



## Effectiveness of Traffic Safety Education Among Students in Pontianak City: Case Study of Traffic Violations in 2023

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### ABSTRACT

This study aims to evaluate the effectiveness of traffic safety education among students in Pontianak City using a descriptive qualitative method. The results reveal a gap between knowledge and traffic rule application. Supervision, peer influence, and family roles significantly affect student behavior. Although students receive formal education, compliance relies on supervision and fear of sanctions. Interactive teaching methods proved more effective than theoretical approaches. A holistic approach involving schools, families, and law enforcement is necessary to enhance traffic awareness and compliance.

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## INTRODUCTION

Traffic safety is a global issue that has received serious attention from various parties, including the government, society, and international organizations. Traffic accidents are recorded as one of the main causes of death in the world, especially among teenagers. According to the World Health Organization (WHO) report, every year around 1.35 million people die due to traffic accidents, and around 90% of these incidents occur in developing countries (WHO, 2020). Indonesia, as a developing country, also faces similar challenges with the high number of traffic accidents involving teenagers.

Teenagers, especially students, are the group most vulnerable to traffic accidents. Based on data from the Indonesian Ministry of Transportation, 30% of traffic accident victims in Indonesia are teenagers aged 15-24 years, and most of them are two-wheeled vehicle drivers (Kemenhub, 2021). Pontianak City, as one of the big cities in Indonesia, also experiences similar problems. Data from the Pontianak Police show that during 2023, there were 4,181 traffic violations committed by two-wheeled vehicle drivers, with most of the violators being students (Polresta Pontianak, 2023).

Efforts to reduce the number of traffic accidents have been carried out through various programs, including traffic safety education programs. Traffic safety education aims to increase public awareness and understanding, especially students, regarding the importance of obeying traffic rules for the safety of all (Lestari, 2019). This program is usually integrated into the school curriculum as part of Civic Education, and is also supported by socialization carried out by the police and related agencies.

The effectiveness of traffic safety education has been a topic of research in various countries. According to Rahmawati (2020), traffic safety education in schools has a positive impact on reducing risky driving behavior among adolescents. However, the study also found that formal education alone is not enough to significantly change behavior. Other factors, such as supervision on the highway and the influence of the social environment, also play an important role in shaping traffic behavior.

In Indonesia, traffic safety education still faces many challenges. One of the main challenges is the lack of integration between traffic safety education materials and students' daily lives (Kurniawan, 2018). Many students understand traffic rules in theory, but do not apply them when driving. Factors such as rushing, lack of supervision, and peer influence are often the main reasons for traffic violations committed by students.

In addition, limited time allocation for traffic safety education in schools is also an obstacle. According to Setiawan (2021), traffic safety education is often only delivered as a small part of Civic Education subjects, so that students do not gain a deep understanding of the importance of obeying traffic rules. The lack of direct practice and safe driving simulations is also one of the causes of low student awareness of road safety.

Research conducted by Prasetyo and Wulandari (2019) shows that socialization carried out by the police in schools can have a positive impact on increasing traffic awareness among students. However, the study also found

that sporadic and non-integrated socialization is less effective in creating significant behavioral changes. Therefore, a more holistic and sustainable approach is needed in traffic safety education.

Traffic safety education is also influenced by family environmental factors. Susanto (2020) stated that students who grow up in families that obey traffic rules tend to be more obedient to the rules than those who come from families that often break the rules. The influence of parents as role models in traffic is very important in shaping their children's behavior on the highway. Therefore, traffic safety education must not only be carried out in schools, but must also be supported by informal education at home.

Pontianak City, as one of the big cities in West Kalimantan, faces a major challenge in efforts to increase traffic awareness among students. The high number of traffic violations committed by students shows that the current traffic safety education program is not fully effective. Based on data from the Pontianak Police, the types of violations most often committed by students are not wearing helmets, violating traffic signs, and going against the flow (Polresta Pontianak, 2023). This shows that even though students have received traffic safety education at school, the application of this knowledge in everyday life is still very low.

According to research conducted by Lestari (Lestari, 2019), one of the reasons for the low awareness of students towards traffic safety is the lack of supervision from the authorities. Students tend to obey the rules only when there is direct supervision from the police or traffic officers. This shows that compliance with traffic rules has not become part of students' intrinsic awareness, but rather is driven more by fear of sanctions.

