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SOCIALIZATION AND EDUCATION OF SAFE PROCEDURES FOR CROSSING LEVEL CROSSINGS TO KINDERGARTEN TEACHERS ALL OF BLITAR REGENCY

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ABSTRACT
This Community Service Program (PKM) aims to enhance the knowledge and awareness of kindergarten teachers in Blitar Regency regarding safe procedures for crossing level crossings between railway tracks and public roads. The program was initiated in response to the high incidence of level-crossing accidents, which are predominantly caused by low traffic discipline and limited understanding of safety regulations among road users. The activity was implemented through socialization and visually-based educational sessions in collaboration with the Blitar Regency Transportation Agency. The implementation consisted of three stages: preparation and initial assessment, visual education and socialization, and evaluation and reflection. Pre-test results indicated that 72% of participants were unable to correctly distinguish between types of level crossings and lacked understanding of mandatory safety procedures. Following the intervention, post-test results demonstrated substantial improvement, with 96% correct responses and an average N-Gain score of 0.72, indicating a high level of improvement. These findings indicate that visual-based education is effective in strengthening participants' conceptual and procedural understanding. Kindergarten teachers are expected to serve as change agents in promoting traffic safety awareness from an early age.

Keywords: kindergarten teachers; level crossing; railway safety; traffic behavior; visual education

INTRODUCTION
Rail transportation is currently one of the superior modes of transportation that is in demand by the public. Train users are increasing day by day because the level of accuracy of departure times is getting higher. Along with height, the mobility of railway traffic is also increasing, the level of train travel security, especially at level crossing. An intersection between railway lines by road called a crossing. Almost every month, of information from mass media reporting about incidents and several accidents at a level crossing. At the crossing, a plot between the road and the railway line is a critical point for accidents. According to the Technical Guidelines for Level Crossings between Roads and Railways. Safety at level crossings a plot is a shared responsibility of all stakeholders' transportation interests, as regulated in laws and regulations. juridical, Law Number 23 of 2007 concerning Railways has stipulated that train travel get top priority. However, in practice, the implementation of this provision faces various obstacles. Synergy of the parties who have the duties and authority to handle safety at crossings. Level crossings also need to be created to ensure transportation safety. Safety at level crossings a plot between railway lines and highways is a mandate

fundamental regulation. The existence of a legal framework that regulates governance crossing and distribution is the responsibility of stakeholders true related interests aims to reduce the potential for accidents. Although thus, the height frequency incident shows that enforcement regulations and efforts the government's safety assurance is not optimal. There is a lack of discipline. behavior road users , namely break through crossing barrier during siren sounds (Ristanto et al., 2022). This fact indicates that to improve the safety of road users, a breakthrough is needed that goes beyond aspect infrastructure solely but also behavior road users who are still break through railway crossing gate at a crossing a plot needs to be educated. Differences in configuration geometric crossings, traffic intensity, and train parameters are factors determinants that cause heterogeneity driver behavior in the crossing area a plot (Tey et al., 2012).

Required approach to road users for improvement awareness and discipline road users. Therefore, interventions to reduce this behavior breaking through is not enough just by adding technical devices, but rather must balance with an approach-based behavior. Drivers aged young people understand that a railroad crossing is an intersection with a very high level of potential danger (Wallace, 2008) . The increasing number of traffic accidents cannot be separated from factors that influence traffic accident like driver factors , vehicle factors and road factors (Jumadil et al., 2022) . Road users who are disorderly and behave whatever he wants endanger the safety of other road users (Poei & Ansusanto, 2016) . Causes main accident at a crossing a plot can be seen from a number of factor among them is behavior road users and lack of awareness comply signs traffic signs around the crossing one plot , besides that also from factor behavior discipline road users and the number of crossings a wild plot whether guarded or unguarded . Crossing a plane , by definition , is an intersection between the road and the railway line (Minister of Transportation Regulation Number 94 of 2018). Traffic regulations at crossings level crossings are also regulated in Law Number 22 of 2009 concerning Traffic and Road Transportation (State Gazette of the Republic of Indonesia Number 96 of 2009), in Article 114 it is stated that at level crossings a plot between the railway line and the road, the vehicle driver must (a) stop when the signal has sounded, the railway crossing has started to close, and/or there is signal others, (b) prioritizing trains; and (c) grant primary rights to the earlier vehicle crossing the rails. If violate the article so the legal consequences are criminal penalties with criminal imprisonment for a maximum of 3 (three) months or a fine of a maximum of IDR 750,000.00 (seven hundred and fifty thousand rupiah)”

