Empowering Youth for Safer Roads: A Scenario-Based Approach to Road Safety Education in San Fernando, Pampanga, Philippines

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Abstract: Road safety remains a pressing concern in the Philippines, particularly in urban areas where high pedestrian volumes and vehicular traffic contribute to frequent road crashes. This study explores the implementation of the "Train the Trainer: Scenario-Based Road Safety Education for Youth Leaders" program in the City of San Fernando, Pampanga, aimed at empowering student leaders and community stakeholders to become advocates for pedestrian safety. Utilizing an action research approach, the study engages the City Public Order and Safety Coordinating Office (CPOSCO) and local educational institutions in developing a structured road safety training model incorporating lectures, workshops, and scenario-based learning. The research highlights the effectiveness of peer-led road safety education in promoting behavioral change, improving compliance with traffic regulations, and enhancing awareness among youth and the broader community. Key findings from SWOT analysis, surveys, and stakeholder interviews underscore the critical gaps in enforcement, infrastructure, and public discipline that exacerbate pedestrian risks. To address these challenges, the study proposes policy recommendations, infrastructure improvements, digital engagement strategies, and a Train the Trainer road safety curriculum for student leaders. By integrating education, enforcement, and engineering solutions, the research advances a comprehensive framework for sustainable road safety education, with implications for broader adoption in other urban settings.

Keywords: Road Safety, Train the Trainer, Pedestrian Safety, Action Research, Community Engagement

1. INTRODUCTION

Road safety remains a critical public health issue in the Philippines, with alarming statistics of fatalities and injuries from road crashes continuing to rise each year. Latonero, et.al. (2022) observed that there are about *1,500 pedestrian deaths per year among children aged 0-19 years,* based on their analysis of data for two (2) decades obtained from the PSA or the Philippine Statistics Authority (2010-2019). Moreover, road safety continues to be a pressing concern around the country, particularly in urban landscapes, where the high density of traffic

and diverse road users contribute to frequent road crashes and potential fatalities. Thus, the same constitutes the major concern of the general public who expect their respective local government units (LGUs) to immediately resolve.

Tables 1 and 2 provide a comparative analysis of pedestrian-related road crashes in 2023 and 2024. The data reveal a concerning increase in pedestrian crash incidents, rising from 24 cases in 2023 to 49 cases in 2024—a significant surge that points to worsening road conditions for pedestrians and highlights the growing risks they face daily.

Table 1. City of San Fernando, Pampanga Road Crash Report 2023

ROAD CRASH REPORT 2023

NO.	TYPE OF ROAD CRASH	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	TOTAL
1	COLLISION OF VEHICLES	60	66	100	68	85	90	87	84	90	90	86	80	986
2	SELF-ACCIDENT	1	3	2	3	5	2	6	1	2	5	1	2	33
3	PEDESTRIAN	2	0	1	1	3	2	1	5	3	4	2	0	24
4	HIT & RUN	1	0	0	0	0	0	0	0	0	0	0	0	1
5	SELF-ACCIDENT – DAMAGED PROPERTY	0	0	0	1	1	0	1	0	0	0	0	0	3
6	VEHICULAR CRASH- DAMAGED PROPERTY	0	0	2	0	1	0	0	0	0	0	0	0	3
	TOTAL	121	209	105	73	95	94	95	90	95	99	89	82	1050

NO.	MORTALITY RATE	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	TOTAL
1	PHYSICALLY INJURED	35	21	37	28	29	32	21	37	28	34	14	26	342
2	MORTALITY	0	0	0	0	0	0	0	0	0	0	1	0	1
	TOTAL	32	52	37	28	29	32	39	50	28	65	15	26	343

Table 2. City of San Fernando, Pampanga Road Crash Report 2024

ROAD CRASH REPORT 2024

NO.	TYPE OF ROAD CRASH	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	TOTAL
1	COLLISION OF VEHICLES	113	182	203	229	212	228	183	217	223	233	252	260	2535
2	SELF-ACCIDENT	2	10	9	7	9	7	10	16	18	7	9	15	119
3	PEDESTRIAN	0	7	3	1	3	5	6	5	2	4	6	7	49
4	HIT & RUN	3	3	2	2	1	0	1	0	2	1	0	1	16
5	SELF-ACCIDENT – DAMAGED PROPERTY	2	5	1	4	0	0	0	0	0	1	0	1	14
6	VEHICULAR CRASH- DAMAGED PROPERTY	1	2	1	0	0	0	0	0	2	0	1	1	8
	TOTAL	121	209	219	243	225	240	200	238	247	246	268	285	2741

NO.	MORTALITY RATE	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	TOTAL
1	PHYSICALLY INJURED	29	50	52	49	63	54	39	50	70	64	55	83	658
2	MORTALITY	3	2	0	0	2	1	0	0	1	1	0	0	10
	TOTAL	32	52	52	49	65	55	39	50	71	65	55	83	668

In the course of addressing road safety issues, the LGUs realized two (2) important realities, namely: 1) the need for a coordinated and multifaceted approach, involving local communities, government agencies, and the private sector and 2) the need to prioritize road safety education, implement engineering interventions, and enact robust policy reforms. Such efforts are essential not only to safeguard lives and mitigate the incidence of road crashes but also to foster long-term urban safety and sustainability. The pursuit of the present study is based on these

perspectives as the researchers comply with actual immersion requirements in their capacity as student-consultants.

Thus, the researchers focused on the problem scope for road safety in the City of San Fernando, Pampanga, facilitated through a collaborative partnership with the City Public Order and Safety Coordinating Office (CPOSCO). It includes several significant challenges related to road safety practices and compliance. Notable among these challenges are high traffic density, the presence of diverse road users, inadequate infrastructure, behavioral issues, and insufficient regulatory enforcement.

2. OBJECTIVES OF THE STUDY

This research is primarily an exploratory journey towards the establishment of innovative educational programs like "Train the Trainer," City Public Order and Safety Coordinating Office (CPOSCO) aimed at empowering student leaders to act as catalysts for road safety, addressing behavioral, infrastructural, and regulatory challenges. Likewise, the said program aims to:

- To develop a strong sense of awareness and responsibility for road safety among participants, enabling them to contribute to safer road environments for themselves and their communities;
- To reduce road crashes through comprehensive education and advocacy efforts focused on both pedestrians and young drivers; training effectively.
- To equip student leaders with the skills necessary to facilitate scenario-based road safety;
- To strengthen collaboration between government agencies, educational institutions, and community stakeholders to promote a culture of road safety; and
- To produce a comprehensive road safety booklet as a resource to educate and guide the community in practicing safe road behaviors.

