THE INFLUENCE OF COLLABORATIVE LEARNING AND INTERPERSONAL INTELLIGENCE ON ELEMENTARY SCHOOL STUDENTS' LEARNING OUTCOME IN CIVIC EDUCATION IN MUNA REGENCY

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Abstract

The primary objectives of this study was: (1) An investigation into the disparities in Civics Education learning outcomes among students exposed to Collaborative Learning methods, specifically comparing the efficacy of the Think Pair Aloud Problem Solving (TAPPS) technique versus the Case Study technique. (2) An in-depth analysis aimed at discerning the intricate interplay between Collaborative Learning methodologies and the students' Interpersonal Intelligence, dissecting its profound influence on the Civics Education learning outcomes. (3) A meticulous scrutiny of the variances in Civics Education attainment between students engaged in Collaborative Learning through the Think Aloud Pair Problem Solving (TAPPS) technique and those employing the Case Study approach, especially within cohorts exhibiting high levels of Interpersonal Intelligence. (4) A comprehensive analysis of the differences in Civics Education achievement among students participating in Collaborative Learning using the Think Aloud Pair Problem Solving (TAPPS) technique compared to the Case Study method within groups demonstrating low levels of Interpersonal Intelligence. This research employed a quasi-experimental method. The research design used was a treatment by level 2 x 2 design, where each independent variable was classified into 2 groups: the treatment independent variable was classified into 2 collaborative learning models (A), namely the Collaborative Learning technique TAPPS (A_1) and the Case Study technique (A_2). Meanwhile, the moderator variable was classified into 2 levels, students with Interpersonal Intelligence (B): high Interpersonal Intelligence (B_1) and low Interpersonal Intelligence (B_2). The dependent variable in this study was the Civics Education learning outcomes of 5th-grade elementary school students. The population in this study comprised all elementary school students in Muna Regency, while the sample consisted of 2 randomly selected elementary schools. Hypothesis testing was conducted using ANOVA. The conclusions drawn from this research were: (1) The Civics Education learning outcomes of students taught with the Collaborative Learning model employing the TAPPS technique were higher than those of students taught with the Collaborative Learning model using the Case Study technique; (2) There was an interaction effect between the Collaborative Learning models (TAPPS technique and Case Study technique) and Interpersonal Intelligence (high and low) on students' Civics Education learning outcomes; (3) The Civics Education learning outcomes of students taught with the Collaborative Learning model using the TAPPS technique were higher than those of students taught with the Collaborative Learning model employing the Case Study technique among the group possessing high Interpersonal Intelligence; and (4) The Civics Education learning outcomes of students taught with the Collaborative Learning model using the TAPPS technique were lower than those of students taught with the Collaborative Learning model employing the Case Study technique among the group possessing low Interpersonal Intelligence.

Keywords: Interaction Influence, Collaborative Learning Think Aloud Pair Problem Solving (TAPPS), Case Study, Interpersonal Intelligence, Civics Education Learning Outcome.

1. INTRODUCTION

Essentially, Elementary School (SD) is an educational institution that carries through a six-year study program for children aged 6-12 years old. The primary educational objective of elementary school is to equip the students with basic knowledge, skills, and attitudes which considered suitable with their growth stage, while preparing them for the next educational levels.

Elementary School implementation of learning is distinctive, if it is compared to the Secondary School. 1st, 2nd, and 3rd grade as a lower level, differs from the higher level, 4th, 5th, and 6th. The lower grades using the Expository learning method, the higher grades implementing a Heuristical learning strategy. As per the learning strategy and method, the teacher is the center of the learning process for the lower grades, which being the complete opposite for the higher grades.

Civics Education being one of the subjects taught in the Elementary School. Elementary School's Civics Education teaches about life around the student's surroundings. Civics Education subject teaches life principal with high cultural value, character, and positive personality. Cogan (Winarno, 2014) divides Civics Education into two terms: civic education and citizenship education or education for citizenship. The difference between those terms being, citizenship education is a process of education for the young citizen to understand their rights, roles, and responsibilities as a citizen. On the other side, civics education is a citizenship education which taught by school as an institution (Kerr, 1999).

The importance of Civics Education subject for student, the subject itself demanded to always change in a better way. This changes can be achieved with facilitating the student, from the teacher centered approach to the student centered approach. With student centered approach, students can be more interactive as the teacher played the facilitator role. Including education that previously focused solely on memorizing facts will transition towards discovering new information and knowledge concepts, as well as exercises shifting towards communication, collaboration, and expression (Arends, 2014). Furthermore, to enhance students' interpersonal intelligence, educators must update more interactive teaching models to encourage students to engage with both their teachers and peers (Rivai et al., 2020).

The ideal approach for Civic Education (PPKN) learning in higher-grade students (grades 4, 5, and 6) is employing a student-centered approach. However, based on observations conducted in several primary schools within Muna Regency, Sulawesi Tenggara, Indonesia, it was observed that, among the four elementary schools observed in Muna Regency (specifically within Kota Raha), namely SDN 1 Raha, SDN 2 Raha, SDN 7 Raha, and SDN 13 Raha, all implemented a teacher-centered approach across all levels, from lower grades (grades 1, 2, and 3) to higher grades (grades 4, 5, and 6). Despite being situated in an urban area that is expected to be updated with the latest educational advancements, these schools have not adopted contemporary educational demands. The current Indonesian curriculum emphasizes the use of Problem-Based Learning (PBL) and Project-Based Learning (PjBL), necessitating a student-centered approach that aligns with the nation's present conditions, which these schools have yet to embrace.

As a consequence of employing a teacher-centered approach to education, the academic development of elementary school students in Muna Regency has been stunted, particularly in the realm of collaborative skills. Observations conducted among students in the observed elementary schools unveiled that students remained mostly passive, merely listening to the teacher's explanations during lessons. A few students occasionally posed questions to the teacher, but only one or two, while the majority remained passive listeners. This teacher-centered instructional method led to student boredom and a sense of monotony during learning sessions. Students struggled to grasp the information presented by their teachers, and there was a lack of accustomed

collaborative work or discussions among students. Empathy towards their peers was lacking, and when faced with problems, students tended to work individually, neglecting collaborative efforts. Furthermore, exacerbated by the impact of technology on elementary school students, frequent engagement in online gaming led to decreased physical health and a decline in social interaction among children (Harahap & Ramadan, 2021).

