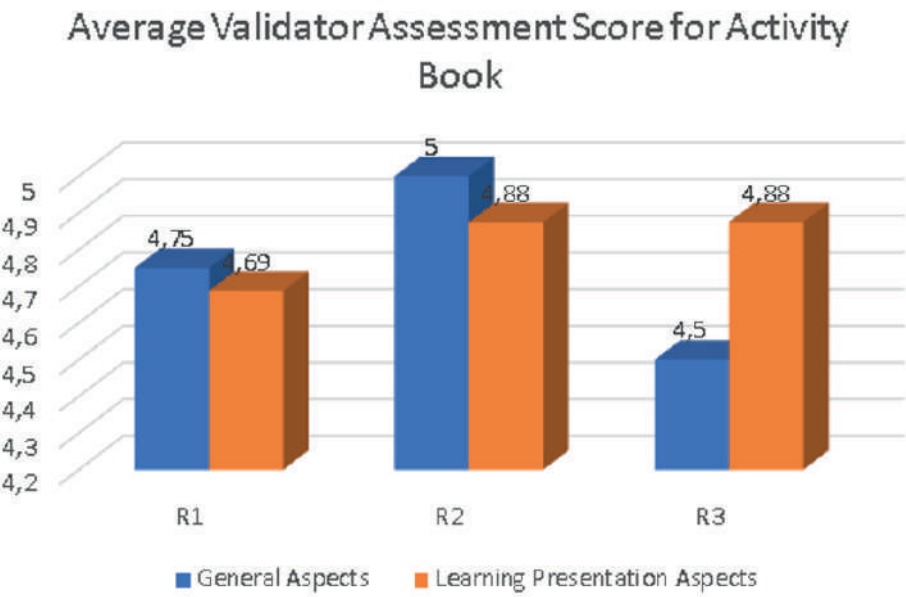


Figure 1: Distribution of Media Validator Scores.

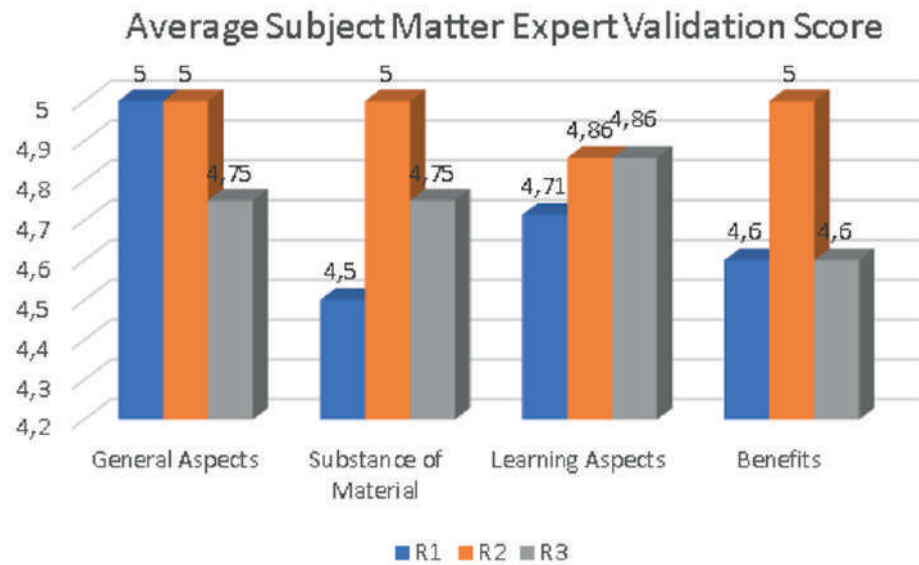


Figure 2: Material Expert Validation Score.