3. SIGNIFICANCE OF THE STUDY

The study depicts a model of collaboration between and among the researchers and stakeholders in creating initiatives that underscore the importance of youth leadership in addressing road safety issues. By providing a framework for student-led advocacy, it fosters a culture of shared responsibility among road users and promotes safer urban environments through education, legislation, and infrastructure improvements.

4. SCOPE AND LIMITATIONS

The study focuses on improving pedestrian safety and promoting behavioral change through empowering programs that engage student leaders as facilitators and advocates for road safety. It includes practical demonstrations of safe road practices and emphasizes community education and advocacy efforts within the City of San Fernando, Pampanga.

The study is limited to the City of San Fernando and selected schools, restricting its reach or application to other areas. Additionally, it does not comprehensively address broader national traffic safety standards or systemic road safety challenges.

5. REVIEW OF RELATED LITERATURE

This section presents a comprehensive review of related literature that explores the theoretical foundations and empirical evidence supporting scenario-based road safety education. It examines key studies on road safety training, best practices in facilitating behavioral change, and the role of policy and infrastructure improvements in mitigating road-related risks.

One of the most effective methods is scenario-based training, which enhances situational awareness, hazard perception, and decision-making skills. Noori et al. (2017) conducted a study on the impact of scenario-based learning in high-risk environments, emphasizing that realistic scenarios improve response time and retention of safety protocols. Their research found that when individuals are trained using interactive case studies and simulated environments, they are more likely to recall and apply safety measures effectively in real-world situations.

Youth leaders play a crucial role in peer-to-peer learning environments, promoting road safety awareness within their schools and communities. Research suggests that road safety programs involving youth-led campaigns and workshops create a greater sense of responsibility and accountability among young individuals (Walugembe et al., 2024). The youth leaders' peers are more receptive to learning when the youth leaders serve as facilitators, as they relate better to individuals from their age group. Additionally, training youth leaders using scenario-based methods enhances their ability to translate theoretical knowledge into practical application. Studies indicate that incorporating real-life case studies, group discussions and hands-on training helps youth leaders develop strong advocacy skills which they can use to influence their peers effectively and positively (Shahril & Sidek, 2023).

Youth engagement in road safety programs is crucial in encouraging peer-driven behavioral change. Lieshout (2011) explored the impact of youth-led road safety initiatives and found that teaching fellow students about road safety is significantly more effective than traditional teacher-led instruction. The research suggests that young people respond better to peers who share similar experiences, making them more receptive to safety messages. This study directly supports the present research by allowing students to take on the role of trainers and advocates, the program leverages peer influence to create a culture of safety awareness.

Behavioral change is a critical goal in road safety education, as awareness alone is insufficient to reduce road crash risks. Alonso et al. (2018) findings indicate that interactive education, real-world practice, and continuous reinforcement strategies result in long-term safety improvements. The study suggests that simply educating students on traffic rules is not enough to instill safe behavior; instead, programs must actively engage students in decision-making and real-world applications. This aligns with the current research’s multifaceted approach, which integrates education, enforcement, and infrastructure improvements to create a comprehensive pedestrian safety program.

6. METHODOLOGY

6.1 Research Design

The study utilized the action research approach, described by Edmons and Kennedy (2017) as a research design that enables individuals to come up with functional/doable solutions to problems encountered. Specifically, the participant action research (PAR) model was chosen because the researchers are active participants, playing the role of facilitators or consultants in seeking practical and doable solutions to the problem under investigation. Figure 1 shows the cyclical process of PAR undertaken by the researchers to conceptualize and propose the establishment of "Train the Trainer: Scenario-Based Road Safety Education" program (Chevalier and Buckles, 2013 as cited by Edmonds and Kennedy, 2017).

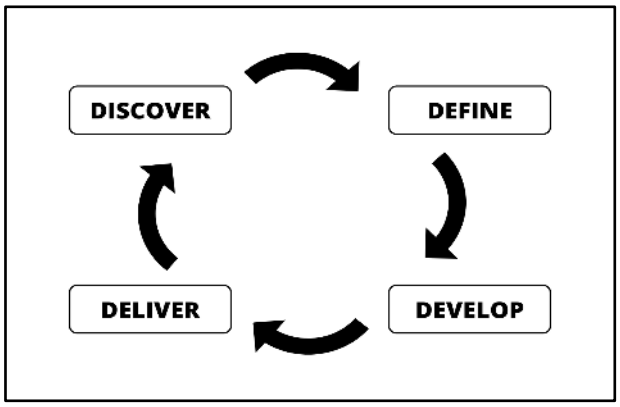


Figure 1. The Cyclical Process Framework of Action Research

However, this study is primarily focused on the first two (2) phases of the cyclical action research framework illustrated in Figure 1. The Discovery Phase, comprised of identifying the problem to be investigated, collecting and analyzing the data, while Phase 2 focused on conceptualizing and delivering the interventions or functional doable solutions. The last two (2) phases represent future action steps as implied in the study.

6.2 Research Locale

The study was conducted in the City of San Fernando, Pampanga, the capital City of Pampanga province. Its strategic location in the heart of Central Luzon, Region III, turned it into an administrative center for the Region, thus, accommodating the regional offices of the government's line agencies. The city serves as a regional center for commerce, education and governance with a growing urban population and increasing vehicular traffic. Given its strategic location as a major transportation hub, road safety has become a critical concern especially for students and young pedestrians. This is also the location for the three (3) schools covered in this study: Dolores Elementary School, San Fernando Elementary School, and Pampanga High School. Pampanga High School, in particular served as the primary site for the youth leadership component of the program, while the elementary schools provided additional insights to assess early road safety education and to examine how road safety awareness among younger students can be strengthened through school-based initiatives. Pampanga High School will serve as the primary site for the implementation of this study, as it has an established student leadership structure capable of facilitating peer-to-peer learning.

6.3 Data Collection and Analysis

The goal of this data collection process is to gain a holistic understanding of the current road safety conditions in the City of San Fernando, Pampanga, particularly in school areas. Through quantitative and qualitative research methods, the study evaluates existing road safety policies, infrastructure, enforcement measures, and public awareness levels.

The researchers relied heavily on two (2) sources of data:

6.3.1 Stakeholders Secondary Data and Interview

The City Public Order and Safety Coordinating Office (CPOSCO) of the LGU-City of San Fernando, Pampanga, the partner agency for this research, provided both secondary and primary data relevant to road safety conditions. Secondary data included official documents, statistics, and records related to road incidents, traffic violations, and infrastructure planning.

