

## APPLICATION OF TGT COOPERATIVE LEARNING MODEL IN ANGLE LEARNING IN ELEMENTARY SCHOOL

Brigita Theoananta<sup>1</sup>, Muadhatus Solehah<sup>2</sup>, Putri Sahapani<sup>3</sup>, Rendo Fahestama<sup>4</sup>, M. Daffa Diyah<sup>5</sup>

<sup>1,2,3,4,5</sup> Elementary School Teacher Education, University of Lampung, Indonesia

[brigithatheoananta@gmail.com](mailto:brigithatheoananta@gmail.com)<sup>1</sup>, [muadhatussolehah@gmail.com](mailto:muadhatussolehah@gmail.com)<sup>2</sup>, [putrisavani111@gmail.com](mailto:putrisavani111@gmail.com)<sup>3</sup>, [rendorendo62@gmail.com](mailto:rendorendo62@gmail.com)<sup>4</sup>, [daffadiyahulhaq@gmail.com](mailto:daffadiyahulhaq@gmail.com)<sup>5</sup>

### ABSTRACT

*The application of TGT (Team Games Tournament) to corner material allows learners to explore these concepts collaboratively, with game support designed to strengthen their understanding. In addition, this model also contributes to the development of students' social skills, such as cooperation, communication, and mutual respect for each other's opinions. The author uses the literature study method in conducting research. The author also uses a descriptive method in describing the data that has been obtained. The results and discussions we got The implementation of the TGT (Teams Games Tournament) type cooperative learning model proved to be effective in increasing students' understanding and activeness in learning corner material in elementary school The TGT model involved students in small groups to cooperate, play, and compete through academic tournaments. This helps to increase material understanding, motivation, participation, and students' social skills. Various studies show that the use of TGT in corner learning is effective in improving learning outcomes and student motivation. The application of TGT encourages students to collaborate, compete healthily, and understand concepts through activities that are relevant to daily life.*

**Keywords:** cooperative learning model, angle, TGT, Mathematics

### A. INTRODUCTION

The educational journey of mathematics during the primary school years plays a pivotal and influential role in laying down the foundational knowledge that learners will rely upon as they navigate through various mathematical concepts essential for their everyday lives and future endeavors. The overarching aim of engaging in mathematics education is not merely to impart knowledge, but rather to cultivate critical thinking and reasoning skills, nurture creative problem-solving activities, enhance the ability to effectively convey information or articulate ideas, thereby positioning mathematics as a strategically vital domain of science that is integral to shaping a generation equipped to thrive in an increasingly competitive global landscape.

Mathematics is universally acknowledged as a fundamental field of study that is imparted across all educational levels, underscoring its significance as an essential discipline for students, serving as a cornerstone of foundational knowledge that contributes to the subsequent development of their attitudes and cognitive frameworks. Furthermore, mathematics functions as a crucial auxiliary tool that supports not only the discipline of mathematics itself but also extends its utility to various other scientific domains, thereby reinforcing its importance in a comprehensive educational curriculum.

Moreover, mathematics represents a fundamental body of knowledge that is both applicable and invaluable in the fabric of everyday life, as it is nearly impossible to engage in daily activities without encountering problems or scenarios that necessitate some degree of mathematical reasoning. A key area of mathematical instruction includes the concept of angles, which is frequently perceived as a challenging topic for learners to grasp, primarily due to its abstract nature and the requirement for a solid understanding of geometric shapes and their relationships. Consequently, there is a pressing need for a

pedagogical model that not only proves effective in enhancing learners' comprehension but also fosters an engaging and enjoyable learning atmosphere.

The cooperative learning model known as TGT, which stands for Team Games Tournament, represents a highly effective strategy that can be seamlessly integrated into mathematics instruction within elementary educational settings. This instructional model is fundamentally grounded in the principles of collaborative teamwork, wherein learners are organized into small, diverse teams that engage in a variety of games and tournaments designed to stimulate their interest and participation. Through this innovative approach, students are motivated to learn in a manner that is both interactive and competitive, which can significantly bolster their enthusiasm and involvement throughout the educational process.