Based on the documented data of the 2020/2021 academic year regarding the Civics Education learning outcomes of 5th-grade students in observed schools, specific trends emerged. In SD Negeri 1 Raha, comprising 31 students, the class averaged a score of 74.5, with the highest score at 88, the lowest at 64. Among the students, 10 (31%) did not meet the passing criteria, while 21 (69%) met the criteria. Similarly, in SD Negeri 2 Raha, with the same number of students, the class achieved an average score of 74.96, the highest score being 85, and the lowest at 66. Here, 21 students (69%) met the passing criteria, whereas 10 (31%) did not. SD Negeri 7 Raha, encompassing 30 students, attained an average score of 73.96, with the highest individual score at 86 and the lowest at 61. Among the students, 19 (67%) met the passing criteria, while 11 (33%) did not. Lastly, in SD Negeri 13 Raha, including 32 students, the class achieved an average score of 74.09, with the highest score at 88 and the lowest at 63. Here, 22 students (68%) met the passing criteria, and 10 (32%) did not.

The data shows that the 5th-grade students' Civics Education learning outcomes reveals a concerning trend wherein the percentage of students who did not meet the passing criteria exceeds 30%. This scene is alarming because the PPKN subject aims to instill positive character traits and values aligned with Pancasila principles. A failure rate of over 30% at this level raises significant concerns, as it directly impacts the practical application of these character traits in daily life. Continuation of this trend could potentially lead to the erosion of the younger generation's character and moral fabric in the future. Failure to address this issue promptly might result in a deterioration of the moral compass and values not only within Muna Regency but also across Indonesia as a whole. Immediate intervention is crucial to prevent a potential decline in the character and morality of future generations.

To overcome the low result of Civics Education learning, we suggest taking a different learning model, Collaborative Learning. Collaborative Learning is a method where teachers and students cooperates as much as possible to seek or even create with the purpose of enriching and broadening knowledge, this aims to build understandings, solutions, and creates product (Smith & Macgregor, 1992).

Collaborative Learning implementation in education was shown by the previous researchers to be give out good results. A successful Collaborative Learning positively influenced the student's openness towards diversity, regardless the characteristics or individual background, Collaborative Learning enhance the student's interaction frequency (Loes, et al., 2018). Another perspective suggests that collaborative learning indirectly enhances students' learning engagement and the effectiveness of educational performance. This assertion is grounded in the belief that the quality of learning activities and instructional performance is interconnected with peer interaction, instructor involvement, and social presence (Qureshi et al., 2021; Ansari & Khan, 2020).

The research findings indicate that the collaborative model enhances critical thinking skills, learning activities, and academic outcomes. For instance, studies by Tan and Loes & Pascarella found that the implementation of Collaborative Learning fosters students' knowledge acquisition, critical thinking skills, cooperation abilities, and increases student engagement and satisfaction in the learning process (Tan, 2019; Loes & Pascarella, 2017). Structuring collaborative learning experiences challenges students' thinking processes, encouraging critical and creative problem-solving, promoting prosocial behavior, and enhancing cognitive understanding (Gillies, 2019). Moreover, Lin (2019) discovered a significant correlation between cooperative skills and satisfaction in the discussion process, highlighting the impact of interaction on collaborative learning experiences.

Hasil studi yang dilakukan oleh (Akhrif et al., 2020) menunjukan bahwa pembelajaran kolaboratif sebagai salah satu praktik terbaik yang digunakan untuk membuat praktik lingkungan belajar untuk memperoleh dan berbagi pengetahuan. Kolaborasi cerdas (*intelligent collaboration*) dan yang berfungsi untuk meningkatkan kolaborasi kinerja dan memberikan cara yang efektif untuk menciptakan lingkungan belajar kolaboratif, yang terutama didasarkan pada profil pelajar dan evaluasi kemampuan siswa. Studi yang dilakukan oleh (Bhat et al., 2020) menunjukkan bahwa penerapan *Collaborative Learning* dapat meningkatkan hasil belajar atau kinerja siswa. Siswa merasa tugas itu lebih mudah, terutama ketika mereka dihadapkan pada lebih banyak berkolaborasi (Çini et al., 2020).

The study conducted by Akhrif et al. highlights collaborative learning as one of the best practices utilized to create a conducive learning environment for knowledge acquisition and sharing (Akhrif et al., 2020). Intelligent collaboration enhances performance and provides an effective way to establish collaborative learning environments, particularly focusing on learner profiles and student capability assessments. Additionally, research by Bhat et al. demonstrates that implementing Collaborative Learning leads to improved academic outcomes and student performance (Bhat et al., 2020). Students perceive tasks as more manageable, particularly when engaged in increased collaborative efforts (Çini et al., 2020).

Demikian halnya dengan penelitian yang dilakukan oleh (Ibrahim et al., 2015; Maharani et al., 2020; Sulaiman & Shahrill, 2015) menyimpulkan bahwa pembelajaran kolaboratif yang dilakukan melalui pengelompokan memiliki dampak pada prestasi belajar siswa terlepas dari kemampuan mereka, dalam penelitian ini juga dilaporkan bahwa dengan menerapkan pembelajaran kolaboratif akan meningkatkan kebiasaan bekerjasama siswa. Penelitian lain menunjukkan adanya korelasi yang lebih tinggi antara sikap positif terhadap pembelajaran kolaboratif dan dimensi rasa kebersamaan (Chatterjee & Correia, 2020).

Studies conducted by Ibrahim et al., Maharani et al., and Sulaiman & Shahrill collectively conclude that collaborative learning, particularly when structured in group settings, significantly impacts students' academic achievement regardless of their abilities (Ibrahim et al., 2015; Maharani et al., 2020; Sulaiman & Shahrill, 2015). These studies also report that implementing collaborative learning enhances students' cooperative habits. Additionally, other research indicates a higher correlation between positive attitudes toward collaborative learning and the sense of togetherness (Chatterjee & Correia, 2020).