Primary data were collected through interviews with key CPOSCO personnel, including the Department Head, Traffic Engineering personnel, Research and Planning Unit personnel, Education and Training Unit personnel, Radio and Communication Unit personnel, Records Management Unit personnel, Traffic and Mobile Enforcement Unit personnel, Transport Regulatory Unit personnel, Public Order and Management Section personnel, Security and Support Unit personnel, and Enforcement Unit personnel.

The insights gained from these interviews provided a comprehensive understanding of local road safety issues, enforcement challenges, and policy initiatives that impact pedestrian safety and traffic management.

The data gathered were processed and organized with the use of appropriate analytic tools, namely the SWOT Analysis for data obtained from the CPOSCO and descriptive statistics and graphs/charts for data gathered from onsite visits and surveys. Data analyses focused toward obtaining a nuanced understanding of the current state of road safety in terms of gaps, best practices and data-driven recommendations for enhancing pedestrian safety.

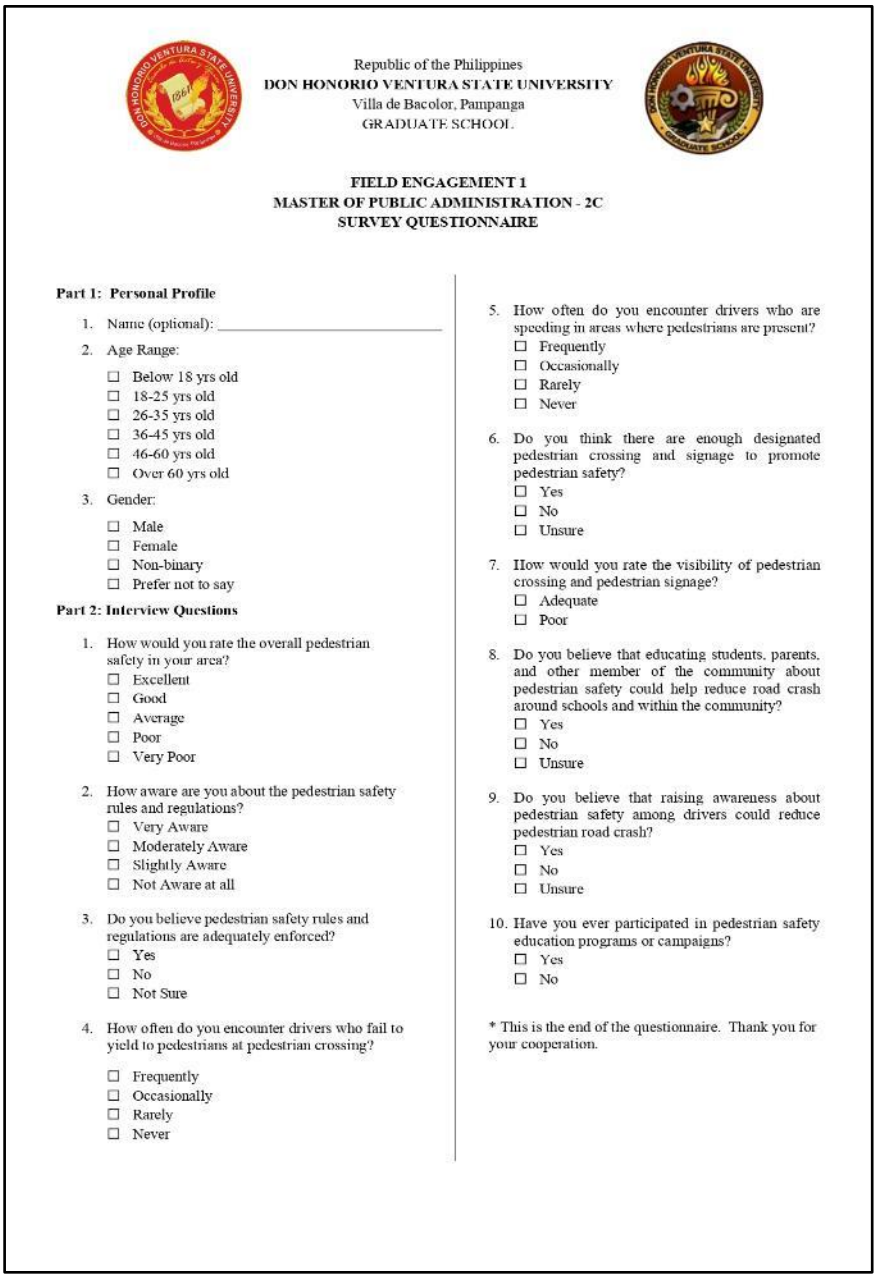
Figure 2. Interview with CPOSCO

6.3.2. Survey Questionnaire

An onsite survey was conducted at the three (3) aforementioned schools to gather primary data or first-hand insights into road safety conditions, where a simple random sampling technique was applied to ensure fairness and generalizability of findings. Students and other stakeholders were interviewed such as parents/guardians, faculty and school personnel. These stakeholders were chosen and selected based on the roles in safety education and those with direct involvement in the youth's participation in road safety. The researchers engaged fifty (50) respondents using a questionnaire. The questionnaire and interviews were designed to collect the following data:

A. Demographic Profile of Respondents – To understand the diversity of participants and how their perspectives may vary based on age and gender;
B. General Perception and Awareness on Pedestrian Safety – To measure the level of awareness regarding road safety regulations and common pedestrian risks;
C. Enforcement and Compliance – To evaluate the effectiveness of law enforcement in ensuring adherence to pedestrian safety rules;
D. Infrastructure and Facilities – To assess the availability and visibility of pedestrian crossings, pedestrian signage, and traffic control measures in school zones; and
E. Education and Awareness Programs – To explore the role of community engagement and pedestrian safety campaigns in improving safety outcomes.

The figure below shows the survey questionnaire used in the study.