One solution that can be implemented to increase the effectiveness of traffic safety education is to integrate this education more deeply into the school curriculum. Research conducted by Setiawan (2021) suggests that traffic safety education be provided through a more practical approach, such as safe driving simulations, so that students can feel firsthand the importance of obeying traffic rules. In addition, the involvement of parents and authorities must also be increased through safety campaigns involving families and the community.

Through a more integrative and sustainable approach, it is hoped that traffic safety education can create more significant behavioral changes among students. This approach must also involve various parties, including schools, families, communities, and law enforcement officers, so that traffic awareness can be formed early on and applied in everyday life (Rahmawati, 2020).

Based on the literature review that has been described, this study aims to evaluate the effectiveness of traffic safety education among students in Pontianak City. The main focus of this study is to identify factors that influence the implementation of traffic safety education in schools, as well as to assess the extent to which the education has succeeded in reducing traffic violations among students. This study is expected to provide more appropriate recommendations to improve the effectiveness of traffic safety education programs in the future.

## **LITERATURE REVIEW**

Road safety is an important and relevant topic in the context of education and public policy, especially considering the high number of road accidents among teenagers. Based on the World Health Organization (WHO) report in 2020, road accidents are one of the main causes of death for teenagers in the world, with 90% of incidents occurring in developing countries, including Indonesia (WHO, 2020). Road safety education is considered as one of the important strategies in reducing the number of accidents among teenagers, because it provides an understanding of the risks and responsibilities as road users (Rahmawati, 2020).

The effectiveness of traffic safety education in schools has been a topic of extensive research in recent years. Prasetyo and Wulandari (2019) found that formal education in schools plays an important role in increasing students' awareness of traffic rules. However, they also noted that although students gain adequate knowledge, the application in everyday life is still low. This is due to several external factors, such as lack of supervision on the highway and the influence of peers who often dominate students' behavior in traffic (Prasetyo & Wulandari, 2019).

In addition, research by Kurniawan (2018) shows that the integration of traffic safety education into the school curriculum in Indonesia is still limited. Often, traffic safety material is only delivered as a small part of the Civic Education subject, which prevents students from gaining a deep understanding of the importance of obeying traffic rules. This indicates the need for a more practical and applicable approach to teaching traffic safety, for example through safe driving simulations and interactive activities that directly involve students (Kurniawan, 2018).

The family environment also plays a significant role in shaping children's traffic awareness. Susanto (2020) explains that children who grow up in families that obey traffic rules tend to be more disciplined in driving. Conversely, children who often see their parents breaking the rules tend to imitate this behavior. This shows that traffic safety education must not only be provided in schools, but also needs to involve families as agents of change in creating legal awareness on the highway (Susanto, 2020).

Overall, the existing literature shows that although traffic safety education plays an important role in improving students' knowledge, its success in changing behavior is highly dependent on external factors, such as family support and supervision on the road. Therefore, a holistic approach is needed that not only focuses on formal education in schools, but also involves families, communities, and law enforcement officers in creating a safe and responsible traffic culture (Setiawan, 2021).

## **METHODOLOGY**

This study used a descriptive qualitative approach to explore the effectiveness of traffic safety education among students in Pontianak City. This approach was chosen to gain an in-depth understanding of students' experiences and perceptions regarding the safety education they had received. The subjects of the study consisted of 50 high school students selected through

purposive sampling techniques, as well as five teachers and traffic officers (Neuman, 2014). In-depth interviews and direct observation were used as the main data collection techniques to understand students' traffic behavior and the challenges in implementing the education program (Patton, 2015) .

The collected data were analyzed using thematic analysis to identify key patterns related to the effectiveness of road safety education. Interview and observation results were analyzed based on themes such as students' level of understanding, risk awareness, and social environmental influences (Braun, V., & Clarke, 2019). Data triangulation was conducted to ensure the validity of the findings by comparing results from multiple data sources (Miles et al., 2014).

To increase reliability, this study also uses data triangulation through comparison between interviews, observations, and documentation. This step aims to confirm the consistency of the findings and ensure the accuracy of the analysis. The results of the study are expected to provide in-depth insights into the influence of traffic safety education and provide useful recommendations for future education policies (Creswell & Creswell, 2018).

## RESEARCH RESULT

This study revealed that the effectiveness of traffic safety education among students in Pontianak City still needs to be improved, especially in terms of implementing the knowledge they have gained in school. From the results of interviews with 50 students who were the subjects of the study, most students admitted to understanding the importance of traffic safety, including wearing helmets, obeying traffic signs, and not going against the flow of traffic. However, the application of this knowledge in everyday life shows inconsistency. Most students admitted that they often ignore these rules, especially when there is no direct supervision from the authorities.