Barkley et al., (2014) created the Collaborative Learning into these following steps:

1) Discussion, student interaction and exchange is achieved primarily through spoken words;

2) Resiprocal peer teaching, student purposefully help each other master subject matter content and develop discipline-based skills;

3) Problem solving, student focus on practicing problem-solving strategies;

4) Graphic information organizer, groups use visual tools to organize and display information;

5) Writing, students write to learn important course content and skills; and

6) Games, student work together in teams to participate in a competitive activity that is guided by a preexisting set of rule (Barkley et al., 2014).

Specifically for the problem solving technique includes:

(1) Think-Aloud Pair Problem Solving (TAPPS), by that, students solve a problem verbally to show their reasoning to the other students.

(2) Send a Problem, students will try to solve the problems in group, then proceed and give the solutions to the closest group to continue doing a similar activity, until the last group will evaluate all of the solutions offered.

(3) Case Study, students will review a written study regarding a real-life scenario and will develop the solution for the dilemma that consists in the writing.

(4) Structured Problem solving, students will follow a structured format to solve a problem.

(5) Analytic Teams, students will assume roles and tasks specifically to be 'played'.

(6) Group Investigation, students will plan, do, and report of an in-depth research projects.

In this research, Problem Solving (TAPPS and Case Study) technique is the one highlighted from Collaborative Learning method. Think-Aloud Pair Problem Solving is a technique where students expected to ellaborate a solution verbally to show their reasoning (Barkley et al., 2014). This method claimed to enhance the students' skills (Rofiqah et al., 2020). TAPPS is a collaborative learning model where students will work in pair, and each students have their own roles as a problem solver and a listener to solve specific problems (Pate & Miller, 2011). TAPPS also viewed as a learning strategy, independent finding and confidence building, listening, also an exceptional problem solver (Whimbey et al., 2013). TAPPS strategy involve one student to solve problem, while the other, which plays the role of listener will ask question and urge students to articulate their thought verbally and clarifies it simultaneously (Pate & Miller, 2011).

On the other hand, Case Study is a learning method which focuses on real-life events that close with the students surrounding, the expectation being, students will solve those problems based on the group discussion. Case Study could boost learning and students' social skills (Garvey et al., 2020). Interactivity with the other students and teacher during the case study will enhance the emotional involvement, which

eventually influenced the group interaction positively and also the individual performance (Nkhoma et al., 2017). Case Study also challenge students to think critically in solving problems, also using the Case Study method will increase the students' skill in critical thinking (Widiandari & Redhana, 2021).

Furthermore, the other factor which could affect the learning results is intellectual level which is a problem solving skill and to discover products which have cultural value or a collection of skills that could be grown and developed. Research result shows that there is an 'interaction' between learning approaches and interpersonal intelligence in influencing students learning outcomes (Syasmita et al., 2019; Ishaq et al., 2022).

As Gardner (2011) states, every individual have more than one type of intelligence, in oher words, multiple intelligence. Multiple intelligences consider that essentially every individual is unique, and by that they have to realize, and then develop that variety of human intelligence and the combination in between. Every students different or we might say, unique, because of those intelligence combination. Afterwards, Gardner distincts those intelligence into these criterias: linguistic intelligence, logical-mathematical intelligence, spatial intelligence, bodily-kinesthetic intelligence, and the interpersonal intelligence.

Specifically for Civics Education, interpersonal intelligence is the main character. Interpersonal intelligence correlates with interaction skill of the students and the sensitivity of noticing what other's needs. Students with interpersonal intelligence will give out positive impact to their society, they can understand what other people's feeling, planned and dreamed of.

Armstrong (2018) mengatakan bahwa kecerdasan interpersonal merupakan kemampuan mempresepsi dan membedakan suasana hati, maksud, motivasi, dan keinginan orang lain, serta kemampuan memberikan respon secara tepat terhadap suasana hati, motivasi dan keinginan orang lain. Pendapat tersebut menunjukkan bahwa anak yang memiliki kecerdasan interpersonal maka anak tersebut mampu untuk memotivasi dirinya untuk meningkatkan potensi yang dimiliki, untuk belajar dengan giat dan membangun kerjasama dengan orang lain untuk bekerja bersama dalam menyelesaikan tugas-tugas belajar. Salah satu hasil penelitian juga menujukkan ada pengaruh kecerdasan intrapersonal bersama-sama dengan kecerdasan interpersonal terhadap hasil belajar siswa (Mulbar et al., 2019). Sehingga dapat dikatakan bahwa anak yang memiliki kecerdasan interpersonal akan cenderung memiliki hasil belajar PPKN yang tinggi. Hasil penelitian menujukkan bahwa hasil belajar PPKN siswa lebih tinggi ketika memiliki kecerdasan interpersonal yang tinggi daripada siswa yang memiliki kecerdasan interpersonal rendah (Syasmita et al., 2019; Ishaq et al., 2022).

Armstrong (2018) delineates that interpersonal intelligence embodies the capacity to perceive and differentiate the moods, intentions, motivations, and desires of others, along with the ability to aptly respond to their emotional states, motivations, and desires. This viewpoint suggests that children possessing interpersonal intelligence are capable of self-motivation to enhance their inherent potentials, diligently engage in learning, and foster collaborations with others to collectively accomplish learning tasks. Research findings also indicate the joint influence of both intrapersonal and interpersonal intelligences on students' academic performance (Mulbar et al., 2019). Thus, it is safe to say that children with interpersonal intelligence tend to exhibit higher achievements in Civics Education (PPKN). The research demonstrates that students

achieve higher in Civics Education when possessing high levels of interpersonal intelligence compared to those with lower interpersonal intelligence levels (Syasmita et al., 2019; Ishaq et al., 2022). Based on the research results mentioned beforehand, we can see the similarities and differences. The similarity was using Collaborative Learning can enhance students' skills, study result, academic performance, and the habit of collaborating. Also, mentioned the connection with interpersonal intelligence variable. The disparity with prior research is we focused on Think Aloud Pair Problem Solving (TAPPS) and Case Study also we try to connect it with interpersonal intelligence. The other disparity appears on location, subject, and the research design itself.