Republic of the Philippines
DON HONORIO VENTURA STATE UNIVERSITY
Villa de Bacolor, Pampanga
GRADUATE SCHOOL

FIELD ENGAGEMENT 1
MASTER OF PUBLIC ADMINISTRATION - 2C
SURVEY QUESTIONNAIRE

Part 1: Personal Profile

1. Name (optional): _____
2. Age Range:
   - ☐ Below 18 yrs old
   - ☐ 18-25 yrs old
   - ☐ 26-35 yrs old
   - ☐ 36-45 yrs old
   - ☐ 46-60 yrs old
   - ☐ Over 60 yrs old
3. Gender:
   - ☐ Male
   - ☐ Female
   - ☐ Non-binary
   - ☐ Prefer not to say

Part 2: Interview Questions

1. How would you rate the overall pedestrian safety in your area?
   - ☐ Excellent
   - ☐ Good
   - ☐ Average
   - ☐ Poor
   - ☐ Very Poor
2. How aware are you about the pedestrian safety rules and regulations?
   - ☐ Very Aware
   - ☐ Moderately Aware
   - ☐ Slightly Aware
   - ☐ Not Aware at all
3. Do you believe pedestrian safety rules and regulations are adequately enforced?
   - ☐ Yes
   - ☐ No
   - ☐ Not Sure
4. How often do you encounter drivers who fail to yield to pedestrians at pedestrian crossing?
   - ☐ Frequently
   - ☐ Occasionally
   - ☐ Rarely
   - ☐ Never
5. How often do you encounter drivers who are speeding in areas where pedestrians are present?
   - ☐ Frequently
   - ☐ Occasionally
   - ☐ Rarely
   - ☐ Never
6. Do you think there are enough designated pedestrian crossing and signage to promote pedestrian safety?
   - ☐ Yes
   - ☐ No
   - ☐ Unsure
7. How would you rate the visibility of pedestrian crossing and pedestrian signage?
   - ☐ Adequate
   - ☐ Poor
8. Do you believe that educating students, parents, and other member of the community about pedestrian safety could help reduce road crash around schools and within the community?
   - ☐ Yes
   - ☐ No
   - ☐ Unsure
9. Do you believe that raising awareness about pedestrian safety among drivers could reduce pedestrian road crash?
   - ☐ Yes
   - ☐ No
   - ☐ Unsure
10. Have you ever participated in pedestrian safety education programs or campaigns?
    - ☐ Yes
    - ☐ No

* This is the end of the questionnaire. Thank you for your cooperation.

Figure 3. Survey Questionnaire

Ensuring pedestrian safety, particularly in school environments, is a critical aspect of community well-being. Schools are high-traffic areas where students, parents, and faculty navigate daily road crossings, making safety measures essential. This study aims to assess the perception, enforcement, and effectiveness of pedestrian safety measures in school zones, focusing on three key institutions: Dolores Elementary School, San Fernando Elementary School, and Pampanga High School. By understanding existing challenges, this research seeks to inform policy recommendations and improve pedestrian safety in these environments.

Figure 4. Interview with students, parents/guardians, and faculty

7. RESULTS AND DISCUSSION

Pedestrian safety in school zones is crucial due to high foot traffic from students, parents, and faculty. Effective measures can reduce road crashes and enhance community well-being. This study aims to assess the perception, enforcement, and effectiveness of pedestrian safety measures in school zones, focusing on three key institutions: Dolores Elementary School, San Fernando Elementary School, and Pampanga High School. By understanding existing challenges, this research seeks to inform policy recommendations and improve pedestrian safety in these environments.

Based on the stakeholder's interview, including local government officials, several critical insights emerged regarding pedestrian safety in school environs.

7.1 Results of SWOT Analysis

Table 3 contains the summary of the SWOT Analysis wherein the best practices (strengths) of CPOSCO comprised of 1) experienced personnel, 2) coordinating functions, and 3) effective information dissemination. The observed operational efficiency of CPOSCO is its commitment to *hiring experienced personnel* with in-depth knowledge of traffic laws and regulations. This foundational expertise ensures that the staff is well-equipped to address the complexities of urban traffic management and pedestrian safety. The said Office has a strong emphasis on continuous professional development, ensuring comprehensive training programs for the employees to enhance their skills and keep them abreast of the latest developments in traffic

management and enforcement practices. *Coordinating functions* emerged from the seamless collaboration with various departments and agencies, including the Philippine National Police (PNP), Bureau of Fire Protection (BFP), City Disaster Risk Reduction and Management Office (CDRRMO), City Engineering Office, and the Department of Public Works and Highways (DPWH). *Effective information dissemination* is expressed through targeted road safety campaign drives in barangays and schools. Likewise, CPOSCO leverages social media platforms to quickly and efficiently share important road safety messages, educate the community, and promote awareness campaigns. These combined efforts enhance public knowledge and encourage community participation in road safety initiatives.

Table 3. Highlights of SWOT Analysis

Strengths	**Weaknesses**	**Opportunities**	**Threats**
● Experienced Personnel ● Coordinating Functions ● Effective Information Dissemination	● Budget Constraints ● Bureaucratic Hurdles ● Limited Workforce	● Technology Integration ● Community Engagement Program ● Urban Development	● Lack of Public Discipline ● Public's lack of knowledge on Road Safety

On the other hand, budget constraints, bureaucratic hurdles, and limited workforce were the observed weaknesses of CPOSCO. *Budgetary challenges* were defined in terms of halted initiatives like modular training on road safety awareness, as well as sustaining the agency's ability to effectively implement initiatives designed to enhance public safety measures and awareness campaigns. *Bureaucratic hurdles*, particularly with changes in administration. These transitions often lead to shifts in priorities and programs, impacting the continuity and effectiveness of ongoing initiatives. The realignment of focus with each new administration can result in delays or alterations to critical projects, including those aimed at enhancing road safety and public order. The *shortage of personnel* strains the office's ability to effectively manage and implement various safety programs and initiatives. This limitation affects the overall efficiency and responsiveness of the agency, highlighting the need for strategies to recruit and retain skilled professionals to strengthen CPOSCO's capacity to ensure public safety.

Key growth opportunities for CPOSCO were identified as: technology integration, community engagement, and urban development. *Integrating technology* was considered as both an opportunity and a challenge because enhanced efficiency of public safety (use of data analytics for traffic management, smart surveillance systems, deploying digital platforms for real-time communication/coordination), entail a huge cost in infrastructure, training, and maintenance. *Community engagement* in terms of public fora, town hall meetings, educational outreach, volunteer programs, feedback channels, and collaborative events, were viewed as safety initiatives that can foster a collaborative environment, where residents feel empowered and invested in maintaining public order. *Urban development* presents a unique opportunity to challenge CPOSCO to create a more organized, efficient urban environment and public safety measures, vis-avis the design and implementation of infrastructure that promotes safety and accessibility for all residents.