The implementation of the TGT (Team Games Tournament) approach in relation to the topic of angles enables learners to collectively explore these mathematical concepts in a collaborative environment, supported by games that are specifically designed to reinforce their understanding of the material at hand. Additionally, this instructional model plays an instrumental role in fostering the development of essential social skills among learners, such as the ability to work cooperatively with others, communicate effectively, and appreciate the diverse perspectives and opinions of their peers in a constructive and respectful manner.

## **B. RESEARCH METHODS**

The researcher employs the Literature Study methodology as a pivotal approach in the execution of their investigative efforts. This particular research method, known as Literature Study, entails an extensive and thorough examination, as well as a critical review of existing literature, wherein the authors meticulously analyze and extract pertinent data from various scholarly journals that serve as the foundational bedrock or theoretical framework that underpins the research being conducted. In this context, the authors have strategically chosen to implement this methodology to thoroughly investigate and comprehend the application and the consequential impact of the TGT-type cooperative learning model within the framework of corner learning environments in elementary educational settings. To ensure a comprehensive analysis and review of these practical applications, it is imperative to utilize a diverse array of academic journals that not only ground the authors' theoretical perspectives but also substantiate and bolster the overall integrity of the research being presented.

In addition to the aforementioned methodology, the author also incorporates descriptive methods as a means of articulating and elucidating the data that has been collected and compiled throughout the research process. The Descriptive Method, which is employed here, serves as a systematic approach to data presentation, whereby the author meticulously describes the existing data with clarity and precision, utilizing well-structured and articulate descriptive sentences that convey the essential information effectively. The utilization of this method enhances the overall quality and comprehensibility of the research findings, allowing for better interpretation and understanding among the intended audience. Ultimately, by integrating both the

Literature Study and Descriptive methods, the author seeks to provide a robust and insightful exploration of the subject matter at hand, thereby contributing to the broader academic discourse surrounding educational methodologies and their practical applications.

### C. RESULTS AND DISCUSSION

Learning can be described as a dynamic and multifaceted process of interaction that unfolds between a diverse group of individuals, including learners, educators, and various informational resources within a distinctly structured learning environment. The primary objective of this intricate process is to effectively facilitate the attainment of knowledge in scientific disciplines, the mastery of essential skills, as well as the holistic formation of positive attitudes and a sense of trust among learners, which collectively contribute to their overall educational development. In the realm of education, the concept of learning is frequently perceived as a significantly more active and engaging endeavor in comparison to conventional teaching methodologies, where the role of educators transitions into that of facilitators who inspire and encourage students to take an active role in their own learning journey. It is crucial to understand that learning transcends mere information delivery; rather, it encompasses a diverse array of innovative strategies and methodologies that are meticulously designed to cultivate and create profoundly meaningful and impactful learning experiences for all students involved.

In the specific context of mathematical education, mathematical learning constitutes a comprehensive educational process that is meticulously designed to foster the development of understanding, competencies, and capabilities related to logical and analytical thinking through the exploration of mathematical concepts and materials. Within the framework of mathematical learning, students are systematically introduced to fundamental concepts that include, but are not limited to, numbers, arithmetic operations, geometric principles, algebraic expressions, statistical reasoning, and a variety of other essential topics that are foundational to the discipline. In this scholarly article, the focus will be directed towards an in-depth discussion of materials pertinent to the study of angular learning, which is a vital component of geometry. An angle, in its fundamental definition, can be understood as a geometric figure that is created through the intersection of two straight lines that converge at a specific point known as the vertex. The points where the two lines intersect are referred to as the corner points, while the two straight lines that delineate the angle are commonly referred to as the sides of the angle itself. Below, you will find an enumeration of the various types of angles that are integral to the study of geometry, each possessing unique characteristics and properties that contribute to the discipline's richness and complexity.

#### 1. Right Angle

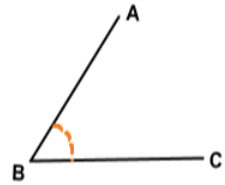
An angle that measures  $90^\circ$ . In addition, a right angle can also be denoted by  $\angle$ . Examples of right angles in everyday life include the



corner of a table, the corner of a book, or the corner of a room wall.

2. Acute Angle

An angle that measures less than  $90^\circ$ . As the name implies, these angles are pointed like a pencil that has been sharpened. Examples include the angle formed by the hands of a clock at 03:00 or the angle formed by the roof of a house.