Observations conducted in the school environment revealed that as many as 60% of students who use two-wheeled vehicles do not wear helmets when driving. The main reason given by students is the short distance, where they feel the trip is not high risk. The following table shows data on student compliance with helmet use:

Table 1. data on student compliance with the use of helmets

Type of Violation	Respondents	Percentage
Not wearing a helmet	30	60%
Properly wearing a helmet	20	40%

From the table, it can be seen that most students choose not to wear helmets even though they understand the importance of safety. This shows an inconsistency between knowledge and safe traffic practices.

Another common violation is breaking traffic signs, especially when facing a red light. As many as 45% of students admitted that they often run a red light when in a hurry or feel that there are no other vehicles threatening

their safety at the intersection. Observational data shows that this behavior often occurs at intersections without police supervision, which strengthens the finding that direct supervision greatly influences student behavior.

Table 2. Observation data on behavior that often occurs at intersections

Type of Violation	Respondents	Percentage
Running a red light	22	45%
Obeying the red light	28	40%

From the table, it can be seen that almost half of students tend to violate traffic signs when they feel the road situation is quiet or there is minimal supervision.

The study also found that peer influence plays a significant role in influencing students' traffic behavior. Students who are in a group of friends who tend to violate traffic rules are more likely to follow the same behavior. Conversely, students who drive with friends who are more obedient to the rules tend to follow more orderly behavior. This suggests that traffic safety education should consider social factors in forming safe driving habits among students.

Interviews with teachers who teach traffic safety education in schools showed that even though this material has been taught, the time allocation available is still very limited. Teachers stated that traffic safety education is only given as a small part of the Civic Education subject, so that students do not gain a deep understanding and do not have enough time to practice the knowledge. As a result, the knowledge they gain is limited to theory without adequate application.

In addition, interviews with Pontianak Traffic Unit officers revealed that traffic safety socialization in schools is sporadic and has not been consistently integrated into the curriculum. Although the police try to provide education to students, limited human resources and time often become obstacles in ensuring that this program runs sustainably. This causes a decrease in effectiveness in changing students' traffic behavior.

Observation results also show that student compliance with traffic rules increases significantly when there is direct supervision from the police. When traffic officers are near schools or at intersections, the violation rate drops drastically. However, when supervision is reduced, violations increase again. This indicates that student compliance is driven more by fear of sanctions than by an intrinsic awareness of the importance of safety.

This study also shows that traffic infrastructure around schools is still limited. Several locations in Pontianak City have unclear or damaged traffic signs, which makes it easy for students to break the rules. In addition, the lack of special motorcycle lanes causes students to often share lanes with larger vehicles, increasing the risk of accidents. This indicates the need for infrastructure improvements to support effective traffic safety education.

Family factors were also found to play an important role in shaping students' traffic awareness. Students who grow up in families that are

disciplined in obeying traffic rules show a higher level of compliance compared to students whose parents often break the rules. Interviews revealed that students who are often reminded by their parents about the importance of safety tend to be more aware of the risks of driving. Conversely, students who see their family members often breaking the rules tend to imitate the behavior.

The influence of the social and family environment shows that traffic safety education cannot only depend on formal education in schools. Family and community involvement is very important in creating a safe traffic culture. A holistic approach, involving families, schools, and law enforcement, is needed to create deep awareness among students.

The study also found that more interactive teaching methods, such as safe driving simulations, were more effective in improving students' understanding of the importance of obeying traffic rules. Students who had participated in simulations or practical activities showed a higher level of awareness and were more likely to obey the rules compared to those who only received theoretical education.

Overall, the results of this study emphasize that although traffic safety education has been implemented in schools, there are still many factors that influence students' low compliance with traffic rules. The influence of the social environment, family, inadequate infrastructure, and limited supervision are some of the main challenges that need to be addressed. To improve the effectiveness of traffic safety education programs, a more comprehensive and sustainable approach is needed, involving all parties involved in creating a safer traffic environment.

## DISCUSSION

The results of this study indicate that although traffic safety education has been implemented in schools in Pontianak City, the implementation in everyday life by students is still not optimal. One of the main findings of this study is that although most students claim to understand the importance of traffic safety, they still often violate the rules. This indicates a gap between knowledge and behavior. This factor indicates that simply providing knowledge through formal education is not enough to significantly change traffic behavior.