2. MATERIALS AND METHODS

Research Aim

The primary objectives of this study was:

(1) An investigation into the disparities in Civics Education learning outcomes among students exposed to Collaborative Learning methods, specifically comparing the efficacy of the Think Pair Aloud Problem Solving (TAPPS) technique versus the Case Study technique.

(2) An in-depth analysis aimed at discerning the intricate interplay between Collaborative Learning methodologies and the students' Interpersonal Intelligence, dissecting its profound influence on the Civics Education learning outcomes.

(3) A meticulous scrutiny of the variances in Civics Education attainment between students engaged in Collaborative Learning through the Think Aloud Pair Problem Solving (TAPPS) technique and those employing the Case Study approach, especially within cohorts exhibiting high levels of Interpersonal Intelligence.

(4) A comprehensive analysis of the differences in Civics Education achievement among students participating in Collaborative Learning using the Think Aloud Pair Problem Solving (TAPPS) technique compared to the Case Study method within groups demonstrating low levels of Interpersonal Intelligence.

Sample Dan Desain Penelitian

The sampling for this research was decided from elementary schools in Muna Regency that exhibited equivalence in terms of accreditation, school location, teachers, curriculum, and other achievements. Observations indicated that the elementary schools deemed equivalent in Muna Regency, which could serve as samples for this study, were SDN 1 and SDN 2 Raha. These samples were drawn from Fifth-grade students at elementary schools accredited as Type B in Muna Regency, Southeast Sulawesi, Indonesia. Thus, based on these criteria, both sampled schools possessed relatively similar and homogeneous capabilities. The sampling process was executed through a lottery system. Following the lottery results, SDN 1 Raha was designated as experimental group 1 (comprising students learning through the application of collaborative learning using the TAPPS technique), while SDN 2 was assigned as experimental group 2 (comprising students learning through the application of collaborative learning using the Case Study technique).

Moving forward, from the two groups of students, they given interpersonal intelligence

test to decide students groups with high interpersonal intelligence and the lower one. The actual sample being the students selected from the test result, which we can conclude students with high and low interpersonal intelligence. Based on the data gathered from the sampled schools, the number of samples obtained from SDN 1 Raha was N1 = 25 students, and from SDN 2 Raha was N2 = 25 students. Consequently, the determination of the actual sample size in the research utilized a small sample rule (Lacy & Williams, 2018). Therefore, the group of students with high interpersonal intelligence (upper group) consisted of 50% of students who achieved the highest scores in interpersonal intelligence, while the group of students with low interpersonal intelligence (lower group) comprised 50% of students who obtained the lower scores in interpersonal intelligence.

Hence, according to the provision above, for A_1 class (TAPPS Group) consist of 25 students, grouped into two, A_1B_1 the TAPPS group with high interpersonal intelligence, consist of 13 students and the rest grouped as A_1B_2 with 12 students. Whereas for the A_2 class (Case Study students group), also consist of 25 students, divided into two groups, A_2B_1. The students with high interpersonal group in Case Study group being 13 students, and the lower one was 12 students, marked as A_2B_2. Thus, the total of this research sample was 50 students.

The research design used was a treatment by level 2 x 2 design, where each independent variable was classified into 2 groups: the treatment independent variable was classified into 2 collaborative learning models (A), namely the Collaborative Learning technique TAPPS (A_1) and the Case Study technique (A_2). Meanwhile, the moderator variable was classified into 2 levels, students with Interpersonal Intelligence (B): high Interpersonal Intelligence (B_1) and low Interpersonal Intelligence (B_2)

Treatment design by level 2 x 2 ellaborated in the following table:

Table 1: Research Design Treatment by Level 2 x 2

Interpersonal Intelligence (B)	Collaborative Learning Model (A)	
	TAPPS Technique (A1)	Case Studies Technique (A2)
High (B1)	A1B1	A2B1
Low (B2)	A1B2	A2B2

Instruments

The research instruments consist of, Civics Education learning outcome and interpersonal intelligence. The Civics Education learning outcome then developed from the competency standards and basic competencies of the subject. Learning outcome test was developed from revised Bloom theory; memorizing (C1), comprehending (C2), applying (C3), analyzing (C4), evaluating (C5), and creating (C6) (Anderson & Krathwohl, 2010). The Civic Education learning outcomes assessment comprised 56 multiple-choice items, which were deemed valid and reliable, exhibiting a very high level of reliability (r_{11} = 0,974). These items demonstrated good differentiating power and a moderate level of difficulty. The instrument for measuring interpersonal intelligence utilized a questionnaire encompassing 4 aspects—Social Sensitivity, Social Insight, and Social Communication—possessed by students. This questionnaire consisted of 55 valid and reliable statements, exhibiting a very high level of reliability (r_{11} = 0,972).

Analysis Procedures

The prerequisites prior to hypothesis testing included normality and homogeneity tests. The normality test for the data employed the Lilliefors test, while the homogeneity test used both the F-test and Bartlett's test. Hypothesis testing in the research utilized Analysis of Variance (ANOVA) and subsequent testing with the Dunnett's t-test for further analysis.

3. RESULTS

The hypothesis test calculation using Two-way ANOVA held manually and summarized in the following table.

Table 2: ANOVA Table

Source of Variation	SS	df	MSS	Fo	F Table α = 0.05
Between A	321.514	1	321.514	6.873	4.05
Between B	266.371	1	266.371	5.694	4.05
Interaction of AB	1937.500	1	1937.500	41.415	4.05
Depth	2151.985	46	46.782		
Total	4677.370	49	-	-	

Keterangan:

SS : Sum of squares

df : Degrees of freedom

MSS : Mean sum of squares

Differential Analysis of Civic Education Learning Outcomes Among Students Taught Using Collaborative Learning Model with TAPPS Technique (A_1) and Those Taught Using Collaborative Learning Model with Case Study Technique (A_2)

The statistical hypothesis tested in the analysis of the difference in Civic Education learning outcomes among students taught using the Collaborative Learning Model with TAPPS Technique (A_1) and those taught using the Collaborative Learning Model with Case Study Technique (A_2) is

H_0: $\mu_{A1} \leq \mu_{A2}$

H_1: $\mu_{A1} > \mu_{A2}$.