Availability of a regulatory framework that governs crossing a plot between railway lines and highways should can reduce the potential for accidents. Regulation has also been distribute handling responsibilities issue crossing to stakeholders authorized interests .

Blitar Regency, which is crossed by a railway line active, has many crossing points level crossings, both official and unofficial. Blitar Regency has 60 level crossings a level crossing consisting of officially guarded, unguarded, and illegal crossings. Compliance road users at crossings a plot Still low, which is indicated with action frequent like break through barriers and negligence in ensuring security. This problem is exacerbated by the unavailability of infrastructure adequate security, especially at unguarded official crossings or illegal crossings. This phenomenon, coupled with lack of discipline society, creating a constant potential for danger. The train motto is a tool to convey orders or prohibitions based on the Decree of the Board of Directors of PT Kereta Api Indonesia (Persero) Concerning Official Regulation 3 (PD 3) Concerning Mottos (2010). Kindergarten (TK) teachers were chosen as a strategic

target audience. As educators at the Early Childhood Education (PAUD) level, they have a role central in forming children's character and basic knowledge, including safety culture. In addition, as members of society, teachers are also active road users who need to be equipped understanding comprehensive. Through educational and socialization activities, insight about railway safety given with target the main goal is to reduce the number of accidents in the railway transportation sector (Imron & Handoko, 2021).

The hope with the participation of kindergarten teachers in this education, it can add insight . Learning is an activity that occurs in everyone regardless of age limit , and lasts a lifetime (Junaidi, 2019). This community service activity aims to socialize and educate kindergarten teachers in Blitar Regency regarding procedure safe crossing a plot, with their hopes can be an agent of change in his community .

METHOD

This Community Service activity is carried out in the form of socialization and education. face to face. The implementation of this activity is in collaboration with the Blitar Regency Transportation Agency, and the target is kindergarten teachers throughout Blitar Regency. This Community Service activity is designed as a *workshop.* education systematic interactive learning . This method focuses on knowledge transfer procedural and strengthening awareness through visual stimulation . *In* its implementation , this activity is divided into three stages Main : (1) Preparation and Initial Assessment, (2) Implementation Visual Education and Socialization, and (3) Evaluation and Reflection.

1. Initial Preparation and Assessment

The preparation stage focuses on two aspects which include: Administrative namely coordinating permits , implementation , scheduling with the Blitar Regency Transportation Agency and Substantive that is :

a. Material Development: Prepare the main presentation material referring to the Regulation of the Minister of Transportation Number 94 of 2018 concerning Improving the Safety of Level Crossings Between Railways and Roads; Technical Guidelines for Traffic Control on Road Sections at Potential Accident Locations at Level Crossings with Railways; Law Number 23 of 2007 concerning Railways (State Gazette of the Republic of Indonesia 2007 Number 65) as well as a number of references other.
b. Compilation of Visual Materials: Collecting and designing visual materials in the form of presentation *slides* , posters, and video clips that are specific will used to introduce types of crossings and signs.
c. Instrument Development : Developing *pre-test* and *post-test questionnaires* to measure *knowledge gain* (increase) knowledge) of participants .

