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Implementation of the STAD Cooperative Learning Model to Improve Student Understanding

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Abstract

This study addresses the low student understanding and lack of active participation in the learning process, along with the challenge of maintaining motivation during the implementation of the STAD cooperative model. A qualitative approach with model development and classroom action research was used, focusing on grade XI students of SMAN 1 Pasuruan City. Data was collected through field observations and recordings during Civics lessons using the STAD model. The analysis centered on student cooperation, participation, understanding, and teacher effectiveness. The study found that the STAD cooperative model effectively increased student participation, material understanding, and interaction, as evidenced by improvements in formative test scores and group discussions. However, challenges such as sustaining motivation and involvement from both students and teachers need to be addressed with strategies for motivation, active teaching, and effective group management. Regular monitoring is essential to ensure optimal learning and significant improvements in outcomes. This research contributes to the development of cooperative learning, particularly the STAD model, by demonstrating its success in enhancing student engagement and comprehension. The findings highlight the importance of motivation and group management strategies and emphasize the role of continuous monitoring to ensure cooperative learning's effectiveness and sustainability in educational settings.

INTRODUCTION

Civic Education (PKn) plays a vital role in shaping students' character and preparing them to face societal challenges. According to Armianti et al. (2024) and Montessori et al. (2024), Civic Education is not merely a subject, but a fundamental foundation for developing intelligent, critical, and responsible citizens. Rafzan et al. (2024) also emphasize that Civic Education serves as a means to instill essential civic values in the context of national and societal life. However, as stated by Rahayu (2024), Civic Education faces major challenges, particularly in developing effective teaching methods to enhance students' comprehension. Dejene (2019) criticizes the continued dominance of conventional lecture-based methods, which tend to create a passive learning environment with minimal student engagement. As a result, discussion participation remains low and learning activities lack interactivity, which negatively affects students' understanding of the material. Mebert et al. (2020) add that this situation is reflected in unsatisfactory exam results and a lack of enthusiasm for the subject. Therefore, more innovative and participatory learning strategies are needed to encourage active student involvement and deepen their understanding of the material.

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Several previous studies have examined the effectiveness of cooperative learning models in improving student learning outcomes. Poerwati et al. (2020) found that the application of the jigsaw II cooperative model with the help of concrete objects significantly improved the mathematics abilities of early childhood, with the completion rate jumping from 29.17% in the initial observation to 91.67% in the second cycle. Meanwhile, Megawati et al. (2021) highlighted the differences in mathematics learning outcomes between students who used the jigsaw cooperative strategy and the direct method, as well as the effect of the interaction between learning methods and student personality types on their learning outcomes. Sukiyanto (2019) reported that teachers were able to manage learning very well, with student activity reaching 96%, positive responses of 87.55%, and individual learning completion of 77%. In addition, Shofi (2024) explained that cooperative learning involves the stages of orientation, exploration, deepening, and conclusion, which encourage students' roles and responsibilities both individually and in groups. Although various studies have discussed cooperative learning, there is still limited research that focuses on the implementation of the STAD method, especially in class XI of SMAN 1 Kota Pasuruan in the subject of Civics, so this research is relevant and important to fill this gap.

The purpose of this study was to explore the effectiveness of STAD type cooperative learning in improving the understanding of grade XI students of SMAN 1 Kota Pasuruan towards the national legal system in the subject of Citizenship Education (PKn). This study aims to fill the gap in knowledge related to the application of the STAD cooperative learning method in this context, so that it can provide a clearer picture of the impact of this method on student learning outcomes. The benefits of this study are expected to be a reference for teachers and education practitioners in developing more effective and interesting learning strategies, especially in PKn learning. In addition, the results of the study can be used as a basis for decision making in improving the quality of learning, so that students can understand the material more deeply and actively participate. Thus, this study also contributes to the development of education that is oriented towards improving student character and competence.

The hypothesis of this study is that the implementation of STAD type cooperative learning has a significant influence in improving students' understanding of Citizenship Education (PKn) subjects in class XI of SMAN 1 Kota Pasuruan. By implementing this learning strategy, it is expected that students can participate more actively and understand the material more deeply compared to conventional learning methods. This study assumes that the use of the STAD cooperative model is able to create a more interactive and collaborative learning environment, thus having a positive impact on student learning outcomes. Through an in-depth study of the application of this method, the study aims to provide strong empirical evidence to support changes in learning methods in the school, so that it can increase the effectiveness of PKn teaching. Thus, the results of the study are expected to be the basis for the development of more innovative and effective learning strategies in improving the quality of education in the future.