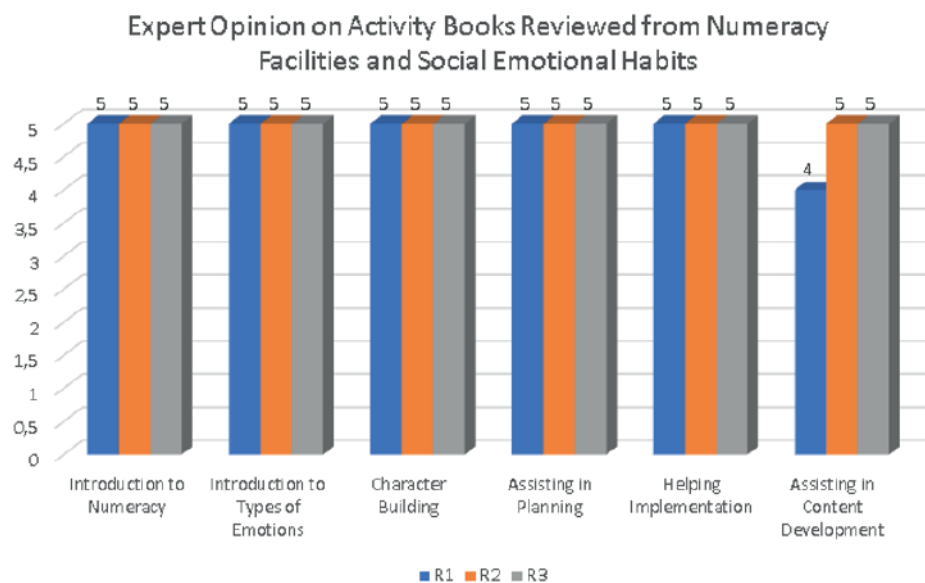


Figure 3: Numeracy Validation Score and SE.

3.2. Readability Test

The readability test was conducted with respondents of POS PAUD teachers with the following tested indicators.

Language Suitability Aspect (The use of language in this media is in accordance with the intellectual development of students, The use of language in this media is in accordance with the emotional level of students, The language used in this media is easy for students to understand).

Graphic Suitability Aspect (The appearance of this activity book media is attractive, The appearance of this activity book media is suitable for introducing numeracy, Does not use too many combinations of types and letters, Colors, elements, layout are harmonious and clarify their functions).

The results of the readability test are as follows.

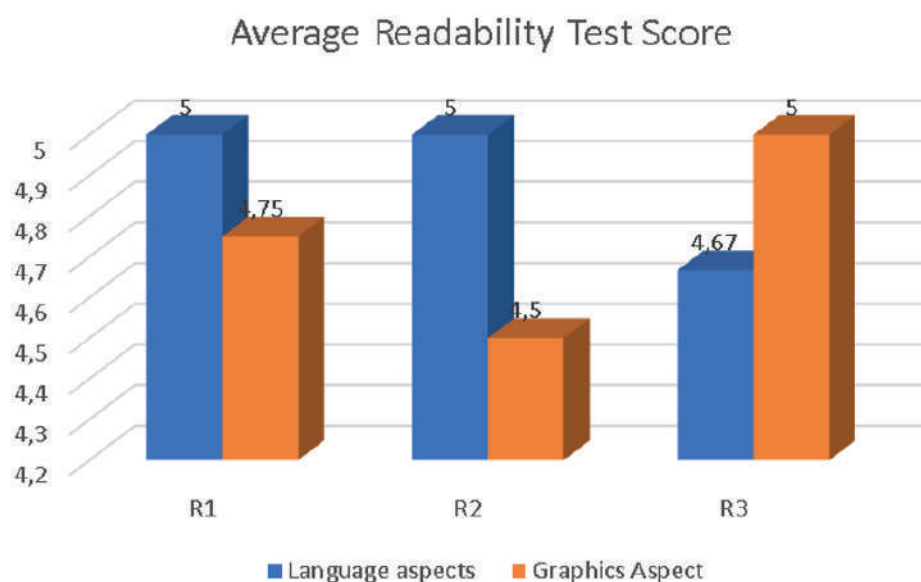


Figure 4: Readability test scores.