2. Implementation Visual Education and Socialization

a. Conceptual Exposure and Pre-Test
   Phase implementation The main focus of this Community Service (PKM) activity is education and outreach with apply Visual -*Based* Learning methodology . This series of activities was initiated with administering an initial assessment (*pre-test*) designed to map basic understanding (*baseline knowledge*) of participants . After the initial assessment, it is continued with the delivery of conceptual material about the urgency of safety at crossings a plot and presentation of the basis the legal regulations that regulate it . The next stage is the introduction of three types of crossings a plot in a way specific .

The use of visual media in this session is aimed at building a firm and comprehensive understanding and increase participants' information retention (memory).

b. Crossing Types (*Visual-Based Learning*)
In this session, participants introduced to 3 (three) types of crossings a plot visually to build a clear and memorable understanding . The visual materials displayed include:
1) Officially Guarded Crossings : Displays photos of crossings that have a JPL number, are equipped with a barrier (*boom gate*), siren , and guard post (PJL). Emphasizes that this is a crossing. protected .
2) Official Crossings Not Guarded : Shows photos of crossings that have a JPL number but *does not* have a barrier . Visual focus on existing signs , such as STOP signs and cross signs *Andreas Cross* . Emphasizes that full safety responsibility rests with road users .
3) Illegal Crossings : Shows photos of the crossings that have been formed self-help by the community , without standard road paving , without signs , and very dangerous . Emphasizing that this crossing is illegal and must be avoided .

c. Sign Identification signs around the crossing a plot
This session focuses on recognizing signs in the crossing area. a plot . Showing visual images in a presentation, participants shown
1) Signs Warning : STOP sign (must stop), traffic sign Warning to Beware of Trains (in the form of a cross), and signs approaching crossing warning
2) Signs Prohibition : Signs prohibition break through doorstop .
3) Active Signal : Visualization light *blinking* (flashing) that lights up alternating , and siren audio (explaining the meaning: "Train will pass, must stop").

d. Socialization of Safe Procedures and Case Studies
Post-participant get understanding about visual context (type of crossing and signs), Community Service team public explaining Traffic Procedures referring to the Director General's Regulation Hubdat . Every point of regulation given visual reinforcement such as illustration graphic for the procedure "Must look left and right". This reinforcement is further supported by video screening of the incident case study factual resulting from procedural violations ."

e. Interactive Discussion and Q&A
This session is allocated for interactive discussion , which aims to facilitate participants (teachers) to deliver empirical feedback and field observations regarding crossing conditions a plot in their environment . Next, the discussion was directed to formulate the most effective pedagogical strategy in disseminating this safety material in the context early childhood education programs .

3. Evaluation and Reflection
This final stage is designed to measure the impact of the intervention and ensure sustainability.
a. Knowledge Evaluation Quantitative : Participants are given *post-test* using instruments that have been validated and identical with *pre-test* .
b. Impact Analysis **:** Conducting an analysis comparative between *pre-test* and *post-test* scores to measure in a way quantitative effectiveness of socialization.

Dissemination and Closing: The activity was closed with a briefing by the Head of the Blitar Regency Transportation Agency, which was aimed at providing supplies. to kindergarten teachers so that the results of this activity can be used as teaching materials for kindergarten children in their respective schools.

RESULTS AND DISCUSSION

The implementation of the socialization activities went smoothly and interactively . The results *of the pre-test* shows that the majority of participants (around 72%) have not been able to differentiate clearly between the types of crossings and do not fully understand the mandatory procedures when crossing .

1. **Analysis Participants' Initial Understanding (Pre-Test Results)**
   Before the socialization material was delivered, all 25 participants were asked to fill out a *pre-test* questionnaire containing 10 questions. essential (Multiple Choice and True/False) regarding crossing safety knowledge one plot . *Pre-test results* show level initial understanding that is still low . From 25 participants , key findings were obtained :
   a. 72% of participants (18 people) could not differentiate in a way appropriate between " Official Crossings Guarded and Official Crossings Not Guarded " majority consider all crossings without barriers to be illegal crossings .
   b. Only 28% of participants (7 people) fully understood that the "Stop, Look Left and Right" procedure is an absolute obligation at unmanned crossings .
   c. 84% of participants (21 people) were not aware that breaking through crossing barrier is a violation.