The results obtained from the two-way ANOVA, as presented in Table 2, indicate that the calculated F_{value} for Factor A or $F_0(A) = 6.873$, and the F_{table} at $\alpha = 0.05$ with degrees of freedom $v_1 = 1$ and $v_2 = 46$ is obtained as $F_{table(0.05;1,46)} = 4.05$. Since the calculated $F_{value} = 6.873 > F_{table(0.05;1,46)} = 4.05$, the null hypothesis ($H_o$) is rejected, leading to the acceptance of the alternative hypothesis (H_1). This signifies a significant difference in the Civic Education learning outcomes between students taught using the Collaborative Learning model with the TAPPS technique and those taught using the Collaborative Learning model with the Case Study technique.

To test whether the Civics Education learning outcomes of students taught using the Collaborative Learning model with the TAPPS technique are significantly higher than those taught using the Collaborative Learning model with the Case Study technique, a one-tailed t-test was conducted. In the one-tailed test, the calculated t-value,

computed by the formula $t_0(A) = \sqrt{Fo(A)} = \sqrt{6.873} = 2.622$. At a significance level of α = 0.05 and degrees of freedom df = 46, the critical t-value for the one-tailed test is $t_{(0.05;46)}$ = 1.684. As the calculated t-value = $t_0(A)$ = 2.622 > t_{tabel} = $t_{(0.05;46)}$ = 1.684, the null hypothesis (H_0) is rejected in favor of the alternative hypothesis (H_1). Accepting H_1 indicates that the Civic Education learning outcomes of students taught using the Collaborative Learning model with the TAPPS technique are significantly higher than those taught using the Collaborative Learning model with the Case Study technique.

The Test of Interaction Effects between Collaborative Learning Models and Interpersonal Intelligence on Civic Education Learning Outcomes of Students

The statistical hypothesis tested to examine the influence of interaction between Collaborative Learning models and students' Interpersonal Intelligence on Civic Education learning outcomes is

H_0: Interaction A x B = 0

H_1: Interaction A x B ≠ 0.

Based on the calculated F-value in the ANOVA table (Table 2) for testing the influence of interaction between factors A and B, the obtained $F_{value(AB)} = F_0(AB)$ = 41.415. At the significance level of α = 0.05 and degrees of freedom db1 = 1 and db2 = 46, the tabulated F table = $F_{(\alpha = 0.05;db1=1;db2=46)}$ = 4.05. As the calculated $F_{value} = F_0(AB)$ = 41.415 > the F_{table} = 4.05, the null hypothesis (H_0) is rejected in favor of the alternative hypothesis (H_1). This signifies an interaction between the Collaborative Learning model and interpersonal intelligence concerning the Civic Education learning outcomes of students. The interaction between the Collaborative Learning model and students' interpersonal intelligence can be depicted graphically in the following Figure 1.
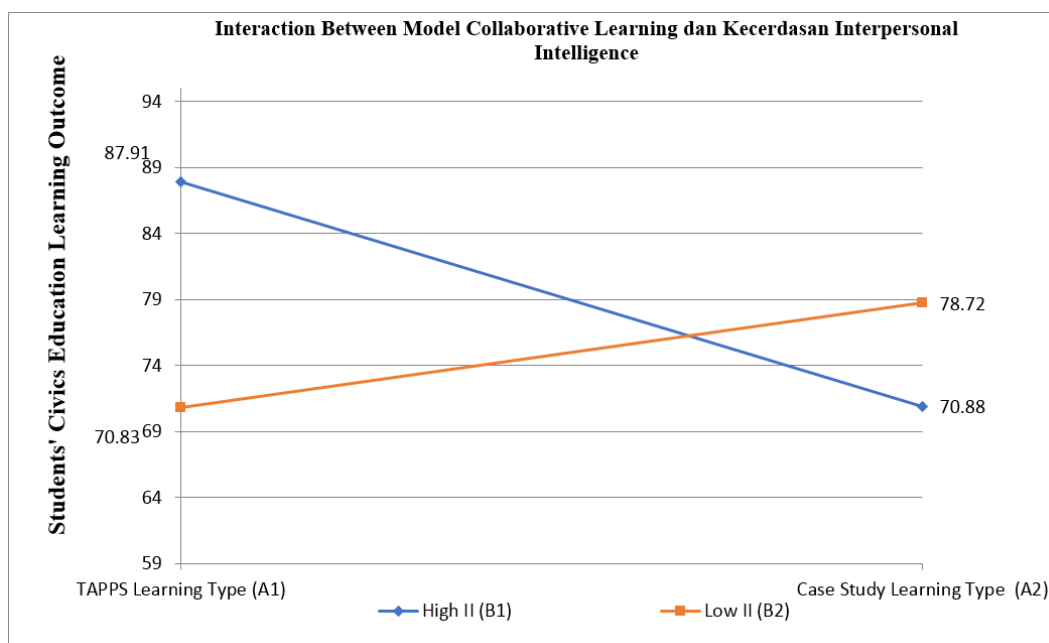

Figure 1: Collaborative Learning Model and Interpersonal Intelligence

Based on Figure 1, the interaction graphic between the Collaborative Learning model and students' Interpersonal Intelligence illustrates that the mean Civics Education learning outcomes of students taught using the Collaborative Learning technique

TAPPS, particularly for students with high interpersonal intelligence (A_1B_1), is 87.91. The mean Civics Education learning outcomes of students taught using the Collaborative Learning technique TAPPS but with low interpersonal intelligence (A_1B_2) is 70.83.