Based on the results of the readability test, it was concluded that from the aspects of language and graphic display, the activity book developed is suitable for use. This is in accordance with Utami and Nugroho who stated that language that is easy to understand and does not contain double meanings in a media will make it easier for students to learn [23,24].

3.3. Trial at 3 PAUD POS in Semarang City

3.3.1. Implementation of Trial at POS PAUD Tunas Ceria

POS PAUD Tunas Ceria has NPSN 69914673, located at Jl. Tirtoyoso 3 No.6, Rejosari Village, East Semarang District, Semarang City. POS Paud Tunas Ceria has 20 students. In the Trial at POS PAUD Tunas Ceria, several activity themes were chosen, namely AKU: introducing the number of body parts, their uses and how to care for them and the activity theme TIME: introducing time. The following is an explanation of each meeting.

a) Learning with the theme of ME

The learning activities carried out are: (a) Before entering the classroom, the teacher invites the children to line up outside; (b) the teacher and students sing one of the national songs; (c) the teacher and students sing the POS PAUD Tunas CERIA jingle; (d) the teacher and students pray together; (e) the teacher and students enter the classroom; (f) the teacher conditions the class; (g) the teacher conveys today's learning objectives; (h) the teacher begins to orient students to the AKU material by recognizing identity and body parts; (i) the teacher distributes books and LKPD to students and provides direction; (j) with guidance, students learn body parts in the activity book and carry out activities through LKPD, namely sticking pictures of body parts in their places; (k) students show their work results. The following is a description of the learning situation that took place.



Figure 5: Student Activities Recognizing body parts and showing performance results.

b) Learning with the theme TIME

The learning activities carried out are: (a) Before entering the classroom, the teacher invites the children to line up outside; (b) the teacher and students sing one of the national songs; (c) the teacher and students sing the POS PAUD Tunas CERIA jingle; (d) the teacher and students pray together; (e) the teacher and students enter the classroom; (f) the teacher conditions the class; (g) the teacher conveys today's learning objectives; (h) the teacher begins to orient students to the TIME material by asking students to tell about the time they sleep, study, take an afternoon shower or wake up; (i) the teacher distributes books and DIY clock making to students and provides directions; (j) with guidance, students learn about body parts in the activity book and do the DIY clock making activity; (k) students show off their work. The following is a description of the learning situation that took place.



Figure 6: Student and parent activities making hours and showing performance results.

3.3.2. Implementation of Trial at POS PAUD Tunas Bahagia

POS PAUD Tunas Bahagia has NPSN 70032892, located at Jl. Kebonharjo, RT.04/RW.09, Tj. Mas, North Semarang District, Semarang City, Central Java 50174. POS Paud Tunas Bahagia has 43 students. In the Trial at POS PAUD Tunas Bahagia, several activity themes were chosen, namely AKU: introducing the number of body parts, their uses and how to care for them and the activity theme *Berbain Bersama*: coloring pictures with friends. The following is an explanation of each meeting.

a) Learning with the theme of ME

The learning activities carried out are: (a) Before entering the classroom, the teacher invites the children to line up outside; (b) the teacher and students sing one of the national songs together; (c) the teacher and students pray together; (d) the teacher and students enter the classroom; (e) the teacher conditions the class; (f) the teacher conveys today's learning objectives; (g) the teacher begins to orient students to the AKU material by recognizing identity and body parts; (h) the teacher distributes books and LKPD to students and provides direction; (i) with guidance, students learn body parts in the activity book and carry out activities through LKPD, namely sticking pictures of body parts in their places; (j) students show their work results. The following is a description of the learning situation that took place.

b) Learning with the theme PLAYING TOGETHER

The learning activities carried out are: (a) Before entering the classroom, the teacher invites the children to line up outside; (b) the teacher and students sing one of the national songs; (c) the teacher and students pray together; (d) the teacher and students enter the classroom; (e) the teacher conditions the class; (f) the teacher conveys today's learning objectives; (g) the teacher begins to orient students to the AKU material by recognizing their identity and body parts; (u) they sleep, study, take an afternoon shower or wake up; (i) the teacher distributes books and coloring media; (j) with guidance,



Figure 7: Student Activities Recognizing body parts and showing performance results.

students study body parts in the activity book and do coloring activities; (k) students show off their work. The following is a description of the learning situation that took place.