Lastly, the threats or challenges to CPOSCO's operational efficiency were lack of public discipline, and limited knowledge on road safety of the general public. *Lack of public discipline* is manifested in various forms, such as jaywalking, non-compliance with traffic signals, illegal parking, and the disregard for designated pedestrian lanes. These behaviors not only compromise the safety of pedestrians but also hinder the effective implementation of road safety measures. On the other hand, the public's limited knowledge about road safety was observed in many individuals being unaware of essential road safety rules and best practices, leading to unsafe behaviors and increased risks of road crashes. Addressing these weaknesses requires a multi-faceted approach, including robust public education campaigns to raise awareness about the importance of adhering to road safety rules, stricter enforcement of existing regulations, and the promotion of a culture of discipline and responsibility among community members.

7.2 Survey Questionnaire Results

Ensuring pedestrian safety, particularly in school environments, is a critical aspect of community well-being. Schools are high-traffic areas where students, parents, and teachers navigate daily road crossings, making safety measures essential. The survey results focused on assessing the perception, enforcement, and effectiveness of pedestrian safety measures in school zones, focusing on three key institutions: Dolores Elementary School, San Fernando Elementary School, and Pampanga High School. By understanding existing challenges, this research seeks to inform policy recommendations and improve pedestrian safety in these environments.

7.2.1 Demographic Analysis

The consolidated survey results showed that 76% of respondents were female, while 24% were male. In terms of age distribution, the majority (50%) fell within the 26-35 age group. Additionally, 20% of respondents were under 18 years old, followed by 16% in the 18-25 age range, 8% in the 36-45 age group, and 6% in the 46-60 age category. Notably, there were no respondents over 60 years old.

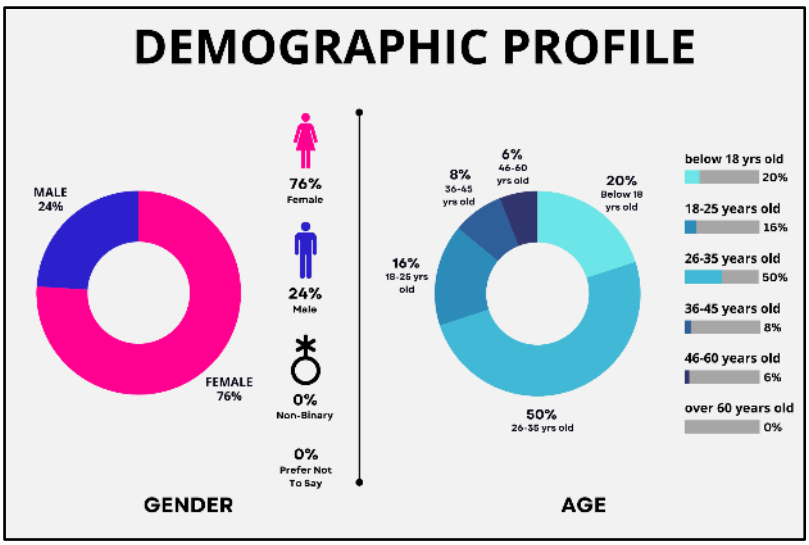


Figure 5. Demographic Profile of the Respondents

7.2.2 General Perception and Awareness on Pedestrian Safety

Survey results revealed that *Perception of Pedestrian Safety in the Area* was subpar based on nearly 52% combined "Poor" and "Very Poor" responses. In contrast, only 26% rate it positively ("Excellent" or "Good"), while 22% consider it "Average." This suggests that pedestrian safety is a pressing concern that needs improvement in many communities.

As regard to *Awareness of Pedestrian Safety Rules and Regulations*, the results show that while 36% of respondents consider themselves "Very Aware," a significant portion (40%) is only "Slightly Aware." Additionally, 24% fall into the "Moderately Aware" category. The lack of responses in the "Not Aware at All" category suggests that most individuals have at least some knowledge of pedestrian safety regulations, though there is room for improvement in raising awareness.

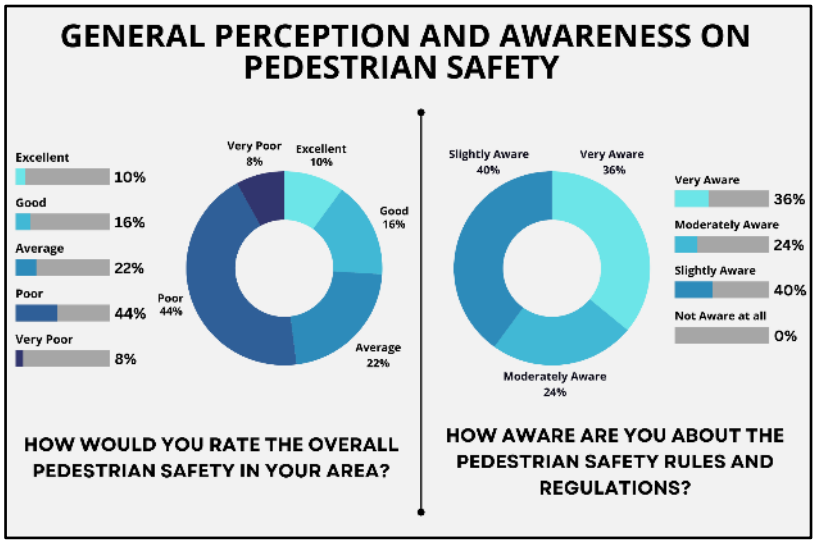


Figure 6. General Perception and Awareness on Pedestrian Safety

The survey results emphasize the need for authorities and urban planners to take proactive steps in improving pedestrian safety conditions. While awareness levels are relatively fair, the general perception of safety remains a concern. Implementing better pedestrian-friendly infrastructure, enforcing traffic laws, and conducting awareness programs could significantly enhance the safety and well-being of pedestrians.

7.2.3 Enforcement and Compliance

Ensuring pedestrian safety is not only about infrastructure but also about the enforcement of regulations and compliance by drivers. This survey assesses public perception regarding the enforcement of pedestrian safety laws and the frequency of non-compliant driving behaviors that pose risks to pedestrians. A significant 58% of respondents believe that *pedestrian safety regulations* are not adequately enforced, while only 28% feel that enforcement is sufficient. The remaining 14% are unsure. These findings suggest a lack of confidence in law enforcement efforts related to pedestrian safety, highlighting the need for stronger and more visible enforcement measures. As regard to *Drivers Failing to Yield to Pedestrians at Pedestrian Crossing*, over 50% of respondents experience this issue frequently, while 36% encounter it occasionally. Notably, no one reported never experiencing this problem. These figures indicate a widespread issue with non-compliance at pedestrian crossings, emphasizing the need for stricter enforcement and driver education. On *Speeding in Areas with Pedestrian Activity,*

50% of respondents encountered it frequently and 42% experiencing it occasionally. Only 2% stated that they never witness such behavior. This suggests that excessive speed remains a serious safety issue, particularly in pedestrian zones, where speeding significantly increases the risk of road crashes.