Similarly, the mean Civics Education learning outcomes of students taught using the Collaborative Learning technique Case Study for those with high interpersonal intelligence (A_2B_1) is 70.88, while for students with low interpersonal intelligence (A_2B_2), the mean Civic Education learning outcome is 78.72.

According to the interaction between Collaborative Learning and Interpersonal Intelligence graphic, it can be observed that there is an intersection of curves between the curve representing the mean Civic Education learning outcomes of students taught using the Collaborative Learning technique TAPPS and the mean Civic Education learning outcomes of students taught using the Collaborative Learning technique Case Study among students with high interpersonal intelligence (blue curve) and the curve representing the mean Civic Education learning outcomes of students taught using the Collaborative Learning technique TAPPS and the mean Civic Education learning outcomes of students taught using the Collaborative Learning technique Case Study among students with low interpersonal intelligence (red curve). In the graph, it is evident that the highest mean Civic Education learning outcomes for students taught using the Collaborative Learning technique TAPPS were achieved by the group with high interpersonal intelligence. Conversely, for students taught using the Collaborative Learning technique Case Study, the highest mean outcomes were attained by the group with low interpersonal intelligence.

Due to the interaction effects between the Collaborative Learning model and Interpersonal Intelligence on the average Civics Education learning outcomes among each group (A_1B_1, A_1B_2, A_2B_1, and A_2B_2), further analysis is warranted to ascertain empirical differences among these four data groups at a significance level of $\alpha = 0.05$. This necessitates conducting additional testing, specifically the One-Way Analysis of Variance (ANOVA) or one-way ANOVA. The hypothesis tested in this One-Way ANOVA is:

H_0 : $\mu_{A1B1} = \mu_{A2B1} = \mu_{A1B2} = \mu_{A2B2}$

H_1 : Not H_0.

Based on the calculated F_0 for the subsequent (simple effect) test, obtained F_{value} was $F_0 = 17.994$. At a significance level of $\alpha = 0.05$ and degrees of freedom df1 = 3 and df2 = 46, obtained F_{value} was $F_{(\alpha = 0.05; df1=3; df2=46)} = 2.81$. As the calculated $F_{value} = F_0 = 17.994 > F_{table} = F_{(0.05;3;46)} = 2.81$, the null hypothesis ($H_0$) is rejected, leading to the acceptance of the alternative hypothesis (H_1). This indicates a difference in the average values among the four groups of Civic Education learning outcomes A_1B_1, A_1B_2, A_2B_1, and A_2B_2. To determine which groups differ from one another, the Dunnett's t-test was conducted. The results of the manual calculation for the Dunnett's t-test are summarized in Table 3 below.

Table 3: Test Result Summarize t-Dunnet

Criteria	Hypothesis	t_{value}	t_{table}	Decision
Accepted H_0 if $t_{value} \leq t_{table}$ and Rejected H_0 if $t_{value} > t_{table}$	$H_0 : \mu_{A1B1} \leq \mu_{A2B1}$ $H_1 : \mu_{A1B1} > \mu_{A2B1}$	6.349	1.671	Reject H_0
	$H_0 : \mu_{A1B2} \geq \mu_{A2B2}$ $H_1 : \mu_{A1B2} < \mu_{A2B2}$	2.824	1.671	Reject H_0

Test of Differences in Civics Education learning outcomes among Students taught with Collaborative Learning Model using the TAPPS Technique and those taught with Collaborative Learning Model using the Case Study Technique Specifically for Students with High Interpersonal Intelligence

The statistical hypothesis tested in examining the difference in the average Civic Education learning outcomes between students taught using the Collaborative Learning technique TAPPS specifically for those with high interpersonal intelligence (A_1B_1) and those taught using the Collaborative Learning technique Case Study specifically for those with high interpersonal intelligence (A_2B_1) is

$H_0 : \mu_{A1B1} \leq \mu_{A2B1}$

$H_1 : \mu_{A1B1} > \mu_{A2B1}$

On this third hypothesis test, the one compared was Civics Education learning outcome mean from the two groups, the Collaborative Thinking TAPPS group with high interpersonal intelligence (A_1B_1) and the student with Collaborative Learning Case Study, specific for the students with high interpersonal intelligence (A_2B_1).

The results of the advanced analysis using the t-Dunnet test in Table 3 indicate that the test of the mean difference in Civics Education (PPKN) learning outcomes between students taught using the Collaborative Learning model with the specific TAPPS technique for those with high interpersonal intelligence (A1B1) and those taught using the Collaborative Learning model with the specific Case Study technique for those with high interpersonal intelligence (A2B1) yielded a $t_{value} = 6.349$ dan $t_{table} = t_{(0.05;46)} = 1.684$. Since the $t_{value} = 6.349 > t_{table} = t_{(0.05;46)} = 1.684$, the decision is to reject the null hypothesis (H_0). This indicates that the average Civics Education learning outcome for students taught using the Collaborative Learning model with the specific TAPPS technique for those with high interpersonal intelligence (A_1B_1) is higher than the average outcome for students taught using the Collaborative Learning model with the specific Case Study technique for those with high interpersonal intelligence (A_2B_1).

Test of Difference in Civics Education Learning Outcomes among Students Taught with Collaborative Learning TAPPS Technique and those taught with Collaborative Learning Case Study Technique Specifically for Students with Low Interpersonal Intelligence

Statistical hypothesis that tested on the mean of Civics Education learning outcome from students with low interpersonal intelligence (A_1B_2) that taught with Collaborative Learning TAPPS and Collaborative Learning Case Study (A_2B_2) is

$H_0 = \mu_{A1B2} \geq \mu_{A2B2}$

$H_1 = \mu_{A1B2} < \mu_{A2B2}$

The results shows, from the advanced analysis using the t-Dunnet test, the Table 3 reveals that the comparison of the mean differences in Civics Education learning outcomes among students taught using the Collaborative Learning with TAPPS

technique for those with low interpersonal intelligence (A_1B_2) and those taught using the Collaborative Learning with Case Study technique for those with low interpersonal intelligence (A_2B_2) yielded a t_{value} = 2.824 and t_{table} = $t_{(0.05;46)}$ = 1.684. As the t_{value} = 2.824 > t_{table} = $t_{(0.05;46)}$ = 1.684, the decision is to reject the null hypothesis (H_0), signifying that the average Civics Education learning outcomes for students instructed through the Collaborative Learning model using the specific TAPPS technique for those with low interpersonal intelligence (A_1B_2) are lower than the average outcomes for students instructed through the Collaborative Learning model using the specific Case Study technique for those with low interpersonal intelligence (A_2B_2).