Figure 8: Joint coloring activity and showing performance results

3.3.3. Implementation of Trial at POS PAUD Perintis

POS PAUD Perintis has NPSN 69914687, located at Jl. Ciliwung II RT 06 RW 05, MLATIHARJO Village, East Semarang District, Semarang City. POS Paud Perintis has 30 students. In the Trial at POS PAUD Perintis, the theme of the activity was GARDENING: coloring pictures with friends. The learning activities carried out were (a) The teacher starts the activity by teaching students to enter the classroom together through a train game; (b) In the classroom, the teacher and students perform dance movements together accompanied by children's songs with cheerful music; (c) the teacher asks students to gather; (d) The teacher and students pray together; (e) the teacher conditions the class; (f) the teacher conveys today's learning objectives; (g) the teacher begins to

orient students to the AKU material by recognizing identity and body parts; (u) they sleep, study, take an afternoon shower or wake up; (i) the teacher distributes books and coloring media; (j) with guidance, students study body parts in activity books and do coloring activities; (k) students show off their work. The following is a description of the learning situation that is taking place.



Figure 9: Joint tree planting activity and showing performance results

3.4. Improving the Competency of POS PAUD Teachers

Teacher competency measured in the study specifically on teacher pedagogical competency. Referring to the indicators and levels of teacher competency reflection of the Ministry of Education and Culture, data obtained through self-reflection before use and after 1 month of use (with 2 meetings each week, the total meetings are 8 times) makes the teacher's book: activity book based on social emotional learning, the data obtained (scale 1 to 5) as follows.

3.5. Development of Students' Social Emotional Skills

Referring to the indicators of social emotional skills issued by the Ministry of National Education (Kemendiknas, 2010: 46-47), this study highlights 3 development achievements, namely: (a) Being cooperative with friends; (b) Showing tolerance; and (c) Expressing emotions that are appropriate to existing conditions. Data obtained from interviews with POS PAUD teachers regarding the achievement of students' social emotional skills development after using learning that refers to the teacher's book: activity book based on social emotional learning. As follows.

TABLE 2: Data on Changes in Competency of POS PAUD Teachers.

No	Indicator	Teacher 1		Teacher 2		Teacher 3	
		Pra	End	Pra	End	Pra	End
1	Safe and Comfortable Learning Environment for Students						
	Difficult student management	3	4	3	4	4	5
	Classroom management to achieve student-centered learning	3	5	3	4	4	5
	Students' sense of security and comfort in learning	4	4	4	4	4	4
2	Effective student-centered learning						
	Structured and sequential learning design to achieve goals	3	5	3	4	4	5
	Learning design that is relevant to conditions around the school that involves students	4	5	4	5	4	5
	Selection and use of learning resources that are appropriate to student objectives	3	5	3	5	3	5
	Learning instructions that foster students' interest and critical reasoning	3	4	3	4	3	4
	Adaptive use of ICT/teaching media in learning	3	5	4	5	4	5
3	Student-centered feedback assessment and reporting						
	Student-centered assessment planning	3	4	3	5	3	5
	Implementation of student-centered assessment	3	4	3	5	3	5
	Feedback to students regarding learning	4	4	4	5	4	5
	Preparation of learning achievement reports	4	4	4	4	4	4
	Communication of learning achievement reports	4	4	4	4	4	4