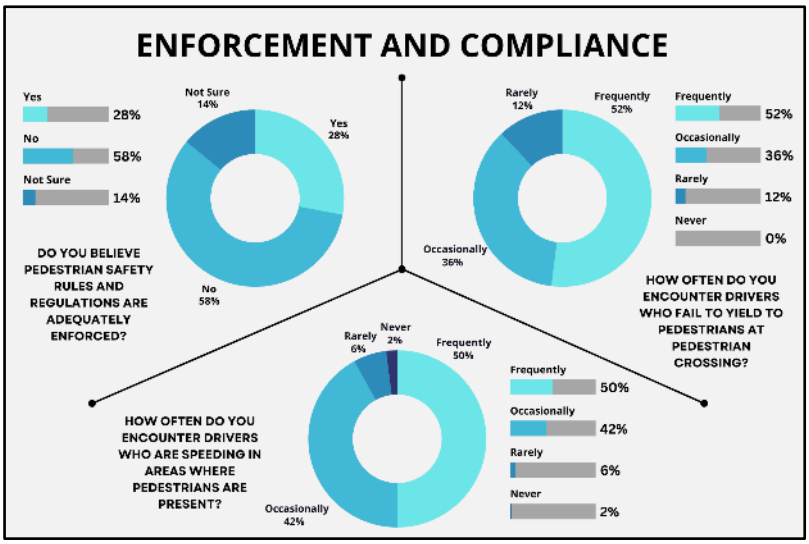


Figure 7. Enforcement and Compliance

The results of this survey reveal significant challenges in pedestrian safety enforcement and driver compliance. The high frequency of dangerous driving behaviors, such as failing to yield and speeding, poses a substantial risk to pedestrians. Addressing these issues will require a combination of better law enforcement, public awareness initiatives, and improved infrastructure to enhance safety for all road users.

7.2 4 Infrastructure and Facilities

The effectiveness of pedestrian safety measures is closely tied to the availability and visibility of infrastructure such as pedestrian crossing and pedestrian signage. This survey assesses public perception regarding the adequacy of pedestrian-related infrastructure in their areas. Participants were asked whether they believe there are *enough designated pedestrian crossing and signage to promote pedestrian safety.* A significant 76% of respondents believe that there are not enough pedestrian crossing and signage to promote pedestrian safety, while only 22% feel that existing infrastructure is sufficient. The 2% who are unsure indicate that, even where signage may exist, it might not be well-recognized or effective. This suggests a strong need for improvements in pedestrian-friendly infrastructure.

Respondents were also asked to rate the *visibility of pedestrian crossing and pedestrian signage*. An overwhelming 80% of respondents rated the visibility of pedestrian crossing and signage as poor, highlighting a serious issue in pedestrian infrastructure. Only 20% consider visibility adequate, reinforcing the need for enhancements such as better lighting, clearer road markings, and additional signage to improve pedestrian safety.

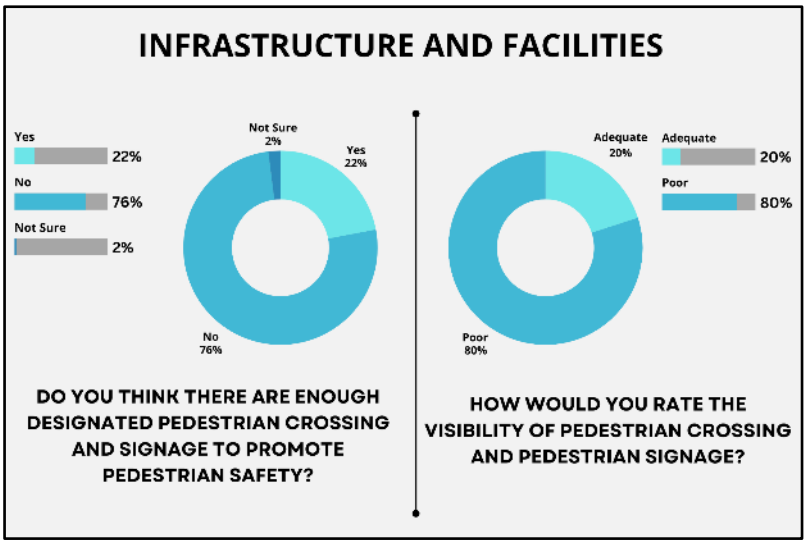


Figure 8. Infrastructure and Facilities

The survey results indicate that infrastructure deficiencies, particularly in the availability and visibility of pedestrian signage and pedestrian crossing, are major concerns for public safety. Addressing these issues by investing in better pedestrian infrastructure can help reduce road crashes and promote safer walking environments. Enhancements such as more clearly marked pedestrian crossings, improved signage, and better lighting can go a long way in ensuring pedestrian safety.

7.2.5 Education and Awareness Programs

Education and awareness initiatives play a crucial role in improving pedestrian safety by informing both pedestrians and drivers about best practices and regulations. Participants were asked if they believe that *educating students, parents, and community members about pedestrian safety* could help reduce road crashes around schools and within the community. An overwhelming 98% of respondents believe that pedestrian safety education can help reduce road crashes, while only 2% disagree. This strong consensus highlights the importance of awareness campaigns and training programs in promoting safer pedestrian behavior.

Respondents were also asked whether raising *awareness about pedestrian safety among drivers* could help reduce pedestrian road crashes. Every participant (100%) agreed that increasing driver awareness of pedestrian safety would help reduce road crashes. This reinforces the need for targeted campaigns focusing on driver education, emphasizing the importance of yielding to pedestrians, adhering to speed limits, and respecting crosswalks.

Respondents were asked if they have ever *participated in pedestrian safety education programs or campaigns.* Despite strong support for pedestrian safety education, only 14% of respondents reported having participated in such programs, while 86% have not. This suggests a gap between perceived importance and actual involvement, indicating the need for greater accessibility and promotion of safety education initiatives.