   Findings This *pre-test* validates urgency implementation of socialization, shows that there is a gap significant knowledge *gap* among participant .

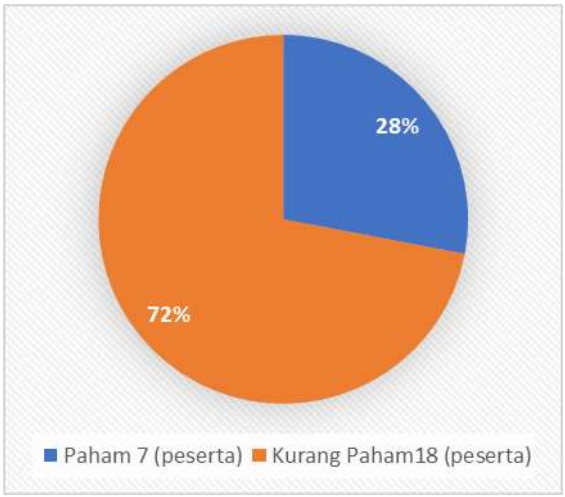

Figure 1. Chart Analysis Participant's Initial Understanding (Pre-Test)

2. **Implementation of Visual Education (Intervention)**
   Follow up findings *pre-test* (e.g., inability to understanding of 18 participants regarding the type of crossing), and 7 participants only understood the existence of illegal crossing. Explanation details regarding the results of findings *pre-test* the presented below.
   a. Inability understanding (72% of participants)
      In this case , the speaker uses *Visual-Based Learning* with displaying *side-by-side* photos . types of types crossing one plot including signs signs around the crossing a plot

juxtaposed with Illegal Crossings (no signs , uneven rail tracks). These visual differences are explained in detail. explicit .

b. Answer Doubt (28% of Participants)
"Stop, Look Left-Right" procedure is explained using infographics and supported video screening of case studies of accidents at unguarded crossings .

3. Knowledge Improvement Analysis (Post-Test Results)

After all the material and discussion sessions ended , 25 participants return given a *post-test* questionnaire . Instrument *post-test* identical with *pre-test* to measure improvement knowledge in a way accurate . *Post-test results* show improvement a very significant understanding , namely

a. 96% of participants (24 people) were able to answer correctly question regarding the differences between " Official Guarded Crossings , Official Unguarded Crossings " and " Illegal Crossings ".
b. 96% of participants (24 people) now understand that "Stop, Look Left-Right" is a mandatory procedure at unmanned crossings .

The analysis used to measure The effectiveness of a treatment in *the pre-test* and *post-test model* is *Normalized Gain* (N-Gain).
From the data calculation of 25 participants , an average N-Gain score of 0.72 was obtained.

Based on classification Hake (1999), *g score* = 0.72 ($g > 0.70$) shows that the effectiveness implementation of Community Service This community is in the "High" category. This means that the socialization method with approach visual education and regulatory exposure proven to be very effective in increasing knowledge participant .

4. Findings (Observation and Discussion Results)

Qualitative data was obtained through participant observation and interactive discussions and Q&A sessions. The Community Service Team public take notes essence questions , statements and commitments conveyed by 25 participants the .
Discussion Results:

a. Adoption Knowledge : Enthusiasm participants are very high . Many teachers are proactively ask not only about your own safety, but *what is the best way* teaching this concept to early childhood (kindergarten).
b. Paradigm Shift : There was a clear paradigm shift . Participants who were previously blame " the absence of " barang pintu" now understands that the primary responsibility there are road users when crossing unguarded crossing .
c. Commitment Dissemination : The most important qualitative finding is the emergence of commitment from the teachers. This is reflected from statement of one of participant: "Frankly , I just realized, sir, that if there isn't any barrier but equipped with signs the sign means crossing on an official plot and we must look right and left before crossing ." All this time I I think it's the same as the wild one. Later this material will be I use it as material for children in kindergarten."
d. This statement indicates that the purpose of Service to The community's commitment to making teachers *agents of change* and disseminators of safety information has begun to be achieved.