METHOD

This research employs a qualitative approach using a learning model development design and action method, as advocated by Jacob et al. (2021). This approach was selected to enable a detailed examination of student activities during the learning process, specifically focusing on the application of STAD (Student Teams-Achievement Divisions) cooperative learning devices in Civics subjects for class XI students at SMAN 1 Pasuruan City. According to Snyder (2019), this model allows for in-depth analysis of the dynamics between students and the learning environment. The study follows a classroom action research methodology, consisting of four stages: planning, implementation, observation, and reflection. Each learning cycle involves two face-to-face sessions, during which the STAD model is applied to enhance students' understanding of Civics content. Data is gathered through direct observations and field notes, as noted by Jamshed (2014), to capture the development of students' understanding throughout the learning process. This method is expected to provide a

comprehensive assessment of the effectiveness of STAD cooperative learning in improving student learning outcomes.

Data analysis in this study was conducted using observation sheets that assessed aspects of group cooperation, student participation, and their ability to understand the material. According to Onwuegbuzie et al. (2009), these criteria provide a comprehensive measure of student engagement and interaction during the learning process. The researcher employed in-depth qualitative analysis to assess the changes in student understanding over the course of the learning activities, as emphasized by Gupta et al. (2020), who suggest that qualitative methods are vital for capturing the complexities of student learning. The success of the study was determined by a noticeable improvement in student understanding of Civics through the implementation of STAD cooperative learning, a finding that aligns with Scales (2013), who highlights the positive impact of cooperative learning models on academic achievement. From a quantitative perspective, this improvement was evident in the percentage of students who demonstrated enhanced comprehension and active participation. Additionally, the teacher's ability to effectively implement the learning approach was a crucial indicator of success, as it directly influences the learning outcomes. Therefore, this study evaluates not only student learning outcomes but also the effectiveness of the teacher's application of the STAD cooperative learning model, as both are essential to determining its success in grade XI students at SMAN 1 Pasuruan City.

To enhance the explanation of the research methodology, it is essential to provide more detailed information regarding the participants involved, including the number of participants and their characteristics. This information should encompass the students' age, grade level, and educational background, which will offer a clearer understanding of the sample utilized in this study (Lim, 2024). Furthermore, it is important to specify the criteria used for selecting participants, such as whether they were selected randomly, based on academic performance, or according to other relevant factors (Crowe et al., 2015). Including such details will offer a more comprehensive context for the research conducted at SMAN 1 Kota Pasuruan, allowing for a more accurate depiction of the scope of the study. A thorough explanation of these factors will significantly strengthen the research's validity and relevance, making it easier for readers to grasp the conditions and background of the participants involved.

RESULTS AND DISCUSSION

Results

Results of Cycle I Action

In Cycle I, learning focused on the national legal system material by implementing a STAD cooperative approach. The learning process began with the delivery of material by the teacher, followed by the formation of heterogeneous groups. Each group received a different sheet of material to study and then presented the results of their discussion in front of the class. The teacher gave feedback and affirmation after the group presentation was completed. During the implementation, student responses varied. Some showed enthusiasm, while others seemed awkward in interacting. Over time, student involvement began to increase, although there were still groups that had not yet maximized their understanding of the material. In general, this approach encourages active participation, but is not yet fully effective for all groups. This is reflected in the results of daily repeat tests which showed an average score of only 60%, indicating that students' understanding of the material still needs to be improved through more appropriate advanced strategies.