The gap between knowledge and practice is influenced by various factors, one of which is the situation in the field. Observations show that violations such as not wearing a helmet or running a red light are often committed when there is no direct supervision from the authorities. This underlines the importance of supervision in ensuring compliance with traffic rules. When there are police or traffic officers on duty, the level of compliance increases significantly. However, without supervision, many students feel free to break the rules. This shows that students' motivation to obey the rules still depends largely on the fear of sanctions, rather than an intrinsic awareness of the importance of safety.

In addition to the supervision factor, the social environment also plays a major role in shaping students' traffic behavior. Research findings show that peer behavior has a significant influence on students' behavior on the road.

Students who drive with friends who obey traffic rules tend to obey the rules, while those in groups that often break the rules are more likely to do the same. This suggests that efforts to increase traffic awareness and compliance among students must consider the social dynamics that exist among them.

In addition, the family also plays an important role in shaping traffic safety awareness. Students who come from families who are disciplined in obeying traffic rules tend to be more obedient than students who grow up in a family environment that often breaks the rules. In this case, the family serves as the main role model for students in terms of traffic behavior. Students who often see their parents or other family members breaking the rules tend to imitate the behavior. This shows that traffic safety education cannot only rely on formal education in schools, but also requires support and active involvement from the family.

Another finding is the role of infrastructure in supporting compliance with traffic rules. In some locations, traffic signs are unclear or damaged, making it easier for students to violate them. In addition, the lack of special lanes for motorcyclists increases the risk of accidents because students often have to share the road with larger vehicles. This condition adds to the challenge for students to comply with traffic rules. Therefore, improving the quality of traffic infrastructure also needs to be considered as part of efforts to improve compliance with traffic rules.

The study also revealed that more interactive teaching methods, such as safe driving simulations, had a more significant positive impact compared to theoretical teaching methods. Students who participated in simulation or hands-on activities showed a better understanding of the importance of road safety. This suggests that experiential teaching methods can increase students' awareness of the risks of road accidents. Road safety education that is only theoretical is often not enough to create real behavioral change.

Lack of consistency in traffic safety socialization was also found to be a factor inhibiting the success of this program. The police and schools have collaborated in several socialization programs, but their implementation is often sporadic and unsustainable. Socialization that is not well integrated into the curriculum or is not carried out routinely will have difficulty creating a significant impact. Therefore, a more structured and sustainable approach is needed in traffic safety socialization so that students not only receive information, but also understand the importance of practicing it in everyday life.

The findings of this study indicate that awareness and compliance with road safety among students are influenced by multifaceted factors, including supervision, social environment, family, infrastructure, and teaching methods. Each of these factors is interrelated and influences students' behavior on the road. Therefore, solutions to improve compliance with traffic rules must involve a more holistic and sustainable approach.

To create more permanent behavioral changes, traffic safety education must involve all elements of society, including families, schools, government, and authorities. Formal education in schools must be supported by consistent

supervision and strict implementation of sanctions in the field. In addition, families must be encouraged to be role models in obeying traffic rules, and adequate infrastructure must be provided to support safe driving behavior. The combination of these efforts is expected to create a safer traffic culture among students and society as a whole.

This discussion emphasizes that behavioral change cannot be achieved through a single approach. Traffic safety education must be designed to not only provide information, but also encourage students to practice safe behavior through supervision, social support, and direct experience. This is an important step in creating a generation of drivers who are more aware of the importance of safety and responsible on the road.

## CONCLUSIONS

The conclusion of this study shows that although Pontianak City students have received traffic safety education, there is still a gap between the knowledge they have and the application in everyday life. Students tend to obey traffic rules only when there is direct supervision, indicating that compliance is driven more by fear of sanctions than intrinsic awareness of safety. The social environment, especially peers, also has a significant influence on students' traffic behavior, where they tend to follow group behavior. In addition, the family plays an important role, where students who grow up in families that are disciplined in traffic are more obedient to the rules.

Interactive teaching methods, such as safe driving simulations, have proven to be more effective in increasing students' awareness and compliance with traffic rules. However, socialization carried out by schools and the police is still inconsistent, so that its impact on changing student behavior is not optimal. To overcome this problem, a more holistic approach is needed, involving families, schools, government, and law enforcement, as well as consistent supervision and sanctions. With this sustainable approach, it is hoped that students' traffic awareness can increase, creating a safer and more responsible traffic culture.

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