4. DISCUSSIONS

Civics Education Learning Outcome from Students Taught with Collaborative Learning with TAPPS Technique Higher Than Students Taught with Collaborative Learning with Case Study Technique

Hypothesis test yielded the Civics Education learning outcome from Collaborative Learning with TAPPS technique students group is higher compared to Collaborative Learning with Case Study students group's result. This high yield supported by the advantages provided by the Collaborative Learning with TAPPS technique. Collaborative Learning with TAPPS technique emphasizing on individual skills enhancement in speaking or thoughts/ideas articulating, analytical skills, helped diagnosing and solving problems, nurturing discussion to constructing students' knowledge, and also support the capabilities in problem solving, especially the problems related with daily life which aligned with Civics Education learning contents. Therefore, TAPPS learning method we consider to be highly beneficial in emphasizing problem solving skill and help the students to indentify logical fallacies or wrongful process (Barkley et al., 2014).

In Collaborative Learning with TAPPS technique, all of the students given chance to be the problem solver. Whereas in that role, students will trying willingly to solve the problem that have been given. When the problem solver conveying their answer to their colleagues which played the role as a listener, whose ready to give out correction without giving out an answer to help. In this circumstances, the students played the role as the problem solver try their best to find the best solution regarding the problem given, thus they will avoid to make mistakes from the beginning. Human being as a nature, appreciate more reward and/or recognition than correction.

Based on the findings of this research, it can be elucidated that the Collaborative Learning model utilizing the Think Pair Aloud Problem Solving (TAPPS) technique is highly suitable for enhancing the Civics Education learning outcomes of elementary school students. Collaborative learning elements emphasize independence, interaction, individual responsibility, and group learning skills (Alexandrov et al., 2013). This aligns with the research findings by Yanuarti, Mahendrawan, and Prasetyo (2022) which suggest that students taught using the Collaborative Learning model of the TAPPS type perform better than those instructed through conventional models. Consequently, it can be affirmed that the Collaborative Learning model employing the TAPPS approach is capable of enhancing the quality of student learning compared to the Collaborative Learning model using the Case Study approach.

There Exists an Influence of Interaction between the Collaborative Learning Model and Interpersonal Intelligence on the Civics Education Learning Outcomes of Students

The findings of this research indicate an interaction between the selection of teaching models and interpersonal intelligence. This implies that in order to enhance student learning outcomes, teachers need to consider both the choice of instructional models and the students' interpersonal intelligence. Precision in selecting appropriate teaching models can provide a clear framework and direction in the learning process. Additionally, teachers can design and establish guidelines to ensure that the learning process aligns with expected outcomes. Moreover, students' interpersonal intelligence can also determine their learning achievements.

The research findings align with Sakti, Setiawan, and Saragi's (2010) study, which discovered an influence of interaction between collaborative models and interpersonal intelligence on the Civics Education learning outcomes of students. Interpersonal intelligence improves when an appropriate teaching model is employed (Uno, 2000). Learning activities suitable for individuals with interpersonal intelligence characteristics include sharing emotions with classmates, group work, board games, and simulations. Gokhan Ozsoy (2009) asserted that interpersonal intelligence enables students to enhance their learning achievements if the teaching model aligns with their characteristics. Interpersonal intelligence can significantly impact how students learn or solve learning-related problems. Furthermore, in elementary school PPKN classes, students' interpersonal intelligence can improve their problem-solving abilities. Collaborative learning models effectively enhance the creative thinking skills of students with low academic abilities (Gokhan Ozsoy, 2009).

The Civics Education Learning Outcomes of Students Taught Using the Collaborative Learning Model Employing the TAPPS Technique were Found to be Higher Compared to those Instructed Through the Collaborative Learning Model Using the Specific Case Study Technique, Specifically Among Students with High Levels of Interpersonal Intelligence

The research findings indicate that the average Civics Education learning outcomes of students taught using the Collaborative Learning with the TAPPS technique are higher compared to those taught using the Collaborative Learning with the Case Study technique, specifically among students with high levels of interpersonal intelligence. The implementation of TAPPS technique in students with high interpersonal intelligence allows them to effectively engage with the TAPPS learning model. Additionally, students are proficient in expressing opinions relevant to the learned content. The Collaborative Learning model using the TAPPS technique suits students with high interpersonal intelligence due to its provision of opportunities for group discussions and effective communication including listening and accepting others' opinions to solve problems.

Aligned with this, Barkley, in "Collaborative learning" explains that the TAPPS learning technique is a learning model where students solve problems by verbal to demonstrate their reasoning to the listening peers or colleagues, emphasizing the problem solving process rather than focusing on the outcome (Barkley et al., 2014). The TAPPS technique significantly aids in enhancing high-level thinking skills for students by demanding independent problem-solving and learning. Consequently, critical thinking, creativity, and problem-solving abilities are improved (Nizami, 2022).

The Collaborative Learning approach using the TAPPS technique holds strengths in developing speaking skills or expressing ideas, enhancing students' analytical capabilities, aiding in diagnosing problem-solving errors, fostering discussions to construct students' knowledge, and supporting problem-solving skills (Barkley et al., 2014; Nizami & Mahmudi, 2018). Conversely, students with high interpersonal intelligence naturally possess the ability to interact with others, thereby potentially yielding positive impacts on their learning outcomes (Istapra & Kurniah, 2022).