Table 1. Comparison of Learning Outcomes Before and After Cycle 1

Rated aspect	Before Cycle 1	After Cycle 1	Improvement
Daily Test Score Percentage	60%	72%	20%
Active Participation in Group Discussion	40% of students are active	60% of students are active	+20% active students
Material Understanding (Teacher Evaluation)	3 out of 5 groups (60%)	4 out of 5 groups (80%)	+1 group (+20%)

Based on Table 1, there was a significant improvement in three aspects of learning after the implementation of Cycle 1. The percentage of daily test scores increased by 20%, indicating an improvement in students' understanding of the subject matter. In addition, students' active participation in group discussions also rose from 40% to 60%, reflecting better student engagement in the learning process. The number of groups that successfully achieved a good understanding of the material also increased from 3 to 4 groups. This progress indicates a positive direction in the learning process. However, the achievements have not been evenly distributed across all groups. Further efforts are needed to optimize the activities and understanding of all groups comprehensively. Therefore, the learning strategy in the next cycle should focus on encouraging active involvement from all students and ensuring that all groups gain an equal understanding of the material being taught.

Results of Cycle II Action

In Cycle II, the national legal system material was taught again with improvements to the learning steps based on reflections from Cycle I. The STAD approach was applied more optimally, creating a more conducive classroom atmosphere. Students began to show an attitude of helping each other in understanding the material and interactions between group members were seen to be increasingly active. Teachers were also more involved in monitoring the learning process, ensuring that each group moved according to its goals. This change had a positive impact on increasing student engagement and learning outcomes. However, there were still several groups that experienced obstacles in completing assignments on time. In addition, although the formative test scores increased compared to the previous cycle, there were still students who did not fully understand the material and needed additional guidance. This indicates the need for a more targeted mentoring strategy.

Table 2. Comparison of Learning Outcomes Before and After Cycle 2

Assessed Aspects	Before Cycle 2	After Cycle 2	Increase
Percentage of Formative Test Scores	72%	80%	11.11%
Active Participation in Group Discussions	60% of students are active	75% of students are active	+15% active students
Material Understanding (Teacher Evaluation)	4 out of 5 groups (80%)	5 out of 5 groups (100%)	+1 group (+20%)

Based on Table 2, learning outcomes showed a significant increase after the implementation of Cycle 2. The formative test scores increased from 72% to 80%, indicating progress in students' understanding of the learning material. In addition, students' active participation in group discussions increased by 15%, reflecting better involvement in the collaborative learning process. Another increase was seen in the number of groups that managed to achieve a good understanding of the material, which increased from 80% to 100%. This means that all groups were able to understand the material well after the implementation of the improved learning strategy in Cycle 2. These results indicate that the improvement in the learning strategy that was carried out succeeded in increasing the effectiveness of the teaching and learning process. However, special attention is still needed for several students who have not shown maximum results individually. Further assistance and a more personalized learning approach can help all students achieve competency evenly and optimally.

The results of observations and reflections in Cycle II revealed that although there was an increase, there were still aspects that needed to be improved, especially related to student involvement in group interactions and mastery of the material. Several students appeared to be not fully active in discussions and did not fully understand the concept. Therefore, the recommended actions for the next Cycle include providing more intensive learning motivation to increase student enthusiasm and participation. In addition, it is necessary to place a stronger emphasis on understanding the concept of the national legal system and legal classification so that the material is easier to understand. To improve group dynamics, it is recommended to redistribute students into more balanced groups and provide additional reinforcement from the teacher to strengthen understanding and discipline in the learning process.

Results of Cycle III Action

In Cycle III, the steps taken were to implement recommendations from the previous cycle by emphasizing additional motivation for students and increasing mastery of the material through the formation of new groups. Focus was also given to ensuring that interactions between students were effective and active. The results of this action showed an increase in students' interest in learning independently and the seriousness of the group in understanding the material. Interaction between students improved, supported by the increasingly active role of teachers in guiding the learning process. In addition, the average daily test scores increased significantly, indicating that students' understanding of the material was improving. This shows that the strategies implemented have succeeded in improving the overall quality of learning.

Table 3. Results of Cycle III Action – Implementation of STAD Cooperative Learning

No.	Aspect	Description of Improvement
1.	Strategy Improvement	Implementation of previous recommendations: increased motivation, new group formations, and more structured student interactions.
2.	Student Motivation	Students showed increased interest in independent learning due to motivational strategies and improved group dynamics.
3.	Group Dynamics	Formation of new groups led to more serious group discussions and better material comprehension.
4.	Student Interaction	More effective and active student interactions were observed, enhancing peer learning.
5.	Teacher's Role	Teachers played an increasingly active role in facilitating and guiding the learning process.
6.	Learning Outcomes	Significant increase in average daily test scores, indicating better understanding of the material.
7.	Overall Learning Quality	The overall quality of the learning process improved, showing positive results from the implemented strategy.
8.	Recommendations for Future Cycles	Although improvements were evident, further refinement and optimization of the STAD method are still needed to ensure full student participation and comprehension.