3. obtuse angle

An angle that measures more than  $90^\circ$  but less than  $180^\circ$ . Examples include the angle formed by the hands of a clock at 2am or the angle formed by a wide open door.



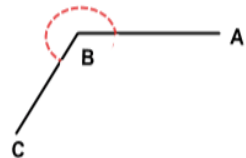
4. Straight Angle

An angle that measures  $180^\circ$ . Examples include an angle formed by a straight line or an angle formed by two parallel lines.



5. Reflex Angle

An angle that measures more than  $180^\circ$  but less than  $360^\circ$ . Examples include the angle formed by the hands of a clock at 8am or the angle formed by a circle.



The process of measuring angles is executed with the aid of an instrument known as a protractor, which is an essential tool in the field of geometry. A protractor is a specialized device designed specifically for the purpose of measuring angles, typically expressed in degrees, with the standard range extending from  $0^\circ$  to  $180^\circ$  in most cases. The most fundamental form of this degree arc features a semicircular disk that is calibrated with markings that span from  $0^\circ$  to  $180^\circ$ , providing a clear and precise means for angle measurement. The concept of angles is ubiquitous in our daily lives, manifesting in various forms, such as the angles observed on bicycle wheels as they rotate, the positions of the hands on wall clocks as time passes, and even in the natural world, such as the angles formed when animals open their mouths or when pedestrians navigate intersections. Students and learners are encouraged to explore the practical applications of angles in real-world contexts, fostering a deeper understanding of their significance. In the domain of elementary education, learners engage in activities that involve recognizing different types of angles based on their measurements; they are also taught how to utilize a protractor effectively to determine the specific size of an angle. Furthermore, learners are

introduced to practical examples, such as measuring angles in a clockwise direction, which aids in solidifying their comprehension of the concept of angles as they relate to everyday experiences.

In addition to angle measurement, mathematical education encompasses a wide array of skills, including problem-solving techniques, logical reasoning, and the application of mathematical principles in real-life scenarios. The methodologies employed in teaching mathematics can vary significantly, ranging from traditional instructional methods to more innovative and modern approaches, which may include the integration of technology and problem-based learning strategies designed to engage students actively.

A particularly effective model that can be incorporated into the mathematical learning framework is the Cooperative learning model, which serves as a pedagogical approach that prioritizes collaboration among students working in small groups to achieve common educational objectives. Within this framework, students from diverse backgrounds and varying levels of ability come together to collaborate, support, and interact with one another, facilitating a dynamic environment in which they can collectively complete assigned tasks and enhance their learning experiences.

Characteristics of Cooperative Learning:

- a. Small Groups: Students are divided into small groups of 4 to 6 members.
- b. Social interaction: students listen to each other and exchange ideas.
- c. Shared Responsibility: Each group member is responsible for their group's learning outcomes.
- d. discussion-based activities: Learning activities include discussion and collaboration.

The primary objective of the educational model in question is to enhance not only the academic prowess of students but also to significantly bolster their social interactions and interpersonal skills, which are essential for their overall development and success in life. Engaging in collaborative group activities provides students with a unique opportunity to cultivate vital competencies such as critical thinking, effective communication, and strong leadership abilities, all of which are indispensable in both academic and professional settings. Furthermore, the implementation of cooperative learning strategies has been shown to elevate students' motivation toward learning by fostering a nurturing and inclusive atmosphere that encourages participation and engagement. Beyond merely augmenting academic performance, this educational model also plays a crucial role in helping students to appreciate and embrace individual differences, thereby enhancing their self-esteem and promoting the acquisition of social skills that are pivotal for navigating everyday interactions and relationships.