5. Education About Classification Crossing A plot

The first material presented was about management and classification crossing plot , which aims to increase safety. Participants are given understanding that not all crossings are the same. By the organizer infrastructure railways, official crossings will be given a registration number known as the Crossing Line number Direct (JPL). The presence of this JPL number indicates that the crossing the recorded, official, and ideally under surveillance.

Figure 2. Delivery of Material

Figure 3. Participants (Kindergarten teachersthroughout Blitar Regency)

In this socialization, the material focuses on explaining the differences between the 3 (three) types of crossings that currently exist in Indonesia:

a. Officially Guarded Crossings : Crossings that have a JPL number and are equipped with infrastructure (barriers , sirens) and officers/ guards (PJL).
b. Official Crossing Not Guarded : This crossing is equipped with signs. signs but not guarded by officers and/or not equipped with a barrier . Often only equipped.
c. Illegal Crossing : A crossing that is formed in a way self-help by the community without permission from organizer railway , does not have a JPL number, and is very dangerous because it is not recorded in the database of the Ministry of Transportation or PT. KAI.

Figure 4. Crossing Official plot is not guarded
(JPL 179 Tawangsari Garum)

Majority previous participants assumed that if there was no doorstop, then crossing is safe. This education emphasizes that at Official Unmanned Crossings, the responsibility for safety is entirely on the driver. It is up to road users . Road users are required to stop and ensure their safety before crossing. Illegal crossings are highly discouraged and ideally, must be closed.

6. Crossing Procedures (Director General Regulation) Contact SK.497/AJ/401/DRJD/2018)

The core material of this socialization is a detailed presentation regarding Traffic Procedures on Road Sections at Crossings At level , referring to the technical regulations of the Technical Guidelines for Traffic Control on Road Sections at Potential Accident Locations at Level Crossings with Railways , Regulation of the Director General Land Transportation No. SK.497/AJ/401/DRJD/2018.Crucial points that are emphasized in education and discussed together. Participants in this case are kindergarten teachers:

Table 1.
Crucial Points Emphasized in Education

No.	Description	Action
1.	Absolute Obligation to Stop (STOP):	a. It is emphasized that drivers must stop when the signal sounds or the barrier begins to close. the cross is a fatal violation. b. At crossings without barriers , drivers are required to reduce speed and stop for a moment before crossing. rail
2.	Procedure " Look Left – Right"	a. Main focus . After stopping, the driver must look left and right to ensure that no train is approaching . passing by . b. To support this procedure , it is recommended to open the side window so that you can hear warning (train siren or horn) more clearly.
3.	Train Priority	It is socialized that every Road users are obliged to give priority train track
4.	Fast responsive	a. No crossing if the space is opposite There are not enough rails (for example due to traffic jams). Many accidents happen because the vehicle is stuck in the middle rail (*gridlock*). b. Road users must Certain his vehicle can pass rails without getting stuck .
5.	Emergency Preparedness	a. Participants are also provided with Emergency knowledge . If the engine suddenly dies on the tracks, the driver must immediately exit and evacuate the vehicle (if possible) or escape . b. When will When crossing , it is recommended to unfasten the seat belt and ensure the door is unlocked to make it easier. evacuation quickly in case of emergency.