Thus, the actions taken in each cycle have proven effective in improving student learning outcomes. However, there are still several aspects that need to be improved and refined in the application of the STAD type cooperative learning method in class XI of SMAN 1 Kota Pasuruan. The improvement in learning that occurred shows that this strategy has a positive impact, but the implementation of the method needs to be continuously optimized so that all students can be actively involved and understand the material better. Continuous improvement is very important to achieve maximum learning outcomes in the class.

Discussion

Increasing Active Participation of Students through STAD Cooperative Learning

According to Thomas and Martina (2022), cooperative learning with the STAD (Student Teams Achievement Divisions) model has proven effective in increasing active student participation during the learning process. Based on the data in Table 2, student participation in group discussions increased from 60% to 75% after the implementation of Cycle 2. This increase shows the success of the STAD approach in encouraging students to be more directly involved in learning activities, not just being passive listeners. Ningsih (2023) argues that through this model, students become more active in discussing, exchanging opinions, and sharing knowledge with their group members. In addition, Darling-Hammond and colleagues (2019) stated that cooperative learning can increase student engagement because they work in heterogeneous teams with a common goal of achieving optimal learning outcomes. This approach not only increases learning motivation but also creates a more interactive and collaborative classroom atmosphere, so that students are more motivated and responsible for their learning process.

Increasing active student participation in cooperative learning has a significant impact on the classroom atmosphere which becomes more dynamic and interactive. According to Motwani and

colleagues (2022), the cooperative learning model is able to create a sense of positive dependence among group members. With this dependence, each student feels responsible not only for their own learning achievements, but also for the success of the entire group. This encourages students to be more active in asking questions, expressing opinions, and helping other group members understand the material being studied. Chin and Osborne (2008) added that this kind of learning environment greatly supports a more intense and collaborative discussion process, thus facilitating joint understanding of the material. In line with that, Sigalingging and colleagues (2023) argue that active student participation not only strengthens individual learning motivation but also deepens collective understanding of the material. This condition proves that STAD type cooperative learning is effective in building positive interactions and achieving more optimal learning outcomes.

The success of the STAD cooperative learning model in enhancing active student participation is also reflected in the significant improvement in material comprehension. Sari et al. (2024) state that after the second cycle, all groups managed to achieve 100% understanding of the material, up from 80% in the previous cycle. This indicates that active student involvement in group discussions greatly supports deeper internalization of the material. Amsari et al. (2024), referring to social learning theory, emphasize that social interaction is a crucial aspect of the learning process, where through discussion and collaboration, students can construct knowledge together. In line with this, Marougkas et al. (2023) assert that the STAD model, which focuses on effective cooperation among group members, strongly facilitates constructive social interaction in the learning process. Thus, students do not only learn individually, but also collectively, which strengthens and deepens their understanding of the material. This approach has proven to be effective in improving overall learning outcomes.

Although the STAD cooperative learning model shows positive results, there are still some students who have not achieved maximum learning outcomes. Therefore, special attention is needed so that all students can obtain competencies evenly. The strategy aims to ensure that each group member actively participates and no students are left behind in the learning process. For this reason, teachers must routinely monitor group dynamics, identify students who are less active, and provide appropriate motivation and guidance. In this way, teachers can ensure that each student contributes optimally and gets the full benefit of STAD cooperative learning, so that learning objectives can be achieved comprehensively and inclusively.

The Influence of the STAD Model on Improving Students' Understanding of Material

The implementation of the STAD cooperative learning model has been shown to positively impact students' understanding of the material. Akhmad (2020) explains that this model contributes to improved learning outcomes, as evidenced by the increase in formative test scores from 72% before Cycle 2 to 80% afterward. This improvement indicates that students made substantial progress in comprehending the subject matter, aligning with the fundamental goals of the learning process. Aningsih et al. (2023) argue that the STAD model is particularly effective in enhancing student understanding because it leverages cooperative learning in heterogeneous groups. The diversity within these groups, they note, facilitates more dynamic discussions and mutual assistance among students. In the same vein, Aida (2023) highlights that such group interactions enable students to share information, clarify difficult concepts, and build a stronger collective understanding. Thus, STAD cooperative learning fosters a supportive and engaging environment that significantly enhances student academic performance.