Cooperative learning frameworks are categorized into various types, one prominent example being the TGT model, which stands for Team Game Tournament. The TGT cooperative learning model is characterized by its inclusive approach, engaging all students regardless of their individual status, and incorporating the role of students as peer tutors while seamlessly integrating elements of playfulness and reinforcement into the learning process. In the TGT methodology, students are strategically organized into teams consisting of four to five members, each possessing distinct skills and strengths that

contribute to the team's collective knowledge. Following the teacher's presentation of the instructional material, the teams convene to collaboratively engage with activity sheets and supplementary resources, thereby enhancing their understanding of the subject matter. Subsequently, an academic tournament is conducted, during which students compete in educational games against members of other teams, thereby accumulating points that contribute to their team's overall score. The overarching aim of the TGT model is to equip students not only with essential concepts and a solid understanding but also with the practical skills and knowledge necessary for making meaningful contributions to their team efforts. Additionally, the TGT framework aspires to:

- a. Train a sense of responsibility and self-confidence, respect for differences, collaborate and help each other
- b. Train critical thinking in solving important problems and challenges
- c. Develop students' communication skills
- d. Increase motivation, activity, and learning success

#### Advantages of TGT learning model

- a. Increased time spent on task
- b. Acceptance of individual differences
- c. Competition allows for more relaxed learning.
- d. Encourages responsibility, cooperation, healthy competition and participation in learning.

The implementation of the TGT (Teams Games Tournament) cooperative learning model is proven to be effective in improving students' understanding and activeness in learning angle material in elementary school. The following are the implementation steps of the TGT (Teams Games Tournament) cooperative learning model:

1. Material Delivery The educator begins with an explanation of the basic concepts of angles, including the types of angles and how to calculate angles in flat shapes.
2. Team Formation Learners are divided into small groups (4-5 people) by considering the diversity of abilities so that each team has complementary members.
3. Game Activities After understanding the material, students conduct game activities related to the concept of angles, such as drawing flat shapes with certain angles or using props to show angles.
4. Tournament Each team competes in a tournament by completing questions or tasks related to the material. Scoring is based on the speed and accuracy of the answers.
5. Awards The team with the highest score receives an award, such as praise or a small prize, to increase students' motivation to actively participate.

By implementing the TGT-type Cooperative Learning model to enhance the corner learning materials, educators are afforded the opportunity to incorporate corner clock media as a significant instrument that supports the success of their learning objectives. This particular angular clock medium is classified as a tangible educational tool that plays a crucial role in aiding learners to grasp the complex subject matter associated with angular measurements and concepts. Specifically, an angular clock prop serves as a dual-

purpose measuring device that effectively conveys both the passage of time and the principles of angles, all encapsulated within a singular, concrete medium. To optimize student engagement, corner clock props are meticulously designed to be visually appealing and captivating, ensuring that students remain interested and motivated while they navigate the often-challenging world of mathematics. The careful selection of an appropriate learning strategy is paramount, as it can significantly influence the overall effectiveness of mathematical education. The employment of corner clock props can indeed be classified as a valuable learning strategy that illustrates the inherent nature of knowledge acquisition; furthermore, the utilization of these props enriches students' experiences, rendering the process of building their mathematical knowledge both relevant and meaningful. At the Elementary School level, students exhibit a marked preference for the use of props, as the incorporation of such tools fosters an environment where learners feel less like they are engaging in formal education and more like they are participating in a playful, enjoyable activity.

Drawing from prior research, which involved conducting interviews with a representative sample of fourth-grade students at the Primary School level, the researchers gathered insights revealing that the majority of students provided similar responses regarding their preferred learning methods. It was noted that the learning resources predominantly utilized within their educational institutions consisted of package books and student worksheets. However, it became evident that students demonstrated a lack of enthusiasm for engaging with materials such as student worksheets, indicating a clear preference for more interactive and stimulating learning experiences. Students expressed a collective agreement that the introduction of props would significantly enhance their interest in learning mathematics, thereby fostering a more engaging educational atmosphere. Subsequent studies have been conducted by various researchers focusing specifically on the learning of angular materials, employing media-assisted angular clocks to explore their impact on student comprehension and engagement in the subject matter.

1. Nurhuda & Hendrawan (2021), based on this research, learning angle material with the help of Angle Clock media affects student learning outcomes in Class III.
2. Hakim (2021), stated that there was an increase in the average score between pretest and posstest. In addition, it shows that the Angle Clock Media has a significant impact on student learning outcomes..