Henceforth, the implementation of Collaborative Learning utilizing the TAPPS technique for students with high interpersonal intelligence can empower them to develop skills in expressing ideas, enhance analytical abilities, assist in diagnosing problem-solving errors, foster discussions for constructing students' knowledge, and support problem-solving skills within Civics Education learning. This aligns with one of the characteristics of Civics Education studies that focus on citizenship education, emphasizing the formation of students' attitudes and personalities reflected in civilized behavior in real-life contexts within students' environment, family, society, and nation. It involves exhibiting civilized behavior in thinking, attitude, actions, and participation in communal life.

The Collaborative Learning with TAPPS technique, as the primary form of collaborative learning, is characterized by learning situations in small group where individuals are motivated to share their knowledge and skills with their group partners as they collaborate on a common task or within a shared learning or training environment (Luzzatto & DiMarco, 2009). Meanwhile, interpersonal intelligence is linked to a student's ability to interact with others; a student possessing high interpersonal intelligence will bring positive impacts to their surroundings. There exists a correlation between interpersonal intelligence and students' academic achievement (Istapra & Kurniah, 2022).

Dengan demikian siswa yang memiliki kecerdasan interpersonal tinggi akan lebih baik hasil belajarnya jika diajar dengan model kolaboratif teknik TAPPS dibadingkankan dengan siswa yang diajar dengan model kolaboratif teknk *Case Study*. Karena *Case Study* sangat berguna untuk mengajarkan prinsip-prinsip dan teori-teori abstrak sementara materi PPKN sekolah dasar lebih dititikberatkan pada materi praktik. Proses pembelajarannya tekhnik TAPPS mengedepankan masalah-masalah yang ada di dunia nyata atau yang dekat dengan siswa sehingga mendorong siswa untuk menyelesaikan masalah tersebut berdasarkan hasil diskusi secara berkelompok, dan ini sangat cocok dengan siswa yang memiliki kecerdasan interpersonal tinggi.

Hence, we consider that students with high interpersonal intelligence tend to achieve better learning outcomes when taught using the Collaborative Learning with TAPPS technique compared to those taught with the Case Study technique. On the other hand, the Case Study is highly beneficial for teaching abstract principles and theories, while elementary school Civics Education emphasizes practical content. The TAPPS learning process prioritizes real-world problems or those closely related to students, encouraging them to solve these problems through group discussions. This approach aligns well with students possessing high interpersonal intelligence.

The Civics Education Learning Outcomes of Students Taught Using the Collaborative Learning Model with the TAPPS Technique were Found to be Lower Compared to Those Instructed through the Collaborative Learning Model

Using the Case Study Technique, Specifically among Students with Low Levels of Interpersonal Intelligence

The research findings indicate that the Civics Education learning outcomes of students taught using the Collaborative Learning with TAPPS technique are lower than the average outcomes of students taught using the Collaborative Learning technique of Case Study among those with low levels of interpersonal intelligence. Students with low interpersonal intelligence tend to be less proficient in TAPPS-based learning, both as problem solvers and listeners.

When these students take on the role of problem solvers, they are less effective and less skilled in problem-solving due to several limitations associated with low interpersonal intelligence. They often lack problem solving abilities and exhibit reduced proficiency in communication and interaction with others. Consequently, their communication while solving problems tends to be less effective, making it challenging for the listeners to comprehend their points effectively.

Additionally, these students are less effective as listeners due to their limited skill set and effectiveness in listening. Moreover, students with low interpersonal intelligence tend to provide less suitable responses when acting as problem solver.

Meanwhile, students with low interpersonal intelligence, even though they have limitations in some areas, are not hindered from participating in group learning activities when using the case study technique. In Case Study-based learning, certain learning steps, such as step (3) where students work in groups to study the given case, and step (4) where students gather data to solve the problem at hand, do not necessitate communication abilities. This can be noticed during group presentations where the outcomes of group activities, such as ideas and problem solving answers, are presented by reading text derived from their group work.

Pada kondisi belajar dengan teknik *case study* seperti ini, siswa dengan kecerdasan interpersonal rendah tetap dapat melakukan proses belajar dan memahami materi pemecahan masalah dengan lebih baik meskipun siswa tersebut kecerdasan interpersonalnya rendah. Hal ini yang mendukung siswa mencapai hasil belajar PPKN dengan lebih tinggi dibandingkan dengan hasil belajar dari pembelajaran TAPPS seperti diungkapkan di atas.

In this learning scenario which utilizing the Case Study technique, students with lower levels of interpersonal intelligence can still engage in the learning process and comprehend problem-solving materials more effectively. This supports students in achieving higher outcomes in Civics Education compared to the learning outcomes observed in TAPPS-based instruction, as discussed previously.

This is supported by (Widiandari & Redhana, 2021) who state that the Case Study method challenges students to employ critical thinking skills in problem-solving, thereby enhancing their critical thinking abilities. It is evident that even students with lower interpersonal intelligence can articulate opinions, provide comments, respect others' viewpoints, and collaborate effectively within their groups. Therefore, with the guidance of teachers in the Civics Education learning process, students are encouraged to confidently express their ideas and thoughts concerning the learning materials.

This gradually impacts better learning achievements compared to students learning through problem-solving models. Furthermore, research conducted by Le, Janssen &

Wubbels (2017) emphasizes that the success of collaborative learning in improving students' learning achievements does not solely depend on teachers' roles but also on how effectively students develop their abilities through collaboration with their peers.

5. CONCLUSIONS

Henceforth, we can infer that: Certainly! Here are the statements:

(1) The Civics Education learning outcomes of students employing the Collaborative Learning with TAPPS technique are higher compared to students utilizing the Collaborative Learning approach through Case Study methods.

(2) There exists an influence stemming from the interaction between the models of Collaborative Learning (TAPPS technique and Case Study) and levels of Interpersonal Intelligence (high and low) on the students' achievement in Civics Education.

(3) The Civics Education learning outcomes are notably higher among students using the Collaborative Learning with TAPPS technique as opposed to those employing the Collaborative Learning with Case Study technique, specifically within groups characterized by higher levels of interpersonal intelligence.

(4) Civics Education learning outcomes for students using the Collaborative Learning technique known as TAPPS are lower compared to those using the Collaborative Learning technique of Case Study within groups characterized by lower levels of Interpersonal Intelligence.

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