The increase in students' understanding of the material is also supported by a 15% rise in active participation in group discussions. Silva et al. (2021) emphasize that social interaction within cooperative learning settings plays a key role in enhancing students' cognitive abilities and conceptual comprehension. In line with this, De Felice et al. (2023) assert that when students engage in discussions and collaborate with peers, they actively exchange information, clarify learning content, and correct misunderstandings. Through these interactions, students are able to reinforce concepts they have not yet mastered by receiving explanations from their peers. Additionally, they are exposed

to diverse perspectives, which further enrich their understanding and broaden their knowledge. These expert views support the idea that the intense social interaction facilitated by the STAD cooperative learning model significantly contributes to improving the overall quality of students' understanding of the material.

The success of the STAD cooperative learning model in enhancing students' understanding of the material is evident from the achievement of all groups—100%—reaching a good level of understanding after the second cycle, an increase from 80% in the previous cycle. Jumahida et al. (2024) highlight this as clear evidence of the model's effectiveness in creating a supportive and equitable learning environment for all students. Through group collaboration, students are able to exchange ideas, engage in discussions, and clarify material collectively, resulting in deeper comprehension and better internalization of knowledge. This aligns with the constructivist view expressed by Ardiansyah and Ujihanti (2017), who emphasize the role of social interaction and the active construction of knowledge in the learning process. Supporting this perspective, Piaget, as cited by Atmaja and Sutikno (2024), asserts that learning is an active process in which students build their understanding through experience and interaction with their surroundings. The STAD model facilitates this by promoting collaboration, thereby enabling students to achieve a more optimal and equitable grasp of the material.

Although there has been a significant improvement in learning outcomes through the implementation of the STAD cooperative learning model, special attention is still required for students who have not yet achieved optimal results. Gillies (2016) asserts that the success of cooperative learning largely depends on effective group management, emphasizing that each member must actively participate to ensure no student is left behind. This is essential to ensure that the benefits of cooperative learning are distributed equitably among all learners. In this context, Kozlowski and Ilgen (2006) highlight the critical role of teachers in closely monitoring both individual and group learning progress. They argue that teacher involvement is key to identifying and addressing learning gaps. Furthermore, Cents-Boonstra et al. (2020) recommend that teachers provide additional support—such as individualized guidance, motivation, or tailored learning strategies—to assist students facing difficulties. With proper monitoring and timely intervention, all students can be supported in reaching the expected competencies, ensuring that the cooperative learning process operates optimally and inclusively for everyone.

Challenges and Strategies in Implementing the STAD Cooperative Learning Model

The implementation of the STAD cooperative learning model has shown positive progress; however, it is not without its significant challenges. Sharan (2010) points out that cooperative learning models often face obstacles such as limited time management, notable disparities in student abilities, and difficulties in effectively managing group dynamics. These issues can hinder the optimization of the learning process and the attainment of desired learning outcomes. Fittipaldi (2020) supports this view, noting that unequal participation and group management problems can affect the overall effectiveness of cooperative learning. To address these challenges, Adesina et al. (2022) recommend several strategic measures, including more flexible and realistic time planning, grouping students based on balanced academic abilities, and providing teacher training to enhance skills in managing student interaction and collaboration. With the consistent application of these strategies, the STAD model is expected to create a more supportive and inclusive learning environment, foster active student engagement, and contribute to sustainable improvements in academic achievement.

One of the major challenges in implementing the STAD cooperative learning model is maintaining consistent involvement and motivation from both teachers and students throughout the learning process. Dincă et al. (2023) emphasize that such consistency is essential to ensure the effective application of the STAD method and to achieve optimal learning outcomes. Observational and reflective findings indicate that without strong commitment and active participation from all parties, the achievement of learning objectives can be significantly hindered. Marco-Fondevila et al. (2022) highlight that student engagement and peer interaction—key elements in the success of

cooperative learning—are highly dependent on the sustained enthusiasm of participants. If motivation declines, the collaborative process can weaken, reducing the effectiveness of the model. Therefore, maintaining continuous enthusiasm and involvement is a critical factor that must be prioritized to ensure that the cooperative learning process operates as intended and yields meaningful benefits for student growth and development.