At the crossing a plot between the railway lines by road, must be equipped with Traffic signs that function as warnings , prohibitions , commands or instructions for road users include :

Figure 5. Signs signs warnings and prohibitions
at the crossing a plot

7. Post -Socialization Evaluation Results

Post-test results show improvement significant understanding . As many as 95% of participants were able to answer correctly question about mandatory "Stop, Look Left-Right" procedures at unguarded crossings , increased from only 30% at *pre-test* . The teachers also pointed out enthusiasm high in discussion sessions, committed to integrating this material into teaching methods in kindergarten (for example through songs , stories , or demonstrations).

CONCLUSION

Community Service Activities in the form of socialization and education procedure safe crossing crossing a plot has been successfully implemented targeting kindergarten teachers throughout Blitar Regency. This activity has proven to be effectively increase knowledge and awareness participant about classification crossing and procedures safe passage according to the Director General's Regulation Hubdat No. SK.497/AJ/401/DRJD/2018. Kindergarten teachers as participants expected can be an agent effective dissemination of information, both within the family, community, and to students them to instill a culture of safety from an early age. Similar activities be carried out on an ongoing basis with target segment other communities (for example, junior high/high school students, public transport drivers, and motorcycle taxi communities) as well as collaboration between stakeholders interests (local government, police , and organizers) Railways) for handling illegal crossing.

REFERENCES

Decision of the Board of Directors of PT Kereta Api Indonesia (Persero) regarding Service Regulation 3 (PD 3) regarding Mottos, Pub. L. No. KEP.U/HK.215/VII/1/KA-2010 (2010).

Minister of Transportation Regulation Number 94 of 2018 Improving the Safety of Level Crossings Between Railways and Roads, https://peraturan.bpk.go.id/Details/104435/permenhub-no-94-tahun-2018 (2018).

Technical Guidelines for Level Crossings between Roads and Railways, Pub. L. No. SK.770/KA.401/DRJD/2005 (2005).

Technical Guidelines for Traffic Control on Road Sections at Potential Accident Locations at Level Crossings with Railways, Pub. L. No. SK.407/AJ.401/DRJD/2018 (2018).

Hake, R.R. (1999). Analyzing Change/Gain Scores. American Educational Research Association's Division D: Measurement and Research Methodology.

Imron, NA, & Handoko. (2021). Efforts to Improve Road User Safety at Level Crossings Through a Community Participatory Approach. Madiun Spoor: Journal of Community Service, Indonesian Railway Polytechnic, Madiun, 1 (2).

Jumadil, Hakzah, & Mustakim. (2022). Traffic Safety Analysis Based on Drivers' Understanding of Traffic Sign Symbols (Case Study: Data'e, Lainungan, Sidenreng Rappang Regency). Journal Karajata Engineering, 2 (2), 1–9.

Junaidi. (2019). The Role of Learning Media in the Teaching and Learning Process. Journal of Educational Management and Training, 3 (1), 45–56.

Minister of Transportation Regulation Number 36 of 2011 concerning Intersections and/or Contacts Between Railway Lines and Other Buildings, (2011).

Poei, EP, & Ansusanto, JD (2016). Traffic Behavior that Supports Road Safety. Journal of Civil Engineering, 14 (1), 10–19. https://doi.org/10.24002/jts.v14i1.1012

Law Number 23 of 2007 concerning Railways (State Gazette of the Republic of Indonesia 2007 Number 65), (2007).

Law Number 22 of 2009 concerning Traffic and Road Transportation (State Gazette of the Republic of Indonesia Number 96 of 2009), (2009).

Ristanto, I., Supriyanto, R., & Safarizki, HA (2022). Study of Driving Behavior at the Ngrombo Purwodadi Railway Crossing. Spirit Pro Patria E-Journal, 8 (1), 72–81. https://doi.org/10.29138/spirit.v8i1.2135

Tey, L.-S., Kim, I., & Ferreira, L. (2012). Evaluating Safety at Railway Level Crossings with Microsimulation Modeling. Transportation Research Record, 2298 (1), 70–77.

Wallace, A. M. (2008). Motorist Behavior at Railway Level Crossings: the Present Context in Australia. Queensland University of Technology.