The case study showcasing the application of the Cooperative Learning model, specifically the TGT (Team Game Tournament) type, is prominently situated within the educational institution known as SD Negeri 03 Cibelok. The findings derived from the research presented in the academic journal indicate that the educational outcomes for the third-grade students at SD Negeri 03 Cibelok, particularly concerning the topic of angular materials, have demonstrated a remarkable level of learning consistency subsequent to the implementation of the TGT Model, which was further enhanced by the utilization of Angular Clock Learning Media. This notable achievement is evidenced by the statistical

analysis revealing that the calculated t-value (thitung) surpasses the critical t-value (ttable), specifically 17.327 being greater than 1.690, thereby confirming that there is indeed a statistically significant difference in the learning outcomes of students following the integration of the TGT Assisted Angular Learning Media into their educational experience.

The TGT (Team Game Tournament) cooperative learning model has been empirically validated to enhance student learning outcomes across a diverse array of academic subjects, including but not limited to, mathematics and science at the elementary school level. The profound influence of the TGT Model on the learning of angular concepts within an elementary school setting is something that the authors have meticulously analyzed through a comprehensive review of multiple academic journals.

#### A. Improved Learning Outcomes

1. Research from several journals shows that the use of TGT can improve student learning outcomes. For example, research at SD Negeri 2 Tira, South Buton Regency showed that the average student score increased from 71 to 75 and the learning completeness rate increased from 57.14% to 85.72%.
2. Another study at SD Negeri 70 Kutaraja Banda Aceh also showed an increase in student learning outcomes by using the TGT model, with an increase in the average teacher activity and student participation, and learning outcomes at KKM 65 achieved by 77.27%.

B. Increasing student participation The TGT model also increases student participation in the learning process. For example, a study at Jaraban State Elementary School showed that student engagement increased from 72% to 89%.

C. Increasing learning motivation The TGT model can also increase students' learning motivation. Students who participate in cooperative activities tend to be more motivated because they have to work together and participate in tournaments, thus increasing their engagement and understanding of the material.

The TGT model strategy on angle material can be applied as follows:

1. Implementation Strategy To implement the TGT Model on Angle Material, teachers should divide students into teams and explain the basic concepts of angles, types of angles, and planes to calculate angles on slopes. The teacher can then hold tournaments that test students' understanding of angles, such as drawing plane shapes at certain angles or using props to illustrate angles.
2. Activities and Tournaments The activities of the TGT model include various activities such as: Example: group discussions, presentations, tournaments. Students must work together to achieve goals and compete in tournaments to demonstrate understanding.

With the appropriate selection of educational models, strategic methodologies, and suitable media, it is anticipated that students will gain a comprehensive understanding of

the instructional materials provided in the learning corners of primary school settings. Furthermore, a conducive and enjoyable learning experience has the potential to significantly enhance academic performance, foster active engagement, and boost the intrinsic motivation of students throughout their educational journey. However, it is essential to ensure that adequate attention, effective guidance, and diligent supervision are provided to facilitate a harmonious and productive classroom environment. Educators must possess the necessary competencies to effectively manage and condition the classroom atmosphere, particularly because the Team Games Tournament (TGT) type of cooperative learning models are often perceived as being less conducive to a structured learning environment, leading to overcrowding and a sense of disorganization. Therefore, it becomes imperative for teachers to receive training and support in implementing these collaborative approaches in a manner that optimally benefits all learners involved. Ultimately, achieving a well-organized classroom that utilizes TGT models effectively hinges upon the educators' ability to cultivate an atmosphere that encourages cooperation, focus, and successful knowledge acquisition among their students.

#### **D. CONCLUSION**

The significance of engaging in mathematical education during the formative years of primary school, with a particular focus on corner materials, cannot be overstated, as it has been thoroughly evaluated that the implementation of a cooperative learning model such as the Team Games Tournament (TGT) is an exceptionally effective pedagogical approach that can significantly enhance students' comprehension and understanding of mathematical concepts. It is widely anticipated that a robust mathematical curriculum will not only facilitate the development of critical thinking and analytical abilities but will also foster essential problem-solving skills that are crucial for students' academic and personal growth. However, corner materials often pose a unique challenge for learners due to their inherently abstract nature, thus creating a pressing need for the incorporation of interactive and enjoyable instructional methodologies, such as the TGT model, to effectively engage students and facilitate their learning process.