To address these challenges, the implementation of effective and sustainable strategies is essential. Torsdottir et al. (2024) emphasize that one key approach is to consistently foster student motivation, ensuring that their enthusiasm for learning is maintained throughout the learning process. Equally important is enhancing the role of teachers—not just as instructors, but as facilitators and active mentors who can guide, support, and encourage the participation of all students. In line with this, balanced group management is necessary, where each learning group is formed with attention to student diversity and includes clearly defined roles for each member to maximize involvement. Zamiri and Esmaeili (2024) advocate for regular monitoring and evaluation as crucial components in identifying potential obstacles early on. Caroline et al. (2023) further argue that prompt and appropriate interventions, based on continuous assessment, are vital to ensure the learning process runs smoothly. With the consistent application of these strategies, the STAD cooperative learning model can be implemented more effectively, leading to significant and sustained improvements in student learning outcomes.

A deep analysis of the various factors influencing the successful implementation of the STAD cooperative learning model is crucial. Saragih (2021) emphasizes that understanding these factors provides essential insight into optimizing the effectiveness of the learning approach. One key element that requires closer examination is the consistency of implementation and its contribution to enhancing student learning outcomes and the quality of peer interactions. Martin-Alguacil et al. (2024) highlight that consistent application of cooperative methods can significantly strengthen collaborative dynamics and knowledge retention among students. By aligning these findings with previous research, the validity and reliability of the data become more robust, enhancing the credibility of the conclusions drawn. Moreover, Darling-Hammond et al. (2023) argue that such comprehensive analysis allows for the development of more targeted and sustainable recommendations to improve cooperative learning models. This perspective reframes challenges as opportunities for growth and refinement. As a result, in-depth evaluations can drive innovation and continuous enhancement in learning quality, ensuring the benefits of the STAD model are fully realized by all students.

CONCLUSION

The conclusion of this study shows that the implementation of the STAD cooperative learning model approach has proven effective in increasing active participation, understanding of the material, and interaction of students during the learning process. The increase in formative test scores and student participation in group discussions confirms the success of this approach. However, the implementation of the STAD model faces challenges such as maintaining consistent motivation and involvement of teachers and students. Strategies such as ongoing motivation, the active role of teachers as facilitators, and good group management are needed to overcome these obstacles. Routine monitoring and evaluation are also important to ensure that all students can participate and understand the material evenly. With the right approach, the challenges faced become opportunities to improve and optimize the implementation of the STAD model, so that cooperative learning can run more effectively and sustainably, significantly improving learning outcomes in the classroom.

The implementation of the STAD cooperative learning model strengthens the theory of social learning and constructivism which emphasizes the importance of social interaction in the learning process. The results of this study support several experts who state that collaboration in heterogeneous groups can significantly increase active participation and understanding of the material. This finding also confirms the importance of consistent motivation and involvement in the effectiveness of cooperative learning. In learning practices, teachers need to play an active role as facilitators who

provide motivation and effective group management. Learning strategies must involve routine monitoring to ensure that all students are involved and understand the material. The implementation of the STAD model needs to be accompanied by continuous evaluation and adjustment so that learning is more optimal and student learning outcomes increase evenly.

This study is limited to the application of the STAD cooperative learning model in one class with a limited number of students, so the results may be less generalizable to a wider context. In addition, the measurement of student participation and understanding uses more quantitative data, while qualitative aspects such as motivation and group dynamics are less explored in depth. Consistency of implementation and external factors such as classroom conditions can also affect the results. Further research is recommended to involve larger and more diverse samples, and combine qualitative methods to obtain a more comprehensive picture of the dynamics of STAD cooperative learning. Studies can also explore the influence of external factors and motivational strategies in more detail to improve the effectiveness of this learning model in various educational contexts.

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AUTHOR CONTRIBUTION STATEMENT

Because the writer is an independent or solo player, everything related to writing is done by himself alone.

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