3.5.1. Social Emotional Skills of POS PAUD Tunas Ceria Students

Learning achievement at POS PAUD Tunas Ceria shows data that from 16 students who on average attend learning, there is an increase to 85% of students who begin to show the following achievements: (1) Being cooperative with friends: students show an increase in their ability to cooperate with friends and parents when playing together. This is possible because the activities designed in the book facilitate the development of cooperation skills, such as coloring activities with limited colored markers, gardening activities carried out in pairs, activities making clocks from flannel that encourage

cooperation between parents and students.; (b) Showing tolerance. This is possible because the design of the activities designed is able to create moments for students to become accustomed to sharing with friends by lending something they have.; and (c) Expressing emotions that are in accordance with existing conditions which are shown by a happy and enthusiastic attitude when doing tasks and patiently waiting for their turn. The teacher's book provides various ideas in planning activities in student learning, so that teachers are helped to make plans. In addition, the messages for teachers in the book help during the implementation of learning.

3.5.2. Social Emotional Skills of POS PAUD Tunas Bahagia Students

Learning achievement at POS PAUD Tunas Bahagia shows data that from 24 students who on average attend learning, there is an increase to 72% of students who begin to show the following achievements: (1) Being cooperative with friends: students show an increase in their ability to cooperate with friends and parents when playing together. This is possible because the activities designed in the book facilitate the development of cooperation skills, such as coloring activities with limited colored markers, gardening activities carried out in pairs, activities making clocks from flannel that encourage cooperation between parents and students; (b) Showing tolerance. This is possible because the design of the activities designed is able to create moments for students to become accustomed to sharing with friends by lending something they have; and (c) Expressing emotions that are in accordance with existing conditions which are shown by a happy and enthusiastic attitude when doing tasks and patiently waiting for their turn. The teacher's book provides various ideas in planning activities in student learning, so that teachers are helped to make plans. In addition, the messages for teachers in the book help during the implementation of learning.

3.5.3. Social Emotional Skills of POS PAUD Perintis Students

Learning achievement at POS PAUD Tunas Ceria shows data that from 30 students who are on average present in learning, there is an increase to 70% of students who begin to show the following achievements: (1) Being cooperative with friends: students show an increase in their ability to cooperate with friends and parents when playing together. This is possible because the activities designed in the book facilitate the development of cooperation skills, such as coloring activities with limited colored markers, gardening

activities carried out in pairs, activities making clocks from flannel that encourage cooperation between parents and students; (b) Showing tolerance. This is possible because the design of the activities designed is able to create moments for students to become accustomed to sharing with friends by lending something they have; and (c) Expressing emotions that are in accordance with existing conditions which are shown by a happy and enthusiastic attitude when doing tasks and patiently waiting for their turn. The teacher's book provides various ideas in planning activities in student learning, so that teachers are helped to make plans. In addition, the messages for teachers in the book help during the implementation of learning.

Based on social emotional learning in several PAUD POS, it is shown that students can be cooperative with friends. This shows that positive interactions in the context of group activities can improve children's social skills [7,25]. Then having a tolerant attitude is an important component in social emotional development, because it helps children learn to appreciate differences and work together in groups and supports cooperation between children [25,26]. In addition, the teacher's book in the form of an activity book can provide various ideas in planning learning activities, which helps teachers in facilitating the development of positive emotions in children [26]. This also shows that children who are able to manage their emotions tend to be more successful in social interactions [8]. This indicates that children's ability to manage their emotions is correlated with success in social interactions [27].

4. Conclusion

The implementation of the trial in three POS PAUD (Tunas Ceria, Tunas Bahagia, and Perintis) showed a significant increase in students' social emotional skills, including the ability to cooperate, be tolerant, and express emotions. This increase was supported by the activities designed in the book, which facilitated positive interactions between students and parents. The pedagogical competence of teachers also increased after using the activity book, indicating that this book is not only beneficial for students but also improves the way teachers teach.

Learning based on group activities shows a positive impact on the development of children's social emotional skills. The activities carried out create moments of sharing and tolerance, especially for children's social development. Thus, the use of this activity book can be an innovative solution in the development of social emotional skills in PAUD.

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