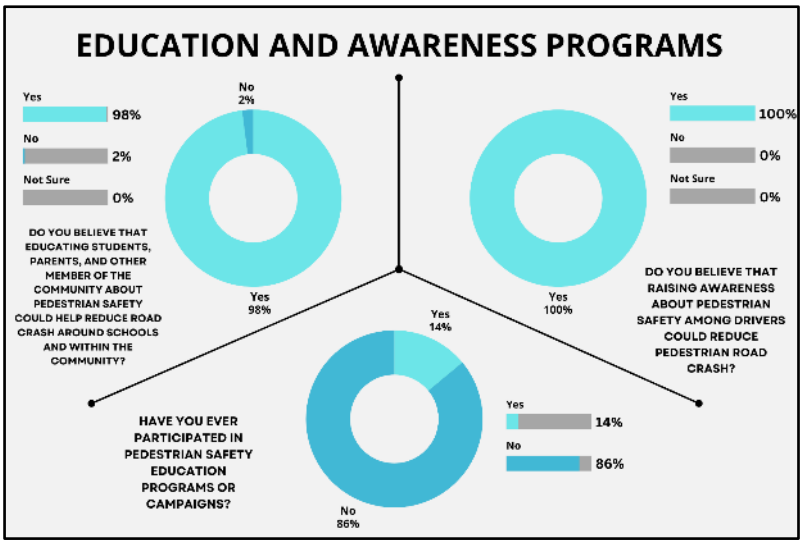


Figure 9. Education and Awareness Programs

The survey results emphasize the critical role of education and awareness in pedestrian safety. While the public strongly believes in the benefits of such programs, participation remains low. Efforts should be made to expand pedestrian safety campaigns, encourage community involvement, and integrate safety training into school curriculums and driver education programs. These steps could significantly improve pedestrian safety and reduce road crashes on the roads.

8. CONCLUSION AND RECOMMENDATIONS

The action research design used in this study requires concrete action steps based on the findings in lieu of conclusions and recommendations. On this regard, the following are identified:

8.1 Formulation of Resolution and Memorandum of Understanding (MOU)

By reiterating road safety laws, such as speed limit, seat belt use, wearing motorcycle helmet, anti-drunk and drug driving, anti- distracted driving, children's safety act, these documents formalize the commitment of stakeholders, provide clarity on roles and responsibilities, and establish a structured framework for collaboration. Meanwhile, the MOU outlines specific terms of partnership, ensuring accountability and alignment among involved parties. By formalizing these frameworks, CPOSCO enhances its ability to implement effective strategies, promote safer roads, and create a lasting impact.

8.2 Intensify Road Safety Month

Road safety awareness week or also known as UN Global Road Safety Week is recognized and celebrated every third week in the month of May, which promotes awareness and action to improve road safety worldwide. By formalizing this event in the City of San Fernando Pampanga, the awareness campaign aims to educate and empower youth on responsible road use through interactive activities, scenario-based learning, and community engagement, and supports the Philippines' commitment to reducing road-related injuries and fatalities.

8.3 Infomercial on Road Safety

Infomercial on road safety serves as an engaging and impactful educational tool, designed to raise awareness and instill responsible road behavior especially among the youths in the City of San Fernando, Pampanga. It combines informative content with compelling visuals to effectively communicate key safety messages to a broad audience. By seamlessly blending informative visual content, it captures attention, fosters understanding, and effectively conveys crucial road safety messages encouraging proactive and responsible actions on the road.

8.4. Web/Mobile App (Community Engagement App)

Web and mobile applications are collaborative digital platforms to cultivate community-driven road safety awareness and engagement in the City of San Fernando, Pampanga. By empowering youth leaders, youth, and local authorities, the apps serve as centralized hubs for reporting road hazards, sharing safety insights, and participating in advocacy campaigns. Through real-time updates, interactive learning, and active community involvement, its purpose is to enhance public safety, encourage responsible road behavior, and strengthen partnerships between the government and the people in creating safer roads for all.

8.5 Road Safety Education: Train the Trainer Road Safety Workshop

One important way to address road safety issues is by conducting road safety education and awareness campaigns. The researchers proposed a program titled “Scenario-Based Road Safety Education for Youth Leaders”. A Train-the-Trainer Road Safety Workshop empowers school and community youth leaders by equipping them with the knowledge and skills to effectively disseminate road safety practices. This approach ensures that road safety education reaches a wider audience, empowers youth, and fosters a culture of safety and responsibility within the community.

8.6 Proposal to Institutions (DepEd) for Integration of Road (Pedestrian) Safety Curriculum and Programs in Basic Education

Road safety is a critical issue that affects individuals of all ages, particularly students who are among the most vulnerable road users. Integrating road (pedestrian) safety education into the basic education curriculum is a proactive approach to equipping students with the knowledge and skills necessary to navigate roads safely. This initiative aims to foster a culture of safety and responsibility among young learners, ultimately reducing the road crashes and promoting a safer community. Integrating road (pedestrian) safety education into the basic education curriculum is a crucial step toward creating a safer environment for students and the broader community. By raising awareness, developing practical skills, and promoting responsible behavior, this initiative will significantly reduce the risk of road crashes and cultivate a culture of safety.

8.7 Infrastructure Improvement

Implementing engineering interventions, such as upgrading sidewalks, enhancing pedestrian crossings, improving road markings and signages, installing better lighting, and introducing traffic calming measures, are meant to promote a safer road environment. These improvements

not only reduce risks but also encourage stakeholders to actively engage and collaborate in road safety programs, promoting a culture of shared responsibility.

8. 8 Prioritization Matrix

The researchers prepared a prioritization matrix on the above-cited interventions to further enhance their viability and potential. Their role as researchers acknowledges that each intervention has its own implementation timeline and a different type of impact on the involved stakeholders. By employing the pillars of public administration, the researchers decided to systematically prioritize the proposed solutions, making sure that the most feasible, impactful, and equitable measures are implemented first. This approach aims to maximize the benefits of each intervention while addressing the road safety issues in a structured and comprehensive manner based on two (2) criteria, namely the pillars of Public Administration, and Likert Scale of Importance as follows:

Table 4. Criteria 1: Pillars of Public Administration

Criteria	**Weight**	**Description**
Economy	1	Solution that offers the most significant benefits relative to the costs.
Efficiency	2	Solution that could deliver the best results with minimal resources.
Social Equity	3	Solution that will benefit all segments of society equitably.
Responsiveness	4	Solution that responds to the needs, preferences, and feedback of the community.
Effectiveness	5	Solution that will deliver meaningful and impactful outcomes.