The TGT approach actively involves students in small collaborative groups, wherein they are encouraged to work together, engage in playful activities, and compete against one another through structured academic tournaments. This dynamic and interactive framework not only aids in enhancing students' understanding of the material but also serves to bolster their motivation, increase their participation in learning activities, and develop their social skills in a meaningful context. A plethora of research studies have consistently demonstrated that the integration of the TGT model into angular learning environments yields significant improvements in student achievement and motivation levels, leading to a more enriching educational experience. Furthermore, the application of the TGT methodology promotes an atmosphere where students are encouraged to collaborate effectively, engage in healthy competition, and deepen their understanding of mathematical concepts through activities that are closely related to their everyday lives and experiences.

## E. REFERENCES

- Sari, N. Y., & Refnywidialistuti. (2018). Draft Bahan Ajar Materi Garis Dan Sudut Untuk Sd Kelas Iv Oleh. *Angewandte Chemie International Edition*, 6(11), 951–952., 10–27.
- I G. P. N. Harry Priyatna Putra, K. Udy Ariawan, I P. Suka Arsa. (2017) "Penerapan Model Pembelajaran Kooperatif Tipe Team Game Tournament Untuk Meningkatkan Hasil Belajar Perakitan Komputer". *Jurnal Pendidikan Teknik Elektro Undiksha*(6), 106-115.
- Hayati, Sri. "Belajar Dan Pembelajaran Berbasis Pembelajaran Kooperatif." Magelang: Pustaka Satu (2017).
- Lestari, M., & Sary, R. M. (2024). Penerapan Model Pembelajaran Tgt Berbantu Jam Sudut Ditinjau Dari Hasil Belajar Matematika Di Sekolah Dasar. *Jurnal Pendidikan Dasar Perkhasa: Jurnal Penelitian Pendidikan Dasar*, 10(1), 212-229.
- Fauziah, R., & Subhananto, A. (2016). Penerapan Model Pembelajaran Tgt (Teams Games Tournament) Untuk Meningkatkan Hasil Belajar Siswa Pada Materi Sumber Daya Alam Di Kelas Iii Sd Negeri 70 Kuta Raja Banda Aceh. *Jurnal Tunas Bangsa*, 3(1), 43-65.
- Armin, R. (2021). Pengaruh Model Pembelajaran Kooperatif Tipe Teams Games Tournament (Tgt) Terhadap Motivasi Belajar Matematika Siswa Kelas Iv Sd Negeri 12 Gu.
- Budiarti, Y., Sumirat, F., & Murti, A. K. (2021). Penerapan Model Pembelajaran Kooperatif Tipe Teams Games Tournament (Tgt) Untuk Meningkatkan Hasil Belajar Ipa Siswa Sekolah Dasar Pada Materi Sumber Daya Alam.
- Fitra, Y., Universitas, S., Tambusai, P. T., Tuanku, J., No, T., & Yenni, B. (2018). Penerapan Model Pembelajaran Kooperatif Tipe Team Games Tournament (Tgt) Untuk Meningkatkan Hasil Belajar Matematika Siswa Kelas V Sekolah Dasar Negeri 003 Bangkinang Kota.
- Hakim, A. R., Fadilah, I., & Oktaviana, R. (2021). Pengembangan Alat Peraga Jam Sudut Untuk Pembelajaran Matematika Pada Materi Sudut Di Kelas Iv Tingkat Sekolah Dasar. *Prosiding Penelitian Pendidikan Dan Pengabdian 2021*, 1(1), 1338.13.
- Nurhuda, N. I., & Hendrawan, B. (2021). Pengaruh Model Pembelajaran Visual, Auditori Dan Kinestetik (Vak) Berbantuan Media Jam Sudut Terhadap Prestasi Belajar Siswa Kelas Iii. *Buana Pendidikan: Jurnal Fakultas Keguruan Dan Ilmu Pendidikan Unipa Surabaya*, 17(1), 14-20.
- Fajar Nugroho, Dhessriyatno. 2013. Peningkatan Kualitas Pembelajaran Ipa Melalui Model Teams Games Tournament (Tgt) Pada Siswa Kelas V Sd Kaliwiru Semarang. Skripsi. Universitas Negeri Semarang.