Table 5. Criteria 2: Likert Scale: Significance

Qualitative	**Rating**	**Description**
Insignificant	1	Not important or impactful at all
Minor	2	Low level of importance or impact
Moderate	3	Average significance, neither too low nor too high
Major	4	High level of importance or impact
Critical	5	Extremely significant and impactful

The prioritization matrix was successfully formulated based on the above-mentioned criteria and herein presented in Figure 7 below:

NO.	PROPOSED SOLUTIONS	EFFECTIVENESS		RESPONSIVENES		SOCIAL EQUITY		EFFICIENCY		ECONOMY		TOTAL WEIGHTED SCORE	RANK
		WEIGHT:	5	WEIGHT:	4	WEIGHT:	3	WEIGHT:	2	WEIGHT:	1		
		SCORE	WEIGHTED SCORE	SCORE	WEIGHTED SCORE	SCORE	WEIGHTED SCORE	SCORE	WEIGHTED SCORE	SCORE	WEIGHTED SCORE		
1	CREATION OF RESOLUTION AND MEMORANDUM OF UNDERSTANDING (MOU)	5	25	5	20	5	15	4	8	5	5	73	1
2	INTENSIFY ROAD SAFETY MONTH	4	20	3	12	4	12	3	6	3	3	53	7
3	INFOMERCIAL ON ROAD SAFETY	4	20	4	16	3	9	3	6	3	3	54	6
4	WEB/MOBILE APP (COMMUNITY ENGAGEMENT APP)	4	20	3	12	5	15	3	6	4	4	57	4
5	ROAD SAFETY EDUCATION: TRAIN THE TRAINER ROAD SAFETY WORKSHOP	5	25	4	16	5	15	4	8	4	4	68	3
6	PROPOSAL TO INSTITUTIONS (DEPED) FOR INTEGRATION OF ROAD (PEDESTRIAN) SAFETY CURRICULUM AND PROGRAMS IN BASIC EDUCATION	4	20	3	12	4	12	4	8	3	3	55	5
7	IMPROVE INFRASTRUCTURE (BUILD SIDEWALKS, CROSSWALKS, AND DEDICATED PEDESTRIAN LANES, ENHANCE LIGHTING, TRAFFIC CALMING MEASURES)	5	25	5	20	5	15	3	6	3	3	69	2

Figure 10. Prioritization Matrix

PROPOSED SOLUTIONS	RANK
CREATION OF RESOLUTION AND MEMORANDUM OF UNDERSTANDING (MOU)	1
IMPROVE INFRASTRUCTURE (BUILD SIDEWALKS, CROSSWALKS, AND DEDICATED PEDESTRIAN LANES, ENHANCE LIGHTING, TRAFFIC CALMING MEASURES)	2
ROAD SAFETY EDUCATION: TRAIN THE TRAINER ROAD SAFETY WORKSHOP	3
WEB/MOBILE APP (COMMUNITY ENGAGEMENT APP)	4
PROPOSAL TO INSTITUTIONS (DEPED) FOR INTEGRATION OF ROAD (PEDESTRIAN) SAFETY CURRICULUM AND PROGRAMS IN BASIC EDUCATION	5
INFOMERCIAL ON ROAD SAFETY	6
INTENSIFY ROAD SAFETY MONTH	7

Figure 11. Ranking of the Proposed Solutions

Further, the researchers devised a development prototype or a strategic framework centered around the three pillars of road safety management: Education, Enforcement, and Engineering. This tripartite approach ensures a holistic and integrated methodology to enhance road safety, encompassing public awareness, regulatory measures, and infrastructural improvements (Refer to figure 9). This was anchored around the top three (3) interventions. The formulation of Resolution and Memorandum of Understanding this will serve as the City's framework for the effective implementation of the Road Safety Education Program. Infrastructure Improvement as a crucial enabler, creating a supportive environment that reinforces safety measures and facilitates the effective implementation of road safety initiatives. Key improvements include the installation of traffic signs, pedestrian lanes, and other traffic calming measures that will help regulate traffic flow and protect vulnerable road users. Finally, Road Safety Education: Train-the-Trainer Workshop for Student Leaders - aims to cultivate a culture of responsible

behavior and road safety awareness. By equipping student leaders with comprehensive knowledge and practical skills, the workshop instills a sense of accountability and proactive engagement. These trained leaders will become advocates for road safety, guiding their peers and promoting safer practices within their schools and communities. (Refer to Figure 13)

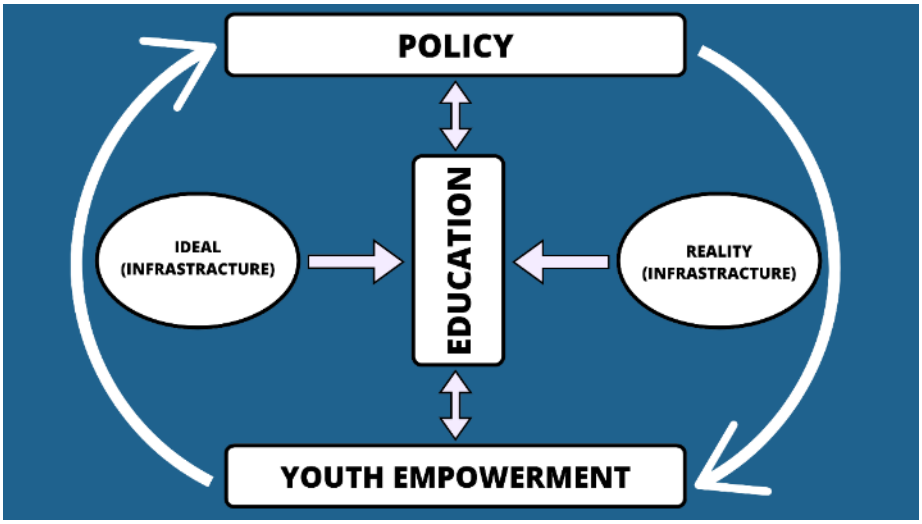


Figure 12. Proposed Development Prototype

Figure 13. Prototype 3: Module on Train the Trainer Pedestrian Safety Booklet

9. FURTHER STUDIES

While this study highlights the effectiveness of scenario-based road safety education and youth-led initiatives, further research is needed to expand its findings and ensure long-term impact. Future studies could focus on conducting a longitudinal assessment to measure the sustained behavioral changes and road crash reduction rates among trained students over time.

Additionally, a comparative analysis of different road safety education methods, such as virtual simulations or gamification, could provide insights into the most effective learning approach.

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